Chapter 4

A Deep Dive into Extension

THIS CHAPTER TAKES A DEEP DIVE into the final E: extension. To extend learning, technology should support learning in authentic ways. Technology has the ability to connect students' school learning to their everyday lives, for example, in order to make the learning concepts more realistic to the student. While technology can support authentic learning opportunities, it can also make learning more contrived, however. Thus, it is important that technology is used to connect student learning to the real world and not an artificial reality. Extending learning with technology should include the following elements:

- Technology tools should be easily accessible to students in their everyday lives so that learning and knowledge gathering can occur 24-7 anytime and anywhere for students.
- Technology should help connect school learning curriculum with students' everyday life experiences, making the learning concepts authentic to life experiences.

- Technology should help build students' soft skills, such as the digital age skills described in the Framework for 21st Century Learning, and build on students' prior knowledge.

Similar to the last two chapters, this chapter uses key pieces of research in education to define extension with technology and shares research-informed suggestions for extending learning with technology tools.

Learn 24-7, Anytime and Anywhere

When students can access and use the same tools outside of school as they use in school, their learning more easily transfers from the classroom into the real world. For example, if a student uses a smartphone to document a field trip to a museum by video recording observations and then editing those observations using an app, it is likely that the student will be able to use a smartphone in everyday life to capture oral interviews and edit them for sharing. Conversely, students who use a costly school-owned video camcorder to capture the oral reflections during the field trip and then edit the video on a school computer with expensive editing software might find it difficult to transfer their oral language capture skills to their everyday lives.

Research on knowledge transfer shows that new technologies make it possible for students to use technology in school learning experiences similar to how professionals would in the workforce (National Research Council, 2000). Thus, students understanding how to use easily accessible, everyday technology tools for educational or professional growth may provide a way to enhance transfer across domains. Therefore, if you have an opportunity to choose between a tool common to students in their everyday lives and a proprietary tool made just for schools to capture, construct, or support learning, it may be better to choose the everyday tool and build in scaffolds as needed. The everyday tool may support the transfer of the learning concepts more easily than a tool the students will not encounter in their everyday lives.

Bridge School Learning and Student Everyday Life

Over a century ago in his pedagogic creed, John Dewey wrote, "I believe that education, therefore, is a process of living and not a preparation for future living" (1897, p. 80). Dewey summarizes the importance of connecting what students are learning in their schooling to their everyday lives. Modern research supports Dewey's assertion, finding that when learning is connected to students' own experiences, students are more likely to retain the information and be able to use it in the real world (Brown et al., 1989; Lave & Wenger, 1990; National Research Council, 2000). Memorizing information does not lead to these real-world connections; students transfer knowledge better when their minds are active, they are building understanding, and they are experiencing real-world problem-solving activities (National Research Council, 2000).

When students exit their schools each day, they should be able to connect the concepts and tools used in school to better understand the world around them. When students' lives are well connected to their school learning, the learning becomes more relatable than when the learning activities and tools are disconnected from their home communities. Technology should and can help connect these two worlds of school and community. For example, a classroom teacher who has a learning goal of teaching students how to make a persuasive argument could ask students to research a topic that relates to their lives. Then, using the technology of their choice, the students could create a persuasive public service announcement (PSA) video to highlight their research. A student who enjoys soccer might research why the international soccer federation (FIFA) pays men more than women and argue for equal pay through a PSA video. The student could send the PSA to FIFA and, using the video, crowdsource a social media campaign asking for a response from FIFA. Accordingly, the student would be using accessible tools and engaging in a real-world topic to meet the school learning goals. This type of activity could be more relatable to students than providing them with a list of possible topics to research and mandating a certain technology (such as Google Slides) be used to present their arguments. Thus, the tools help create the bridge between the students' real-world interests (such as the soccer-loving student and FIFA) and the content learning (making a persuasive argument).

