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INTRODUCTION

As blended learning environments proliferate in terms of new, interactive technologies and K-12 learner access to innovative blended and online settings has increased globally, attention to learner assessment is a critical component of the evaluation and sustainability of these courses. This chapter discusses a variety of types of learner assessments and describes contemporary trends, challenges, and recommendations for the effective assessment of learning in blended and online courses that serve k-12 students. Much of the foundation for this chapter originates in the literature and research on distance education settings within higher education, but the recommendations target teachers, administrators, course designers, and web developers who are committed to improving the outcomes of K-12 students taking blended or online courses.

BACKGROUND

The evolution of distance learning to include K-12 students has included an expansion of the vocabulary used to describe these learning environments. Virtual schools, cyber schools, and online schools are all terms found in the literature associated with access to educational services offered via computer-mediated, web-based alternatives. These terms are typically used to identify learning environments that are fully delivered through synchronous and/or asynchronous web-based systems. Many contemporary, K-12 distance learning environments are described as *blended*. Staker and Horn (2014) make their case for using blended learning environments as the foundation strategy to improve schools. Whether schools and teachers are looking to flip the classroom, offer flexible course options, supplement study with extended offerings online from other schools, or enhance traditional classroom instruction, blended learning is found in both rural and urban school settings. Murphy, Snow, Mislevy, Gallagher, Krumm, and Wei (2014) describe blended learning as an emerging field with many different conceptualizations. For the purposes of this chapter, the authors will use the Staker and Horn (2012) component definition of blended learning.

- **Blended Learning:**
  - Teaching and learning occur within a formal education program.
  - Students learn at least in part through online delivery of content and instruction.
  - Students learn at least in part through instruction that is delivered away from their home in a face-to-face setting with a teacher present.
  - Students have some level of control over time, place, path, and/or pace of the instruction.

LEARNER ASSESSMENT

The assessment of student learning in traditional settings has challenged even the most experienced, master teachers. Ambrose, Bridges, DiPietro, Lovett, and Norman (2010) provide a reminder that when the objectives, assessments, and instructional strategies of a course are aligned, students build positive expectancies for their learning and their success. Figure 1 is a cartoon graphic and quote that has been widely shared in social media to illustrate the importance of valid learner assessments that are aligned with instructional goals and targeted learner outcomes.

Figure 1. Challenges of measuring student learning
Source: PBS (https://pbs.twimg.com/media/BZ_qJp4IEAEDYip.jpg:large)

"With online instruction comes a change in the nature of teaching, communicating with and assessing students" (pp. 38-39) according to DeNisco (2013). However, DeNisco goes on to emphasize pedagogical strategies for online teachers with no further mention of assessment strategies except that they are different. Measuring student learning in blended or online learning settings brings new considerations for the teacher and/or designer to ensure that students have well-defined learner activities or performance descriptions which include detailed feedback and grading criteria to support learner success (Vega, n.d.). Ferdig, Cavanaugh, Dipietro, Black, and Dawson (2009) noted that the teacher, instructional designer, site coordinator, administrator, mentor, and counselor all share in the virtual school assessment responsibility. In this chapter, the authors argue that the alignment proposed by Ambrose et al. (2010) is critical for student success in blended or online settings so the student does not feel like a fish trying to climb a tree! These authors additionally argue that just as pedagogies must be adapted for online and blended settings, so must the assessment strategies.

Synchronous and asynchronous communication channels in online settings provide teachers and course designers multiple options for increasing student-student and student-teacher interactions, increasing and improving learner feedback, and engaging students in meaningful, authentic assessment of their learning. It is also worth noting that both synchronous and asynchronous web-based tools continue to evolve in terms of learner access and user transparency. Table 1 provides examples of synchronous communication tools found in contemporary online settings.

Table 1. Examples of synchronous communication tools (Ashley, 2003)

Tool	Useful for	Drawbacks
Audio conferencing	Discussions and dialogue	Cost, especially when international participation is involved
Web conferencing	Sharing presentations and information	Cost, bandwidth; may also require audio conferencing to be useful
Video conferencing	In-depth discussions with higher-touch interactions	Cost, limited availability of video conferencing systems
Chat	Information sharing of low-complexity issues	Usually requires typing, "lower touch" experience
Instant messaging	Ad hoc quick communications	All users must use compatible system, usually best for 1:1 interactions
White boarding	Co-development of ideas	Cost, bandwidth; may also require audio conferencing to be useful
Application sharing	Co-development of documents	Cost, bandwidth; may also require audio conferencing to be useful

In addition to tools that are used for synchronous communication, there are additional tools that can be used for asynchronous communication. Table 2 provides examples of asynchronous communication tools found in contemporary online settings.

