# A Framework for Evaluating Blended Teaching

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In the first chapter, we explored several scenarios and purposes for blending your students' learning. Regardless of your reasons for blending, it's important to evaluate your teaching and students' learning. Blended learning is the strategic combination of online and in-person instruction. But how will you know if your blended learning strategies are producing the intended results? As you implement your blended learning strategies, it's important that you examine and evaluate their effectiveness and how it has (or hasn't) benefited students' learning. Building on previous research and frameworks such as David Merrill's (2009) e3 and Liz Kolb's (n.d.) TripleE frameworks, we identified four evaluation criteria to determine the effectiveness of your blended learning strategies (see Figure 1). Specifically, our 4Es framework asks if your blended learning strategies:

- ENABLE new types of learning activities.
- ENGAGE students in meaningful interactions with others and the course content.
- ELEVATE the learning activities by including real-world skills that benefit students beyond the classroom.
- EXTEND the time, place, and ways that students can master learning objectives.

Figure 1

The 4 Es
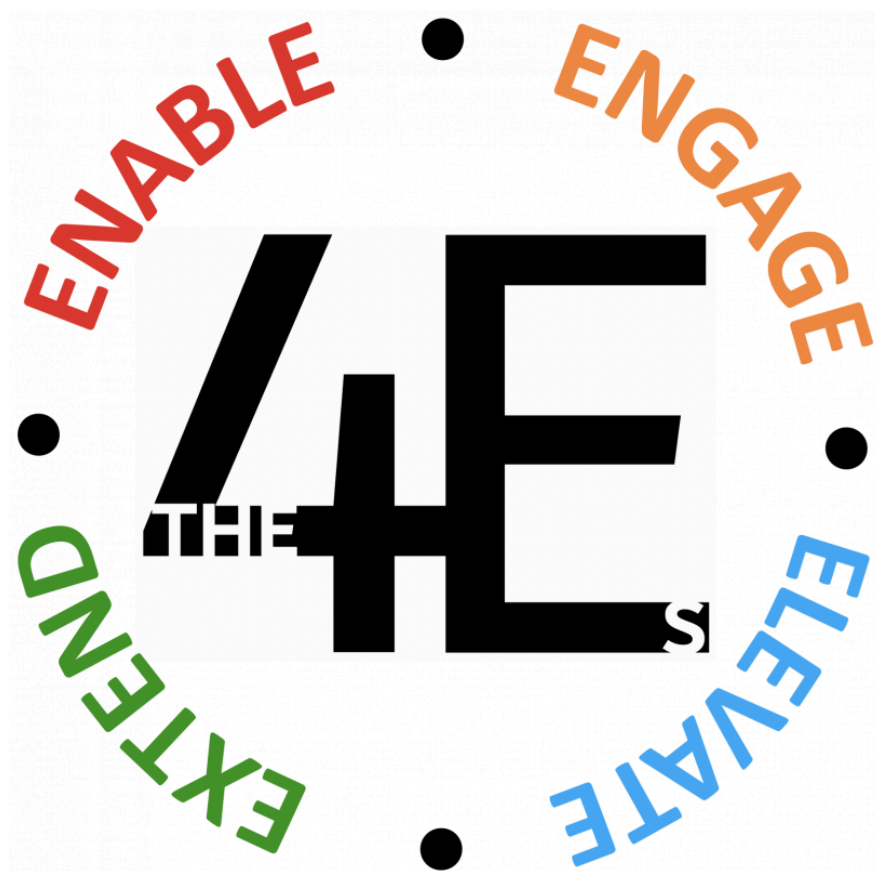
"The 4Es" created by Jered Borup, CC BY SA

🌱 3.1 Enable

> ### Guiding Question
>
> Do your blended learning strategies ENABLE new types of learning activities?

[Kimmons et al. (2020)](#) used the RAT framework to explain that blended learning strategies can use technology in ways that replace, amplify, or transform learning activities (see Figure 2).

Figure 2

The Rat Framework

R EPLACES — Technology sustains current practice without making meaningful changes to the learning activity.

A MPLIFIES — Technology incrementally improves the learning activity in ways that may result in some improvements in learning outcomes.

T RANSFORMS — Technology fundamentally changes the learning activity in ways that may result in significant improvements in learning outcomes.