Digital Age P21 Skills, Prior Knowledge

An argument educators often make for using technology, especially the latest technology tools, is that by engaging with technology students are able to build new life skills such as collaboration and critical thinking. While building these soft skills can be part of extending learning through technology, it is important to consider which soft skills are recommended by the current workforce, so students can successfully prepare to be part of the future workforce. Drafted by the Partnership for 21st Century Skills (P21), the Framework for 21st Century Learning defines the skills that students are projected to need to be positive contributors to the future workforce, emphasizing a need for competence in areas of life skills (2019).

The areas of literacy skills, according to P21, students should learn are:

- Global awareness
- Financial, business, economic, and entrepreneurial literacy
- Civic literacy
- Health literacy
- Environmental literacy

In the area of life skills, according to P21, students should learn to:

- Think creatively
- Work creatively with others
- Implement innovations
- Reason effectively
- Use systems thinking
- Make judgments and decisions
- Solve problems
- Communicate clearly
- Collaborate with others
- Access and evaluate digital information

- Use and manage digital information
- Analyze media
- Create media products
- Apply technology effectively
- Adapt to change
- Be flexible
- Manage goals and time
- Work independently
- Interact effectively with others
- Work effectively in diverse teams
- Manage projects and produce results (based on goals)
- Guide and lead others
- Be responsible to others

Beyond technology supporting students learning digital age skills, technology can play a role in integrating students' prior knowledge into the learning environment. Because students learn from building on their prior knowledge, technology can support this (National Research Council, 2000). Sometimes students' prior knowledge is based on their technology skills, such as playing video games or making YouTube videos. Other times, it means focusing on an area of interest (such as playing with LEGOs or learning about dinosaurs) and using technology to build on that knowledge (such as talking with an engineer from the LEGO Group about creating LEGO building bricks).

Teaching and Learning Lesson Scenarios

To demonstrate how the three areas of extension (access to tools 24-7, bridging school learning with student lives, and Framework for 21st Century Learning skills) are reflected in a lesson scenario, you'll consider the same six lesson scenarios that we analyzed in Chapters 2 and 3. For each, a table details how the lesson scenario is

scored using the three questions related to extension from the Triple E Framework Evaluation Rubric. You'll also find suggestions on how the lesson could be modified to earn a higher score under extension on the Triple E Framework Evaluation Rubric.

Lesson Scenario 1
Adaptive Literacy Learning

GRADE LEVEL: Kindergarten
CONTENT AREA: English Language Arts
LEARNING GOAL: Identifying letters and phonetic sounds
TOOL: Adaptive literacy software

Scenario

Students in a 1:1 kindergarten classroom are using adaptive literacy learning software on their individual iPads during their center time. The kindergarten students each are expected to use the software for twenty minutes at a center on their own. The software has a drill-and-practice approach, where students answer multiple-choice questions to match letter sounds with the appropriate letter. The students receive limited feedback through the software, such as "try again" if they are wrong and "way to go!" if they get the answer correct. After five incorrect guesses, the software shows students the correct answer. As students answer questions correctly, they level up to more challenging literacy learning levels. Students work completely on their own, while the teacher works with small groups at her desk.

Triple E Rubric Score and Modifications

Table 4.1 details how the lesson scenario currently scores on the Triple E Framework Evaluation Rubric (middle column). The table also includes how to improve the lesson to earn a higher extension score (right column) by using different instructional moves or changing the technology tool. The Triple E Framework Evaluation Rubric extension questions used to evaluate the scenario are listed in the left column.