Table 2. Examples of asynchronous communication tools (Ashley, 2003)

Tool	Useful for	Drawbacks
Discussion boards	Dialogue that takes place over a period of time	May take longer to arrive at decisions or conclusions
Web logs (Blogs)	Sharing ideas and comments	May take longer to arrive at decisions or conclusions
Messaging (e-mail)	One-to-one or one-to-many	May be misused as a "collaboration tool" and

	communications	become overwhelming
Streaming audio	Communicating or teaching	Static and typically does not provide option to answer questions or expand on ideas
Streaming video	Communicating or teaching	Static and typically does not provide option to answer questions or expand on ideas
Narrated slideshows	Communicating or teaching	Static and typically does not provide option to answer questions or expand on ideas
"Learning objects" (Web-based training)	Teaching and training	Typically does not provide option to answer questions or expand on ideas in detail
Document libraries	Managing resources	Version control can be an issue unless check-in / check-out functionality is enabled
Databases	Managing information and knowledge	Requires clear definition and skillful administration
Web books	Teaching and training	Not dynamic and may lose interest of users
Surveys and polls	Capturing information and trends	Requires clear definition and ongoing coordination
Shared Calendars	Coordinating activities	System compatibility
Web site links	Providing resources and references	May become outdated and "broken"

For blended settings, teachers and designers can leverage the traditional small group, collaborative, or whole class instructional and assessment strategies in support of online learning and assessment. The opportunity to combine the advantages of face-to-face assessments with the flexibility afforded by the online communication tools is a major strength of the blended setting. Additionally, many of these assessment suggestions require the student to develop information literacy skills and technical skills that support higher level learning. The i^2Flex learning model (Avgerinou, Gialamas, & Tsoukia, 2014) incorporates many of these strategies within the conceptualization of "flipped classrooms" that also flex time, pace, place, and/or delivery mode. Table 3 offers some ideas for using synchronous or asynchronous tools for assessment purposes or learner feedback in blended settings.

Table 3. Assessments and feedback in blended settings

Tool	Type of Assessment or Feedback	Strengths
Audio conferencing	Project-based assessment	Individual or small groups are convened with the teacher for scaffolding or informal feedback of project-based assessments. Formative feedback may occur with this tool or in the face-to-face setting of the blended classroom.
Web conferencing	Student presentation of Final Projects	Individuals or student groups post digitally-created presentations of a Final Project to be shared with the class and judged by the teacher with a rubric provided a priori. Formative feedback may occur with this tool or in the face-to-face setting of the blended classroom.
Video conferencing with Application sharing	Student presentation of Final Projects	Individuals share both a digital presentation and an oral presentation of a Final Project with the class and are judged by the teacher with a rubric provided a priori.
Discussion boards	Formative assessment of content-specific	A specific prompt is provided to students for individual responses that become shared across the group. The instructor offers feedback (supportive and/or corrective) to the group.

	topics	
Web logs (Blogs)	Collaborative or group project development	Teacher establishes groups for blogging within the online course. Teacher chooses whether to engage with feedback in the blogs or to allow them to be student-centered. Formative feedback may occur with this tool or in the face-to-face setting of the blended classroom.
Messaging (e-mail)	Advising; Direct individual feedback	Allows personalized, direct feedback to the student with a digital record of the interaction. May be shared with a parent or administrator if appropriate.
Streaming audio	Group feedback	Particularly effective for the teacher to maintain a personal connection with the class between the face-to-face meetings. Purpose may be motivational, reminder(s), or project support information.
Streaming video	Group feedback	Particularly effective for the teacher to maintain a personal connection with the class between the face-to-face meetings. Purpose may be motivational, reminder(s), or project support information.
Narrated slideshows	Student presentation of Final Projects	An advanced version of Web Conferencing if bandwidth, student access to these slideshows, and student technology skill allow.
Document libraries	Contribution to whole class projects	Increasingly, authentic assessments allow students to take on real-world problems in their communities or regions. Contributions to the Document Library for such a project could be one component of the assessment, as defined in a rubric a priori.
Databases	Contribution to whole class projects	Could be used to manage the URLs of data and information relevant to an authentic assessment in parallel with a Document Library.
Web books	Summative assessment for a literature or composition course	Students create a web book of their final work instead of a paper version.
Web site links	Contribution to whole class, small group, or individual projects	A common rubric element for the assessment of student learning in any online assessment.