Education has a long history of using technology to simply replace or digitize learning activities that were previously done without technology. For example:

- handwriting an essay is replaced by typing an essay.
- writing on a chalkboard is replaced by writing on a digital whiteboard. Chalk on a board is replaced by pixels on a screen.
- reading a textbook is replaced by reading an eBook.

These replacements can be a fine use of technology. As long as students have access to the technology, digitizing learning activities can reduce costs following the initial investment to purchase the technology. Additionally, replacing a learning activity using technology can make some learning activities more efficient than they would be without technology. For instance, an essay typed in a word processor can be revised more easily and quickly than a handwritten essay. However, simply replacing an activity will not improve learning outcomes. Best case scenario, students will achieve the same learning outcomes—only more quickly and/or cheaply.

To enable new types of learning that improve learning outcomes, teachers need to use blended learning strategies that move beyond replacing to using strategies that actually amplify or transform learning activities from what could be accomplished without technology.

Amplifying a learning activity requires teachers to introduce technology in ways that enable incremental improvements while the core of the activity remains largely the same. For instance, teachers may find that many of their students have met the target learning outcomes when they are reading students' essays. As a result, the teachers may choose to amplify the essay writing process by having students work in a collaborative document that enables better collaborative opportunities, peer reviews, instructor feedback, and editing. Students can also include multimedia elements to enhance what is written in the essay. Or teachers may use technology in ways that allow students to publish and share their essays in authentic ways. Teachers may also use technology to improve pre-writing activities by engaging students in an online discussion activity to brainstorm and formulate ideas for their essays. What's important to recognize is that the core activity is still the same—writing an essay—but technology enables incremental improvements and enough of these improvements could impact learning outcomes.

Transforming a learning activity is different than amplifying it because the teachers' goal isn't to improve the activity; rather, it's to use blended learning strategies in ways that introduces a new learning activity that they wouldn't be able to do without technology. For instance, rather than making improvements to the essay, teachers may choose to transform

the learning activity by holding a film festival where students write a script, edit a video, and then "premiere" their videos to their classmates and others that are invited to participate.

3.2 Engage

Guiding Question

Do your blended learning strategies ENGAGE students in meaningful interactions with others and the course content?

Engagement is a term with many different meanings. Borup et al.'s (2020) review of research identified three dimensions of engagement:

- Behavioral engagement: the physical behaviors required to complete the learning activity.
- Emotional engagement: the positive emotional energy associated with the learning activity.
- Cognitive engagement: the mental energy that a student exerts toward the completion of the learning activity.

Teachers will often refer to these three dimensions of engagement when they talk about engaging students' hands, hearts, and heads (see Figure 3).

