GREG SCHWANBECK'S FACTORS TO CONSIDER WHEN SELECTING EDUCATIONAL TECHNOLOGIES

Note: These factors are all interrelated and interdependent. The hierarchy of the factors depends on the context of use.

INSTRUCTIONAL FACTORS

Quality of Learning - *Does the technology facilitate a rich, deep understanding of the content? How does the quality of learning compare to the quality provided by current practices?* Look for technologies that give students a hands-on/interactive experience that isn't possible to provide via current practices.

Efficiency of Learning - *Does the technology help the typical student learn the content in less time than a curriculum without technology would allow?* Some technologies, through animation, user manipulation, or some other nuance, can allow students to master and retain a concept much more quickly than current practices.

Collateral Skill Development - *Does the technology develop any student skills outside of what it intends? Does use of the technology displace a teaching technique that fosters any additional skills?* Every instructional technique teaches *some* additional skills beyond the intended standard—small group work develops teamwork/collaboration skills, science lab reports foster writing skills, and so on. Consider what collateral skills are involved with a technology when evaluating it—will students practice or pick of some math, reading, or research skills?

Creation of Opportunity - *Does the technology create opportunities or broaden horizons? Does the technology enable a student to experience something unique? Does it make possible what had been impossible?* Some technologies can bridge distance and time, allowing students to take (virtual) field trips or interact with guest speakers that wouldn't be feasible otherwise. Other technologies can, through animation or other nuance, make invisible concepts visible or dangerous demonstrations classroom-safe. Such technologies can bring more of the world to an educator's classroom.

LOGISTICAL FACTORS

Usability - *How easy is the technology to use? How user friendly is the interface? How long would it take a typical student in the target audience to learn how to use /navigate the technology?* For students, mastering a challenging subject is difficult enough without having to learn to operate a new learning technology as well. Thoughtfully designed technology should have an intuitive user interface and allow students to become proficient in as short a time as possible.

Cost - *How much does the technology cost, per student? How will this cost be covered?* Free, freemium, and paid all have their strengths and weaknesses. Educators ought to consider both the cost of their efforts to secure funding (i.e. securing a purchase order, writing a grant, etc.) and the expenses associated with current practices that may become no longer necessary (i.e. cost of traditional calculators vs. cost of a web-based calculator app.)

Access - *Do all students have reasonable access to the technology in class? At home? Does the technology require registered student accounts? Is the technology (or the school network) slow with multiple users logged in? How reliable is the technology—is their frequent downtime? Is the technology versatile—does it work on multiple platforms (Mac, PC, Chromebook, Android, etc.) or is it limited to just one?* Access issues can take away from time on learning as a class or hinder the learning of individual students.

Special Needs Accessibility - *Is the technology suitable for special needs students or students on individual education plans?* If not, educators must consider what alternative technologies/ accommodations they must provide to fairly serve these students.

Assessment - *Does the technology help instructors easily and effectively evaluate student work? Does the technology itself provide feedback to the students? Does the technology provide tools for bulk data collection and analysis?* When educators are able to provide timely and meaningful feedback more efficiently, or are able to spot student trends that would otherwise be missed, students are better served.

Flexibility - *Can the technology be easily adapted in multiple, diverse classrooms or used for a variety of purposes? Or is the technology specific to a particular content area, concept, or target audience?* If students will find a particular technology to be useful throughout the school year or across different subjects, or, better yet, beyond school, then educators can more easily justify the costs and startup efforts associated with that technology.