Table 4.1 Triple E Rubric Evaluation of Lesson Scenario 1

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology create **opportunities for students to learn outside of their typical school day** (24-7 access to tool)?	**SCORE = 0/2** Yes (2), Somewhat (1), **No (0)** The answer is no. The adaptive software may not be easy for students to access in their everyday lives. Sometimes it requires a subscription or licensing fee, for example. Although students can log in to cloud-based adaptive software from home with a password, their parents would need solid internet access.	**NEW SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The new answer is somewhat. The teacher could also consider integrating text messages to parents. The texts could provide information on how parents can support their children by identifying letters and sounds together at home. The students could also participate via their parents' smartphones with activities built into the text message, such as identifying letters in words that the teacher sends and sounding them out with their parent. These activities could be done anywhere, anytime, plus research shows that more high-needs families have access to a phone than to a desktop or laptop computer.
Does the technology create a **bridge between in-school learning and everyday life** experiences, making the learning goal more authentic?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Letter sounds are something that students will use on a daily basis; thus, the learning goal is something that makes sense to their everyday lives. The adaptive software often does not place the letters into real-world situations, however, opting instead for a more artificial setting.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. If the teacher builds in brain breaks as students are using the adaptive software, the teacher could bring in students' own interests by asking them to identify letters and sounds related to them. For example, a child who loves Dora the Explorer could look at a Dora book and find all the Ds. Or students could identify the letters in their classmates' names and connect them to phonetic sounds. Students could do this with a partner and teach each other their names.

Continued

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology allow students to **build skills that they can use in their everyday lives** (P21's Framework for 21st Century Learning soft skills or prior knowledge)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. The software may build on prior knowledge around literacy (such as early knowledge about what individual letters look like), but few of the soft skills identified by P21 are built into drill-and-practice software. Students are asked to work independently to achieve a goal, but otherwise, little creativity, reasoning, flexibility, communication, collaboration, media creation, or similar soft skills are included.	**NEW SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The new answer remains somewhat. Building in brain breaks could bring in opportunities for students to work on their soft skills and prior knowledge with letters and sounds. Students could talk with others, reason effectively about letters and phonics, communicate clearly, and interact effectively with others.
Extension Score	**Current Total Score = 2/6**	**New Total Score = 4/6**

CONCLUSION: Does the teacher need to change the tool, the instructional strategies, or both?

In this scenario, a change of instructional strategies is recommended and possibly the addition of a tool. The adaptive tool probably does not have much extension; it is not a common tool that students would encounter while reading in their everyday lives. The teacher could add instructional strategies, however, to help students make connections between their real world and the literacy in the tool. In addition, the teacher could consider using parent smartphones (a better real-world connection) as the home technology piece, rather than having students use the adaptive software at home. Or a combination of both could be used.

Lesson Scenario 2
Coding Time with Second Graders

GRADE LEVEL: Grade 2

CONTENT AREA: Math

LEARNING GOAL: Telling time on a dial clock

TOOL: Sphero robots (sphero.com)

Scenario

A second-grade classroom is using programmable Sphero robots to learn about telling time. On their iPads, students drag code blocks into a sequence of instructions that tell the Sphero robots how to move on the floor. The students work in groups of four, and each student in the group takes a turn using the iPad with the programming application to instruct two Sphero robots to go to the correct locations on the dial clock drawn on the floor. For example, if a student is asked to find 5 o'clock, the student will use the iPad to drag coding blocks into a sequence to move one Sphero robot, which acts as the clock's small hand, until it gets to *5* on the hand-drawn clock, and then the student will move the second robot, which serves as the clock's large hand, to the *12*. The students are in groups, but they are working individually to program the robots to land on the correct time and are just taking turns with the iPad.

Triple E Rubric Score and Modifications

Table 4.2 details how the lesson scenario currently scores on the Triple E Framework Evaluation Rubric (middle column). The table also includes how to improve the lesson to earn a higher extension score (right column) by using different instructional moves or changing the technology tool. The Triple E Framework Evaluation Rubric extension questions used to evaluate the scenario are listed in the left column.