Figure 3

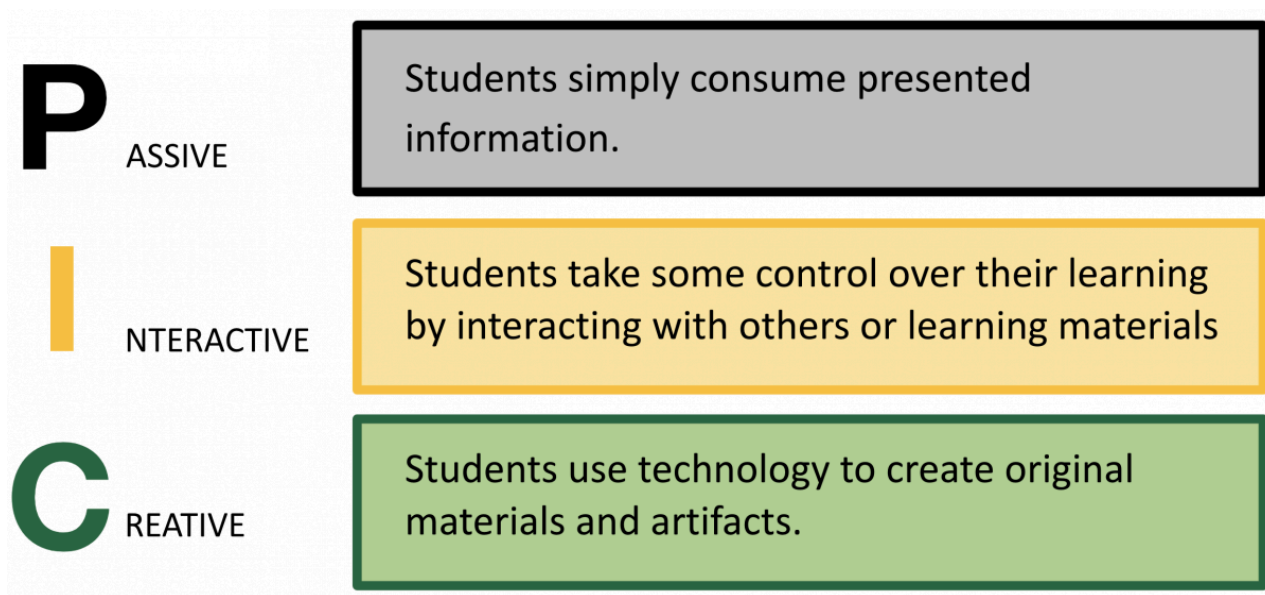*The Three Dimensions of Engagement*

"Engagement" created by Jered Borup using images from Pixabay, CC BY SA

Of the three dimensions of engagement, behavioral engagement is the easiest to observe and categorize. Specifically, Kimmons et al. (2020) used the PIC framework to identify three types of behavioral engagement: passive, interactive, and creative (see Figure 4).

Figure 4

The PIC Framework

PASSIVE — Students simply consume presented information.

INTERACTIVE — Students take some control over their learning by interacting with others or learning materials

CREATIVE — Students use technology to create original materials and artifacts.

Passive learning examples include students watching a video, listening to a podcast, and attending a lecture. In some ways, these passive learning tasks represent the lack of engagement because they don't require or even allow for students to make meaningful choices or contributions.

Interactive activities are dynamic and require students to actively participate. Interactive activities include tasks where students are interacting with online content and tools. Interactive activities can also include opportunities for students to communicate with others such as the teacher, other students, and those outside of the classroom (see Figure 5).

Figure 5

Four Types of Interaction

Four Types of Interaction
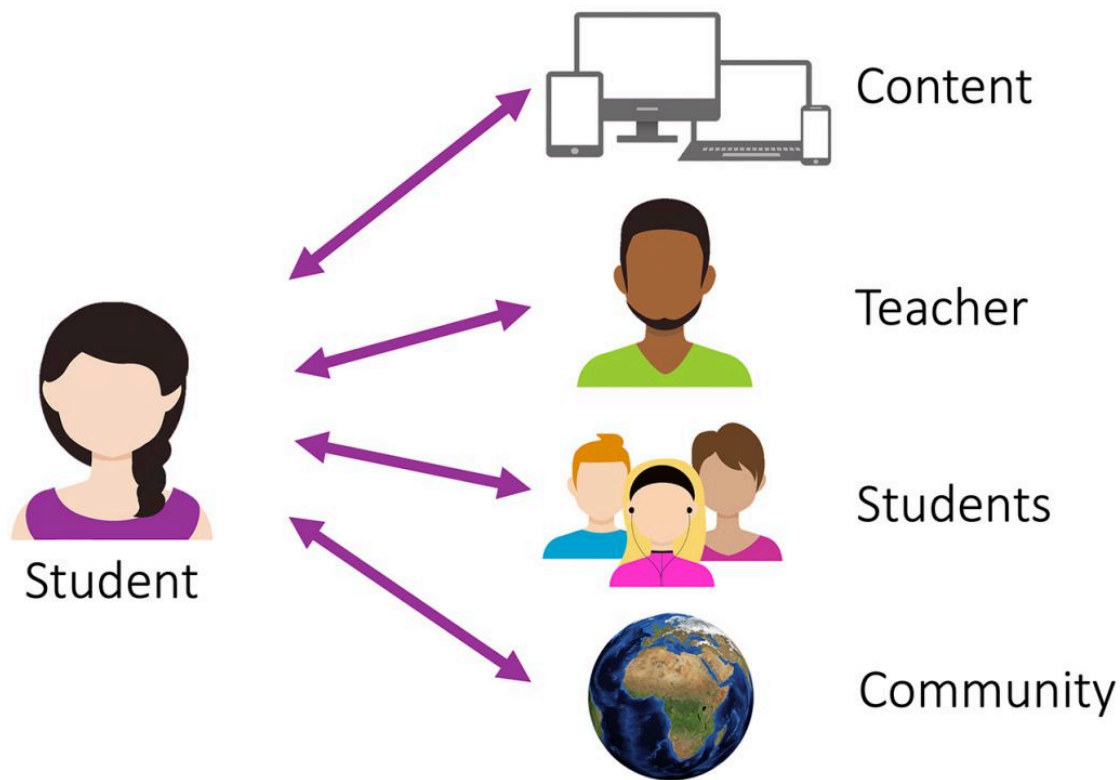
Creative activities go beyond participation to actually creating something original like a blog post, edited video, or digital poster. Table 1 shares some additional examples of online passive, interactive, and creative activities.

