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For Teachers:

A Research-Backed Checklist for Selecting High-Quality Immersive Experiences

Immersive learning experiences can be engaging for students, but many do not deliver real learning value. Our research report *From Engagement to Impact* outlines an evidence-based approach to identifying what makes a high-quality immersive learning experience.

This guide for teachers is designed as a practical checklist to support the selection and implementation of extended reality (XR) experiences, whether they are introducing XR into their pedagogy for the first time or simply looking to strengthen their existing immersive learning practices.

The role of immersive learning in classrooms

Immersive learning (i.e., learning experiences accessed via Virtual Reality, Augmented Reality, and other modalities) offers notable benefits in the classroom. While it is most commonly celebrated for its ability to engage students, our research found that high quality experiences go further, facilitating authenticity and producing measurable learning gains.

When experiences are purposefully designed and rooted in learning science principles, those benefits are even more pronounced. However, there is currently limited guidance for teachers on what to prioritize when selecting quality immersive learning experiences. Drawing on research conducted with 500+ educators across ages, stages, and subject areas, this checklist offers a practical starting point for defining and identifying quality:

Identify your purpose(s) for using XR in the classroom as it relates to your learning goals

It's essential that you are clear on the purpose(s) for including immersive learning experiences in your pedagogy. Our research demonstrates that ***quality*** experiences go beyond the initial novelty factor or "using technology for technology's sake."

From a learning science approach, immersive technology can serve one (or more) of the following purposes:

1. **Introduction of new concepts**
2. **Application and practice**
3. **Complement core instruction**
4. **Supplement or extend learning**
5. **Experience-based exploration and simulation**
6. **Assessment**

Identifying what you are hoping to achieve is the first step toward ensuring that you find and use the right experience(s).

Determine what XR achieves that other pedagogy does not

Next, consider what the XR experience achieves that traditional pedagogies do not (e.g., traditional instruction, other hands-on projects, or 2D approaches). The teachers in our research emphasized that quality immersive learning is intentional and avoids using technology for technology's sake. Immersive experts refer to the D.I.C.E. framework, encouraging users to determine the appropriateness for XR based on whether the experience is: **D**angerous, **I**mpossible, **C**ounterproductive, or **E**xpensive/rare.

Visiting Mars is impossible. Novice students practicing welding for the first time on real materials can be dangerous and counterproductive, as they will likely make costly mistakes. A personalized chemistry lab for thousands of virtual/online learning students is expensive. These are examples where XR provides holistic value above and beyond other methods of instruction, whereas activities like answering multiple choice questions, manipulating a physical model, or reading can be done effectively without technology.

Consider which pedagogical elements you want the experience to be responsible for and which you, as the teacher, want to be responsible for

As we spoke with different teachers experienced with immersive learning, one thing became clear: teachers did not want immersive experiences to do their jobs for them. And we know that technology cannot and will not replace teachers. Rather, teachers determine how and when to integrate technology that will complement their teaching.

This is true for immersive technology, and we've reflected this in the Criteria for Immersive Learning Quality (CILQ), a tool we developed from our research used for evaluating critical components of quality immersive learning. Components include key learning elements like learning objectives, scaffolding, and cognitive engagement. The CILQ evaluates each learning component on a scale from "minimally evident" to "highly evident." When a component is minimally evident, significant teacher facilitation is required for learners to benefit from this component of the experience (e.g., scaffolding). Whereas a component that is highly evident in the experience itself would require little to no teacher facilitation.

Teachers should consider what level of control or facilitation they'd like for each component of their experience and select an immersive experience accordingly. This will vary by teacher, lesson, and experience.

Know the accessibility needs of your class

Finally, as you're ready to start searching for experiences, consider your students' needs prior to launching an experience. Every learning experience, but particularly immersive learning experiences, should provide modifications for accessibility while also ensuring a safe learning environment for the student users. Consider:

- **Is there captioning provided?**
- **Are there controls that allow the learner to adjust the audio, brightness, and pacing?**
- **If the experience is VR, is it available in a desktop or tablet version for students who cannot tolerate headsets for simulator/motion sickness or other reasons?**
- **Are the language, terminology, and explanations appropriate for the intended learner audience?**
- **Does the experience support safe and respectful dialogue?**
- **Does the experience recommend or enforce appropriate time limits to avoid eye strain or physical discomfort?**

Using this checklist as you look for experiences will help increase your confidence that the time, energy, and thought you put into your lesson delivers real learning value.

Access our report *From Engagement to Impact* and learn more about the CILQ at pearson.com/efficacy.learning-evidence.html