Table 4.2 Triple E Rubric Evaluation of Lesson Scenario 4

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology create **opportunities for students to learn outside of their typical school day** (24-7 access to tool)?	**SCORE = 0/2** Yes (2), Somewhat (1), **No (0)** The answer is no. Sphero robots are not something that students commonly encounter in their home communities for telling time.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. Instead of Sphero robots, the teacher could use traditional Judy dial clocks. Students will encounter analog clocks that look and feel like the Judy clocks in their everyday lives.
Does the technology **create a bridge between in-school learning and everyday life** experiences, making the learning goal more authentic?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. While telling time is an everyday life skill, the Sphero robot is not helping students connect their in-school learning about telling time with how they tell time in their everyday lives.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. By using Judy clocks, the teacher could bring in more realistic-looking clocks, like those students will encounter in their own lives.
Does the technology allow students to **build skills that they can use in their everyday lives** (P21's Framework for 21st Century Learning soft skills or prior knowledge)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Although the activity does not have much prior student knowledge built into it, it does enable students to practice the P21's soft skills, such as programming (media production), problem-solving, and working independently. However, these skills are not directly connected with the learning goal of telling time.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. The teacher could switch to Judy clocks, then pair up students to collaborate on telling time as they work with the Judy clocks. This would allow them to integrate the skills of reasoning, problem-solving, communicating clearly, and working effectively with others in diverse teams, all of which would be more directly connected to the learning goal.
Extension Score	**Current Total Score = 2/6**	**New Total Score = 6/6**

CONCLUSION: Does the teacher need to change the tool, the instructional strategies, or both?

In this scenario, it is recommended that the teacher change the tool. The Sphero robot may bring about independent working and problem-solving skills, but ultimately, it does not connect the learning goals to students' everyday lives. In fact, the Sphero robot may make time telling more artificial and harder to transfer to the students' everyday experiences of time telling. Instead, the teacher could use traditional Judy clocks or clocks on paper. This would be a more realistic-looking analog clock.

Lesson Scenario 3
Interactive Lecture on Geographical Regions

GRADE LEVEL: Grade 5

CONTENT AREA: Social Studies

LEARNING GOAL: Understanding the different geographical regions of the United States

TOOL: Nearpod (nearpod.com)

Scenario

Fifth-grade students are individually working with a Chromebook using Nearpod, an interactive lecture tool. The students are asked to self-pace through a Nearpod lesson that the teacher found on Nearpod about the geography of the United States. Students are doing the following in their lesson: watching videos on each geographic region, completing multiple-choice questions about each geographical region, and sharing their observations of an image (one per geographical region) via an open response. The whole lesson takes about thirty minutes to complete. As students work, the teacher circulates through the room to make sure the students stay in Nearpod (and don't jump to other internet windows), but the teacher does not sit with any individual students. The students use Nearpod twice a week in class to do interactive lectures like this one. They are very comfortable with the tool.

Triple E Rubric Score and Modifications

Table 4.3 details how the lesson scenario currently scores on the Triple E Framework Evaluation Rubric (middle column). The table also includes how to improve the lesson to earn a higher extension score (right column) by using different instructional moves or changing the technology tool. The Triple E Framework Evaluation Rubric extension questions used to evaluate the scenario are listed in the left column.

Table 4.3 Triple E Rubric Evaluation of Lesson Scenario 3

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology **create opportunities for students to learn outside of their typical school day** (24-7 access to tool)?	**SCORE = 0/2** Yes (2), Somewhat (1), **No (0)** The answer is no. Nearpod is not a tool that is commonly used in students' everyday lives to research or gather information.	**NEW SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The new answer is somewhat. Although Nearpod is not a tool that easily transfers to the real world, the teacher could build in tools to the interactive lecture that would be more common to everyday life, such as Google Earth or Google Maps.
Does the technology create a **bridge between in-school learning and everyday life** experiences, making the learning goal more authentic?	**SCORE = 0/2** Yes (2), Somewhat (1), **No (0)** The answer is no. There is little connection between the geographic images and videos in the Nearpod lecture and the students' lives because the teacher chose to use a stock Nearpod lecture from the Nearpod database.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. To make the lesson more authentic, the teacher could edit the Nearpod slides to add images that the students or their families submit from their community, vacations, or other geographic regions where they may have lived or visited. The teacher could also build in discussions to supplement the Nearpod lesson and ask students to make connections to their own lives.
Does the technology allow students to **build skills that they can use in their everyday lives** (P21's Framework for 21st Century Learning soft skills or prior knowledge)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. The students are working independently, and they are being asked to use and articulate their reasoning in their open-ended answers. Thus, some Framework for 21st Century Learning soft skills are included. However, little prior knowledge is being brought into the activity.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. The teacher could bring in images from students' lives to better connect to their prior knowledge. Furthermore, by blending this activity with discussions, the students could work on communicating clearly, their reasoning skills, and their ability to work effectively with others.
Extension Score	**Current Total Score = 1/6**	**New Total Score = 5/6**