Table 1

Examples of Passive, Interactive, and Creative Activities.

Passive	Interactive	Creative
• Watching a video. • Listening to a podcast. • Reading an online article.	• Playing educational games. • Participating in an online discussion. • Asking a virtual guest speaker questions.	• Writing an essay. • Editing a video. • Making an infographic. • Creating a website.

It's important to note that each type of behavioral engagement is important at different stages of the learning process. For instance, students may passively listen to a short lecture or watch a video before interacting with their peers regarding their thoughts about what they learned during the passive activity. Similarly, if students are tasked with creating a video essay, they will likely start with passive activities to develop a background understanding of the topic or to learn how to use the video editing program. Students could then interact with their peers to collaboratively create the video. Instructors can also consider when and where passive learning activities occur. For example, sometimes a flipped classroom trades having a passive video watching experience online to make time and space for an interactive/creative learning experience in-person.

When evaluating your blended teaching, it's important to see the value of passive learning activities while also understanding that these types of activities are limited in terms of deepening students' learning. Passive activities like watching a video or reading an article alone do not require students to demonstrate their comprehension of content or encourage higher levels of cognitive engagement, such as applying, evaluating, or creating. Too much time spent in

passive learning activities will limit your students' engagement so be sure to leave ample time for interactive and creative activities.

The following table provides examples of how technology can be used to replace, amplify, and transform activities that don't originally include digital technology (see Figure 6). As you read the table, notice that passive activities can be amplified or transformed by using technology to make the learning less passive and more interactive. Similarly, teachers can amplify and transform activities that are already interactive by using technology to adjust the time and place of the interactions or by allowing students to move beyond interactive activities to creative activities.

Figure 6

*Examples Showing the Use of Technology to Replace, Amplify, and Transform No-tech Activities*

NO-Tech Activity	REPLACES R	AMPLIFIES A	TRANSFORMS T
CREATIVE ACTIVITY Students color and label a paper map of the continents.	Students label an online map and selecting colors for each continent.	Students use a tool like ThingLink to add videos and images that highlight the different attributes of each continent.	Rather than create a map, students collaboratively create a travel website that highlights the different continents for visiting extraterrestrials.
INTERACTIVE ACTIVTY Students engage in a classroom debate to demonstrate persuasive techniques.	During class time, students engage in a "silent debate" where comments are written on a discussion forum rather than spoken aloud.	Students engage in a debate that combines in-person communication with asynchronous online communication to increase student participation and reflection.	Rather than engage in a class debate, students collaboratively work on a school-wide or community campaign that includes digital campaigning using posters and public service announcements.
PASSIVE ACTIVITY Students listen to an in-person lecture to learn new concepts.	Students watch a video or online lecture.	Students watch a recorded lecture using a tool such as EdPuzzle that requires students to periodically answer multiple-choice questions.	Rather than watch a lecture, students learn concepts using adaptive learning software that automatically adapts what is taught based on student performance.

Kimmons et al. (2020) combined the PIC and RAT frameworks to form the PIC-RAT matrix that allows teachers to to chart how technology is being used in their blended learning strategies (see Figure 7). The matrix is a helpful tool for teachers to consider what the technology is adding to the activity. Ask yourself the following questions:

1. Is the technology being used to increase student engagement by making learning activities more interactive and/or creative?
2. Is the technology being used to simply replace activities or to amplify and transform activities?

