Heather Dorrell

Courseware Tools 7010: Summer 2024

6/29/2024

**Technology Integration Strategy**

There are several factors when considering integrating technology into a learning environment. The first factor to consider is whether the instructional problem will be solved with training. An instructional designer can use a needs analysis, which may consist of a performance analysis, a root cause analysis, or a task analysis. Other considerations before beginning this process include Kirkpatrick’s Four Levels of Evaluation and Phillips ROI Model (Citation).

Once it is determined that the problem can be solved through instruction, an instructional designer can consider learner characteristics. However, a teacher or trainer may want to review the goals, objectives, or standards to define goals and objectives for a particular unit, module, or lesson before considering learner characteristics. This can be done through a task analysis or by referring to a predetermined set of expectations. The instructor needs to determine whether the goals are aligned with curriculum standards or an instructional problem. If they are, they can proceed to looking at learner characteristics. If not, the instructor may need to redefine the goals or reassess whether this is an instructional problem.

When looking at learner characteristics, an instructor needs to find out general characteristics, entry characteristics, learning preferences, academic information, personal and social characteristics considerations for cultural diversity, age, leaners with special learning needs, and accessibility needs of the instructional cohort and the individuals within it (Citation). Most cohorts are going to have individuals who have specific needs, and in that case, Universal Design for Learning Principles can be applied to design the instructional strategies to include generative learning strategies.

Once the needs of the learners and the goals or objectives of the instruction are considered, an instructor can look at whether the integration of technology is going to support the effectiveness and efficiency of instruction. When considering integrating new technology, a few models and frameworks can help instructors make more informed decisions.

First, instructors can look at TPACK, or TPACK. During this evaluation, teachers will ask whether the current technology in place is meeting the needs of the students. If it is, there may be no need to change anything. If the status quo is lackluster, the instructor can ask if the technology will enhance instruction delivery, engagement, or motivation. If not, it may not be worth changing or other options may need to be considered. If it does, the next question is whether the technology will support pedagogy.

Next, the SAMR Model, which stands for XYZ, can be considered when looking at the goal of incorporating a new technology. An instructor needs to ask what changes will happen when the new technology is implemented. Will it be substituting existing technology? Will it improve the effectiveness or efficiency of the learning? Will it significantly change the learning tasks or create new tasks that were not previously possible? Depending on the goal of incorporating the new technology, the instructor must consider whether the new technology accomplishes the intended level of effectiveness and efficiency. At each level, the instructor must test whether the introduction of the technology is worth the return on the investment, along with whether it is improving learning.

Since the characteristics of the learners have been determined in an earlier step, the Universal Design for Learning Framework can be applied to determine whether the technology offers varied ways of engaging learners, presenting material, and demonstrating learning. Many technologies offer enhancements or the ability to customize the tool based on learner needs. If the new tool does not provide these options or is not determined effective, another tool may need to be considered.

Once the instructor has looked at learner characteristics in relation to the goals and objectives of the instructional content and applied these learning frameworks and research-based strategies to the content sequencing and instructional strategies, the best technology for the desired outcome can be chosen and implemented. Once this occurs, it is important to implement and monitor the technology. Instructors need to question whether the implementation was successful. Are the learning goals being met effectively or with more effectiveness and efficiency than before the implementation? Are there areas of improvement or revisions that need to take place?

Below is a visual map demonstrating the initial steps when deciding to implement a new technology in the instructional process. A more complete map can be viewed at [Mindmeister](https://mm.tt/app/map/3341450559?t=iwafmRp7XE).

A diagram of a diagram

Description automatically generated with medium confidence