CONCLUSION: Does the teacher need to change the tool, the instructional strategies, or both?

In this scenario, it is recommended that the teacher keep the tool, possibly add a new tool, and change some instructional strategies. For example, the teacher could integrate authentic images from the students, their families, or their community into the Nearpod lesson. In addition, the teacher could build in the use of Google Earth or Google Maps into Nearpod so students could do hands-on exploring with more authentic tools.

Lesson Scenario 4
Researching and Writing Online

GRADE LEVEL: Grade 7

CONTENT AREA: Science and English

LEARNING GOAL: Arguing a controversial topic in science with evidence-based reasoning

TOOLS:

- Google Docs (docs.google.com)
- Google Search (google.com)

Scenario

Seventh graders are learning how to become scientific writers by developing a scientific argument based on factual evidence. The students are each asked to research a controversial science topic (the teacher provides a list of possible topics) and choose a side to argue for, providing evidence from scientists to support their arguments. The students individually use Google Docs to type their arguments, and they use a basic Google search to find scientific articles and experts to draw evidence from. When they complete their arguments, the students email their documents to their teacher. The students are given three fifty-minute class periods to work on their papers. The first day, the teacher models how to do a search on Google and how to paraphrase and properly cite information in their document so they do not plagiarize. The second and third days, the students work on their own at their own pace, with the teacher circulating and periodically sitting down with individual students to check in on their work.

Triple E Rubric Score and Modifications

Table 4.4 details how the lesson scenario currently scores on the Triple E Framework Evaluation Rubric (middle column). The table also includes how to improve the lesson to earn a higher extension score (right column) by using different instructional moves or changing the technology tool. The Triple E Framework Evaluation Rubric extension questions used to evaluate the scenario are listed in the left column.

Table 4.4 Triple E Rubric Evaluation of Lesson Scenario 4

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology **create opportunities for students to learn outside of their typical school day** (24-7 access to tool)?	**SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The answer is yes. Google Docs and Google search are tools that students can transfer to their everyday lives. They are fairly accessible on most devices and often used in the workplace.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer remains yes. The tool choices do relate to the real world and no change or modification is needed, other than possibly using a science-based or vetted search engine for more accurate and reliable results.
Does the technology **create a bridge between in-school learning and everyday life** experiences, making the learning goal more authentic?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Students are given a list of topics, which helps them narrow their choices, but may not relate to each student's everyday life experiences. Also, Google Docs helps the students organize their papers but does not really connect the content learning with their everyday life experiences.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. The teacher could allow students to suggest their own topics or conduct community research to come up with local issues in the science field to argue for or against. In addition, the teacher could ask other experts to provide feedback to the students in the comments of Google Docs; some of the comments could focus on asking students to connect their arguments to their everyday lives and how the science impacts them.
Does the technology allow students to **build skills that they can use in their everyday lives** (P21's Framework for 21st Century Learning soft skills or prior knowledge)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Students are being asked to use some soft skills, such as working independently, reasoning, analyzing media, and producing media to meet a goal.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. This activity already has some Framework for 21st Century Learning skills built into it. The teacher could integrate more prior knowledge and personal connections by asking students to relate the science to their everyday lives. In addition, the teacher could integrate more social learning (such as feedback via Google Docs comments) so students could work on their critical thinking, communication, and interpersonal skills.
Extension Score	**Current Total Score = 4/6**	**New Total Score = 6/6**

CONCLUSION: Does the teacher need to change the tool, the instructional strategies, or both?