Figure 7

The PIC-RAT Matrix
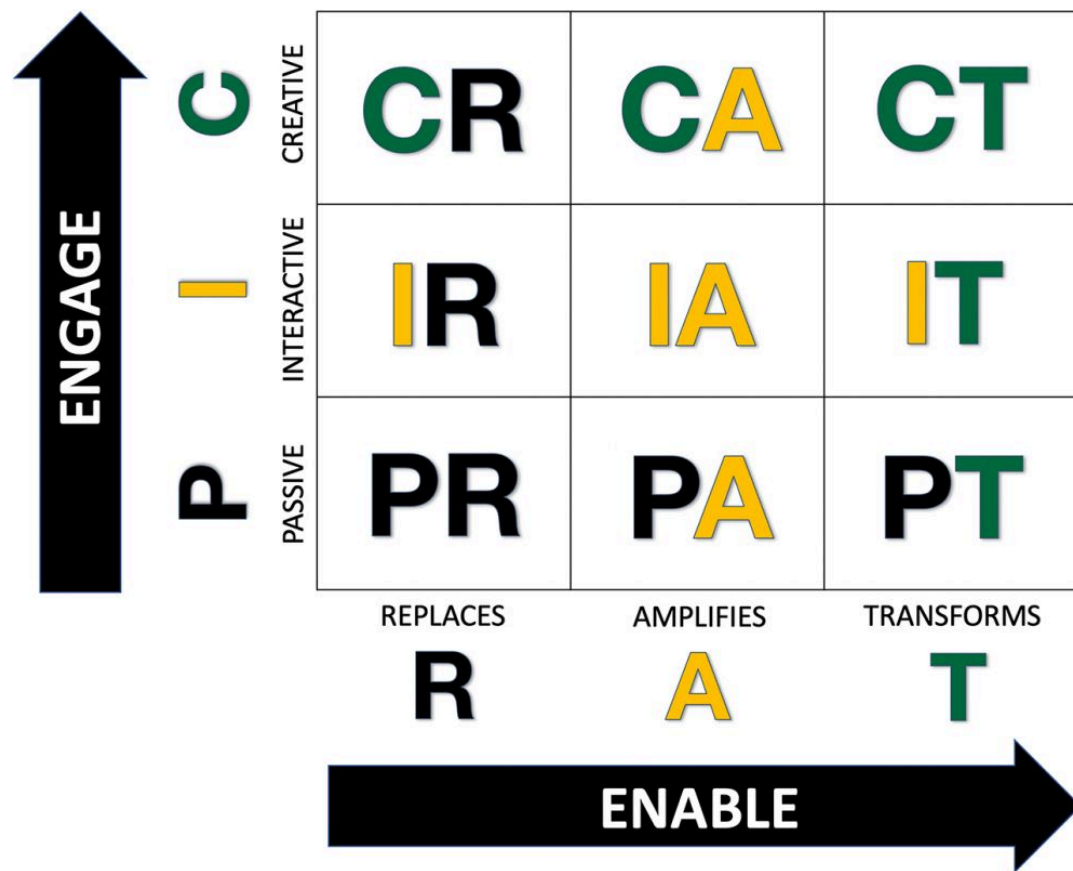
When planning new blended or online activities, we recommend starting by focusing on the learning objective(s), then pulling out a piece of paper or pulling up a word processing document and filling out the PIC-RAT matrix (see Figure 8) with various ways that technology could be used to teach the learning objective(s).

