

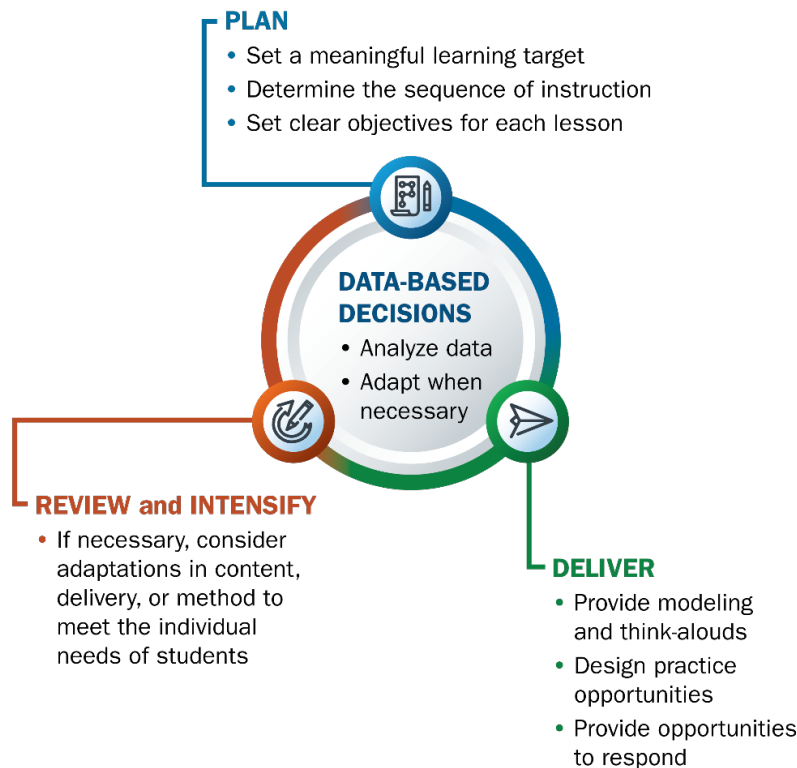
# Instructional Technology

## What Do Teachers Need to Know About Instructional Technology?

The practice of using instructional technology involves intentional planning to provide students access and opportunities to engage with technology tools such as personal computers, smartboards, tablets, and digital programs (PowerPoint, Unique Learning System) as a tool of learning for content delivery. Using instructional technology as a practice embeds the technology tools within the curriculum to improve learning outcomes for students.

*Instructional technology is a pedagogically enhanced learning experience in which higher tech devices are used as a component of the lesson.*

In the three-phase cycle for instruction, teachers use instructional technology across phases. Instructional technology involves planning for individualized instruction of content with delivery that incorporates a variety of audio, visual, and digital materials, followed by reviewing assessment data and intensification of instructional technology if needed.



Assistive technology and instructional technology often are bundled together; however, there is a distinct difference between the two. Assistive technology’s main objective is to provide access to

curriculum and overcome barriers in the learning environment. Instructional technology is a broader term that describes the technological tools used during instruction.

## Instructional Technology for Students With Disabilities

Instructional technology fosters student-focused instruction as well as improved learning outcomes for students with disabilities (Fernández-López et al., 2012; Hasselbring & Williams Glaser, 2000). In addition, both students and teachers have reported increased interest in teaching and learning when instructional technology is incorporated (Lowther et al., 2003; Penuel, 2006).

When planning to use technology during instruction, teachers must focus on the learning needs of students because some technology (e.g., digital books with sounds effects) may enhance learning outcomes whereas others with more interactive opportunities (e.g., books with pop-up questions) may prove to be distracting to students (Takacs et al., 2015). For students with disabilities, technology may be used within the general education environment or to make progress toward individualized education program goals. For example, video modeling is a research-based method for teaching students with challenging behaviors, replacement behaviors, and social skills (Mason et al., 2013). Video modeling also has been used to teach students with autism about word problems in mathematics (Cox et al., 2021). As another example, virtual manipulatives have helped students learn mathematical concepts (Bouck et al., 2019).

Overall, research has demonstrated instructional technology's use for improving outcomes in literacy, mathematics, and social behaviors, as well as for students across disability categories, settings, and ages (Baxter et al., 2005; Fernández-López et al., 2013; MacArthur et al., 2001).

To use instructional technology within instruction, teachers should take the following steps:

- Plan using clear, measurable objectives that incorporate the use of technology for the learning outcomes.
- Evaluate instructional technology for its appropriateness (Lubniewski et al., 2018).
- During delivery, use formative assessment to monitor student progress, specific to the learning outcomes as well as student technology use.
- Review the formative or summative data collected during instruction to make data-based decisions specific to content delivered through instructional technology.
- Intensify and individualize instruction based on student needs, if warranted.

## Access to the General Education Classroom

Instead of retroactively modifying lessons to incorporate technology to provide access, technology can be used as a method of learning at the outset in the planning phase (Rose et al., 2005). Teachers who



use instructional technology within the general education environment must collaborate with special education teachers to gain an understanding of an individual student's current level of performance with specific technology tools. When possible, teachers should teach students to use the new technologies by modeling the technologies prior to their use to access curricular content so that students are not learning both the technology and the content simultaneously.

## How to Get Started

- Using technology successfully requires confidence in your skill with each tool, so, if possible, access professional learning on the technology. Research has shown that teachers who have positive attitudes and higher levels of confidence in their use of technology often improve learning outcomes for students (Gonzales et al., 2002; Watson, 2006).
- Start small; set an obtainable goal for using one new technology tool or application. Share your goal with a colleague and hold yourself accountable!
- Although technology is frequently used as part of daily instruction, consider each individual student's proficiency with the use of each tool. You may need to preteach the use of the technology tool before content may be delivered through its use.

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