In this scenario, it is recommended that the teacher change the instructional strategies. This lesson has a decent amount of extension already built into it. There is already support for some of P21's soft skills, and the students are using tools that connect them to their everyday lives. The teacher could use some instructional moves to take it a step further by helping the students connect the science content to their own lives and consider how it will impact them.

Lesson Scenario 5
Global Warming

GRADE LEVEL: Grade 9

CONTENT AREA: Science

LEARNING GOAL: Identifying examples of global warming on maps of Earth over a fifty-year time period.

TOOLS:

- Google Slides (google.com/slides/about)
- Google Earth (google.com/slides/about)

Scenario

Students in a ninth-grade earth science course are studying global warming by listening to a whole-class lecture from the teacher. The teacher created a slideshow with Google Slides to provide visual images during her lecture, using screenshots from Google Earth's time-lapse tool, which enables you to view images of the same geographic feature over a fifty-year span. During the lecture, the teacher asks the students to look closely at each image on the slides to identify areas that they think are impacted by global warming. The only technology being used in this lesson is the teacher's workstation computer and an LCD projector; the students only have paper and pencil to take notes. The lecture lasts about fifty minutes with periodic pauses for deep discussions around the images that the teacher projects.

Triple E Rubric Score and Modifications

Table 4.5 details how the lesson scenario currently scores on the Triple E Framework Evaluation Rubric (middle column). The table also includes how to improve the lesson

to earn a higher extension score (right column) by using different instructional moves or changing the technology tool. The Triple E Framework Evaluation Rubric extension questions used to evaluate the scenario are listed in the left column.

Table 4.5 Triple E Rubric Evaluation of Lesson Scenario 5

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology **create opportunities for students to learn outside of their typical school day** (24-7 access to tool)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Google Slides is a tool that students have fairly easy access to for organizing and presenting ideas. Yet Google Slides are not necessarily something that students would use to analyze images or gather data about global warming. Fortunately, the students are being exposed to Google Earth images via Google Slides, and Google Earth is a tool they can access relatively easily on multiple devices to study other geographic fields.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. Students could be given the opportunity to use Google Earth in pairs; they could then collaborate to better understand how to use Google Earth to gather information and data on scientific changes over time.
Does the technology **create a bridge between in-school learning and everyday life** experiences, making the learning goal more authentic?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. The teacher is using real images related to global warming from Google Earth, but some of the images may still be far removed from the students' own lives.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. The teacher could ask students to venture into Google Earth and look up their own community using the time-lapse tool. Then students could look for signs of global warming in their own communities; as they walk around their hometown, they may see the same geographic features and places that they saw on Google Earth. The teacher could extend further by asking students to document those places with their own pictures via a student or parent smartphone and share those with the class.

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology allow students to **build skills that they can use in their everyday lives** (P21's Framework for 21st Century Learning soft skills or prior knowledge)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Some elements of the skills of analyzing media and environmental literacy are built into this activity. However, there is little to no prior knowledge related to them.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. The teacher could bring in many more soft skills by allowing the students to work in pairs on Google Earth to do their own critical thinking, analysis, and reasoning. Possibly students could produce media (such as a Google Slides slideshow) to present the images they found of the impact of global warming over time. Finally, the teacher could relate the global warming to the students' own community to facilitate prior knowledge connections.
Extension Score	**Current Total Score = 3/6**	**New Total Score = 6/6**

CONCLUSION: Does the teacher need to change the tool, the instructional strategies, or both?

In this scenario, it is recommended that the teacher change the instructional strategies. This lesson already has some extension built into it. Google Earth can be a useful everyday tool to look at environmental impact. The teacher also could integrate real images into the slideshow. To take it a step further, students could be asked to use Google Earth to do their own image analysis, in particular, an analysis of their own community so it better connects them to the why and how of global warming. Working in pairs in Google Earth would also allow for opportunities to develop more Framework for 21st Century Learning soft skills.