Figure 8

Blank PIC-RAT Framework for Brainstorming Activities Using Technology

C CREATIVE
I INTERACTIVE
P PASSIVE

	REPLACES	AMPLIFIES	TRANSFORMS

R **A** **T**
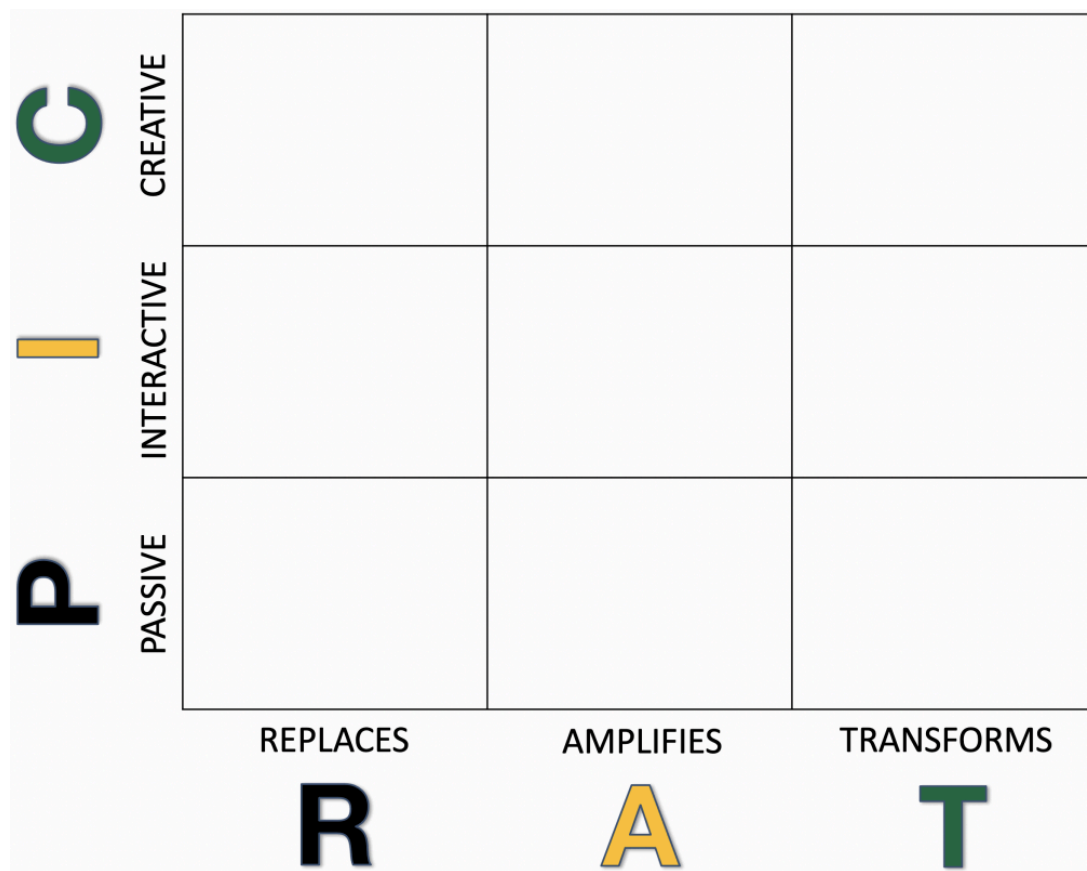
Moving up and across the matrix will likely improve the learning activity, but it's also important to note that the PIC-RAT matrix doesn't actually measure the quality of the learning activity. It's possible for teachers to transform a learning activity by having students create something that wouldn't be possible without technology and still not actually improve students' learning or experience. In fact, it is possible to transform students' learning for the worse. For instance, using the example shared above, a teacher may transform an essay writing activity so that students create an edited video instead. While this transformation may be positive for many students, there could be some students who detest making an edited video and refuse to participate. Similarly, a teacher may transform a passive learning activity into a creative learning activity that isn't as aligned to the learning outcomes. As a result, when amplifying or transforming a learning activity to increase students' behavioral engagement it's important to consider the other two dimensions of engagement—emotional engagement and cognitive engagement. Students will perceive the activity as "busy work" if teachers only engage their hands but fail to also engage their hearts and minds (see Figure 9).
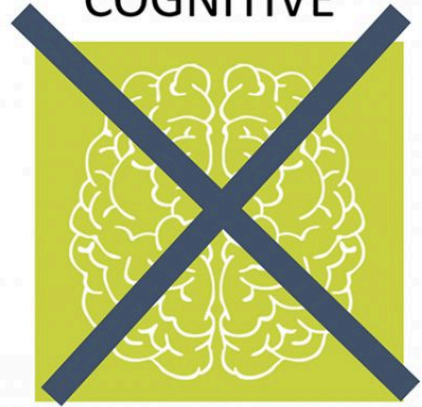
Figure 9

Busy Work

Busy Work

BEHAVIORAL

EMOTIONAL

COGNITIVE

As you go through these chapters, you have the opportunity to reflect on what you have learned and to design your own activities in the Blended Teaching Workbook. Click on the link to access your workbook. Make sure you save a copy and keep it available, so you can return to it as you go through the chapters.

✎ **Blended Teaching Workbook**

In your workbook is a copy of the PIC-RAT grid. Use it to brainstorm activities you could use in your classroom. You can access the workbook here.

🌿 3.3 Elevate

Guiding Question

Do your blended learning strategies ELEVATE the learning activities to include real-world skills that benefit students beyond the classroom?

In addition to creating learning activities aligned with the course learning objectives, teachers' blended learning strategies can elevate students' learning to also include real-world skills that benefit students beyond the classroom. For example, the Partnership for 21st Century Learning stresses the need for students to develop the 4Cs—communication, collaboration, critical thinking, and creativity skills (https://www.battelleforkids.org/networks/p21). While widely-referenced and important, the 4Cs also take a somewhat narrow view of the skills that students need to succeed beyond the classroom. For Ontario's education agenda, Michael Fullan (2013) expanded on the 4Cs to include character education and citizenship. Social-emotional learning is also critical for human development. These skills are best developed in a social learning environment. Clearly, students can't develop communication, collaboration, and citizenship skills in isolation. Even critical thinking and creativity skills are best developed when working with others. This provides more support for balancing passive activities with interactive and creative activities while urging teachers to elevate their instruction.

Learning activities are also best elevated when activities are situated in authentic tasks and projects. There are three levels of authenticity when you are considering the problems and stakeholders that students will be working on and with (see Figure 10).

- Unrealistic: These scenarios and problems can be out of this world—literally! Stakeholders and problems can be science fiction and include anything from time traveling to establishing a colony on Mars. They are intended to make the unit more exciting and emotionally engaging while still requiring students to demonstrate important knowledge and real-world skills.
- Realistic: These are scenarios and problems that feel like they are real but aren't. Real people can even serve as stakeholders but they are really just acting. For example, students might simulate creating a new business by coming up with a new product and working in groups to come up with the name of the product, a business plan, and a marketing plan. It is completely realistic, but they won't be really starting a new business!
- Real: This is the gold standard because you have real people who are really interested in and will benefit from students' work. These stakeholders can be of any age and in and out of the school. For example, students could work in groups to discuss some problems in their community, such as littering in their local park or school grounds. They might create memes, GIFs, and short video public service announcements to urge people to keep the park and playground clean that they can post on social media and distribute through local government social media.

Figure 10

Levels of Authenticity
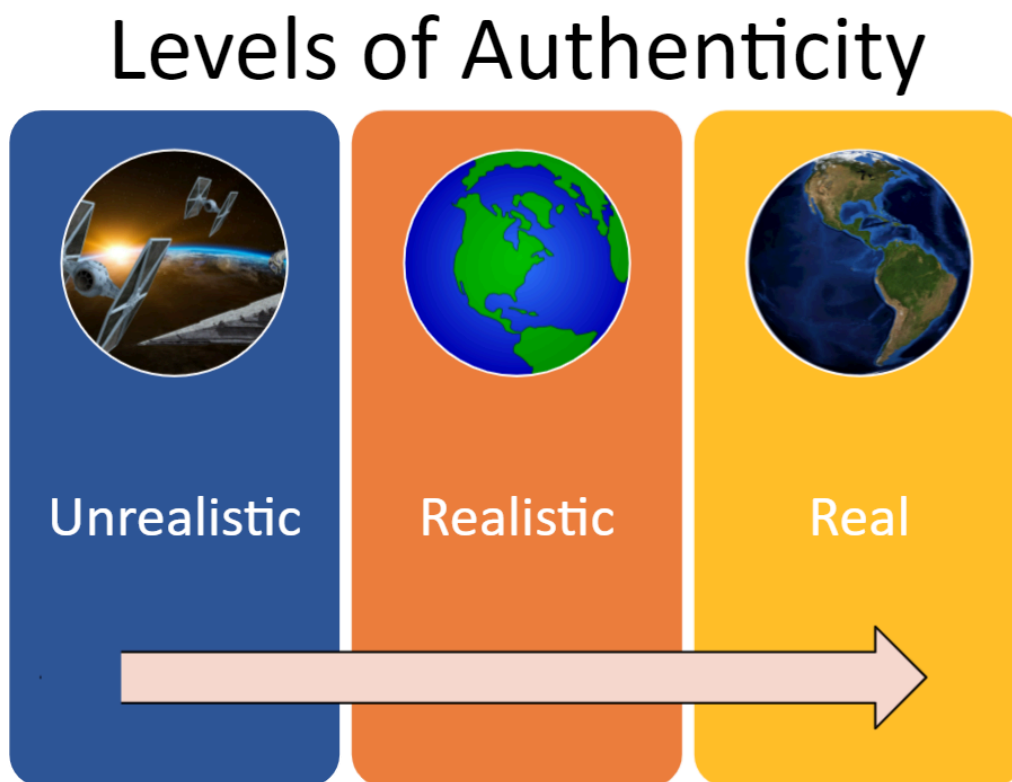
"Levels of Authenticity" created by Jered Borup using images from Pixabay, CC BY SA

Authentic assessments are often renewable rather than disposable. Consider the target audience of most assessments —who it is that students are completing assessments for—themselves, their community, their teacher? Often assessments are completed for an audience of one, the teacher. The teacher then evaluates the assessment, provides

the student with some feedback, returns the assessment to the student, and hopes that the student uses the feedback to enrich their learning before the assessment is discarded in the trash can (or on the floor, or left on a desk) when class ends. These assessments are often seen as "disposable assessments." They are meant to be used and then discarded without retaining any real-world value.