Lesson Scenario 6
Filming a Telenovela

GRADE LEVEL: Grade 12

CONTENT AREA: Spanish/World Languages

LEARNING GOAL: Showing understanding of both written and verbal advanced Spanish language informal conversational skills

TOOLS:

- Google Docs (docs.google.com)
- iMovie (apple.com/imovie)
- Smartphone camera

Scenario

Students in an advanced Spanish language class collaborate in teams of six on a script in Google Docs to write a Spanish telenovela. The teacher asks each team to collaboratively write the script entirely in Spanish, requiring them to use appropriate grammar and language structure. Each team creates a different segment and storyline for the telenovela; all the scripts are on one Google Docs document so the teams can see the other teams' scripts. After each team's script is complete and approved by the teacher, the students take on roles and film the telenovela with student smartphone cameras. Once the filming is done, the students work with their teams to edit the video in the full version of Apple's iMovie on a Mac. The final video is shown to all the Spanish classes.

Triple E Rubric Score and Modifications

Table 4.6 details how the lesson scenario currently scores on the Triple E Framework Evaluation Rubric (middle column). The table also includes how to improve the lesson to earn a higher extension score (right column) by using different instructional moves or changing the technology tool. The Triple E Framework Evaluation Rubric extension questions used to evaluate the scenario are listed in the left column.

Table 4.6 Triple E Rubric Evaluation of Lesson Scenario 6

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology **create opportunities for students to learn outside of their typical school day** (24-7 access to tool)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Student smartphones are an everyday tool that students can easily use to capture video. The full version of iMovie is not as easy to use because it is not cloud-based, compared to the iMovie iOS app. It is also proprietary to Apple devices, so if students have Android or other non-Apple devices, they cannot use it outside of school.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. Students could use a simple, cloud-based video editor such as WeVideo (wevideo.com) so they can edit video anytime and from many different devices.

Extension Element	Current Lesson Score	Potential Lesson Score with Modifications
Does the technology **create a bridge between in-school learning and everyday life** experiences, making the learning goal more authentic?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. Language learning can be difficult to make authentic if the people in the local community do not speak that particular language. Thus, asking students to write and speak in the native language with other classmates is a bit artificial, but it is a reasonable option.	**NEW SCORE = 2/2** **Yes (2)**, Somewhat (1), No (0) The new answer is yes. The teacher could ask native Spanish speakers to weigh in on the scripts via the comments feature in Google Docs or ask local Spanish speakers to visit the classroom and coach the students as they are creating their videos. This would better connect how the Spanish language is used in the students' own community. Additionally, rather than a telenovela, the teacher could consider having the students make a documentary about native Spanish speakers in their community.
Does the technology allow students to **build skills that they can use in their everyday lives** (P21's Framework for 21st Century Learning soft skills or prior knowledge)?	**SCORE = 1/2** Yes (2), **Somewhat (1)**, No (0) The answer is somewhat. There are numerous soft skills built into this activity, including media production, effectively using technology tools, and managing projects.	**NEW SCORE = 2/2** **YES (2)**, Somewhat (1), No (0) The new answer is yes. The teacher could ask students to make a documentary about Spanish speakers in the community; it would allow them to work on even more of the skills the P21 identified, such as global awareness, working creatively with others, and working with diverse people and teams.
Extension Score	**Current Total Score = 3/6**	**New Total Score = 6/6**

CONCLUSION: Does the teacher need to change the tool, the instructional strategies, or both?

In this scenario, it is recommended that the teacher change the tool and the instructional strategies. By replacing iMovie with WeVideo, teams would be able to have a cloud-based tool that they can use anytime, anywhere in their everyday lives. Also, by creating a documentary of local Spanish-speaking community members, students could better connect the Spanish language and culture to their everyday lives.