"A 'renewable assessment' differs in that the student's work won't be discarded at the end of the process, but will instead add value to the world in some way." ([David Wiley, 2016](#))

A movement toward assessments that can exist in a world that is larger than the four walls of a singular classroom can make learning more authentic and elevate what students learn and do beyond content-based curriculum and contexts. For example, a community college instructor found that having her students write an openly licensed textbook that would be shared with other students instead of traditional essays caused them to "write better than they've shown me in the past" ([Short et al., 2024](#)). Students want to know that their work matters and is destined for more than the nearest trashcan.

Table 2 gives some examples of renewable and disposable assessments.

Table 2

Renewable and Disposable Assessments

Renewable Assessments
• Students create a documentary about the life of a war veteran in their community.
• Students create tutorial videos to help teach math concepts to peers.
• Students create artwork to beautify the walls of city buildings.
• Students create a picture dictionary to share with younger students.

Disposable Assessments
• Multiple choice exam
• Short essay quiz
• 5-page paper to check understanding or ability
• Spelling test

Additional Resources
• [Renewable assignments: Student work adding value to the world](#)
• [Non-disposable Assignments in Intro to Philosophy](#)
• [From Consumer to Creator: Students as Producers of Content](#)
• [Are your assignments renewable or disposable?](#)
• [What is Open Pedagogy -> Killing the disposable assessment](#)

🌿 3.4 Extend

Guiding Question

Do your blended learning strategies EXTEND the time, place, and ways that students can master learning objectives?

Another way that blended learning strategies can improve learning activities is by extending the time, location, and ways that students complete learning activities. Attempting to extend students' learning time and location is nothing new. For instance, students have long had flexibility in the time and location that they completed homework. However, too often students are tasked with completing homework without adequate support resulting in frustration for both students and parents, as hilariously shown in the following video clip.

[Watch on YouTube](#)

Using technology teachers can not only provide students with more sensory-rich learning materials, within a learning management system (LMS) they can also provide them with digital scaffolding and direction to successfully complete learning activities using those materials. For instance, it's relatively easy for teachers to create short instructional videos that can help students to learn new concepts or complete learning tasks. [One teacher (Farah, 2019),](#) explained that creating instructional videos allowed him to "clone" himself so students could receive his help in the moment they needed it, not when he was presently available to help them. Once teachers feel comfortable making quick videos, they can use them to provide targeted scaffolding anytime students find something confusing or difficult. This allows the teacher to tailor instruction to specific students or classes.

This use of technology can also provide students with the flexibility in the pace of their learning and allows teachers to implement mastery-based grading. For instance, when learning activities are clearly organized in an LMS, students can complete and submit assignments that the teacher can then review and provide feedback on until students achieve

mastery. Providing quality feedback efficiently is especially important in a mastery-based grading system. Although detailed feedback is always time-consuming, technology can help lighten the load as we will see in the following chapters of this book.

Teachers can also extend the ways in which students complete learning activities. For example, teachers may provide students with multiple learning paths to choose from using a choice board. A choice board is a graphic organizer, usually in a grid of 4, 6, or even 9 spaces, with activities that students can choose to do. Often teachers design them to appeal to their learners' interests, talents, and abilities. Creating multiple activities that all lead toward mastery of your learning objectives allows students choice in their learning path—hopefully with choices that will motivate them and inspire them to do their best work. Once learning has been extended, teachers can also provide students with opportunities to form their own learning path and/or set learning goals.

3.5 Conclusion

Combining in-person and online instruction doesn't mean that the blended learning will be high-quality—or even good. As you begin to blend your students' learning, you will likely find that some lessons or even entire instructional units don't go as well as expected. The opposite will also be true and you will find that other blended lessons and units go incredibly well. As blended teachers it's important to carefully evaluate what works and what needs to be improved or even replaced. The 4Es framework can help you recognize quality blended teaching and learning. Specifically, as you plan new blended instructional units or evaluate previous blended instruction, ask if your instructional unit would or did:

- ENABLE new types of learning activities.
- ENGAGE students in meaningful interactions with others and the course content.
- ELEVATE the learning activities by including real-world skills that benefit students beyond the classroom.
- EXTEND the time, place, and ways that students can master learning objectives.

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