In general, the global expansion of online learning access for K-12 students has not been coupled with the research and dissemination of results necessary to judge the quality of these educational environments (Barbour, 2013). In a synthesis of research associated with best practices for virtual schooling, Ferdig and colleagues (2009) make multiple references to research citations supporting the importance of teacher assessment of students and student self-assessment in online settings. Ferdig et al. identified virtual schools' assessment research and best practices references for course management, instructional designers, administrators, mentors, and guidance counselors involved with distance education for K-12 learners. They concluded that "…Lacking a comprehensive body of research, current best practices reflect the adaptation of the best practices associated with face-to-face teaching for the online environment" (p. 495). The authors of this chapter believe that there are examples of assessment best practices in online and blended settings that have as yet to be shared and that these examples are not mere adaptations, but new conceptions of authentic learner assessment.

CONTEMPORARY TRENDS

Just as the design of blended and online learning courses should be learner centered, the assessments within these environments should also be learner centered. Moving assessments from the more "traditional" to more "authentic" is not only possible but also preferred as a strategy to emphasize learner choice and leverage learner prior knowledge. Lombardi (2008) says, "Faculty hoping to change student learning must address the limitations of the current system of feedback" (p. 2). Avgerinou and colleagues (2014) emphasize such non-traditional methodologies as foundational to the i^2Flex model as one example of a shifting global interest in effective web-based instruction. Online settings offer extended opportunities for the teacher to provide feedback that is content and learner specific, scaffolding improved student performance in a next iteration.

Creating assessments that actively engage the learner is a challenge in every learning setting. Using the unique aspects of interactive technologies can allow for assessments that both actively engage the learner and also allow for creative alternative assessments. A meta-analysis of the U.S. Department of Education (2010) includes references to examples of both. Prineas and Cini (2011) argue persuasively not only that "the connections between online education and learning outcomes assessment are deep but also that the mediated settings provided by online education have the potential to significantly improve assessment and its capacity to improve teaching and learning" (p. 4). They also argue that because of the asynchronous nature of online courses, assessments can actually be designed to assess every learner as they advance through the objectives of a course, as opposed to assessment in face-to-face settings that assess students at a given point in time regardless of their individual advancement in the course.

Scaffolding student performance typically includes explicit formative and summative assessments to allow opportunities for conceptual and skill development over time, as well as the critical feedback necessary for the individual learner to develop and succeed. Third party software applications and for-profit organizations are offering assessments for content specific curricula. Horn and Staker (2012) believe that blended learning "changes the equation" (p. 1) for teachers and designers to be able to create differentiated, personalized learning pathways. "Now teachers can use software to offer countless different learning pathways to students in response to daily (even minute-by-minute) formative assessment" (Horn & Staker, 2012, p. 1).

Vega (n.d.) presents a taxonomic model grounded in assessments that have well-defined learner activities or performances and which include feedback criteria to support learner success. The taxonomy includes six levels:

- **Blended and Online Assessment Taxonomy:**
    - Involves Memorization and recall
    - Conceptual understanding
    - Process application
    - Analyzing data
    - Rationalization
    - Original content creation

Vega supports the idea of students self-evaluating their performance when the assessment is aligned with the curricula and when detailed descriptions are provided for the student regarding grading criteria. Vega also provides multiple examples of potential assessment activities and grading or feedback criteria for each level of Bloom's Revised Taxonomy (Remember, Understand, Apply and Analyze, Evaluate, Create) (Anderson & Krathwohl, 2001). The suggested assessments and the grading/feedback criteria are recognizable as "typical" for the K-12 classroom but could be easily adapted to blended or online courses using contemporary digital technologies and software applications.

A case study of an online high school forensic science teacher (Barbour & Unger, 2014) provides insight into the complexities of managing time, place, and type of assessment strategies that can be effective in online or blended settings:

> *Finally, Lorri directs the students to combine the information, visual organizers, summaries, concept maps, and instructor feedback from each of these steps to develop a critical analysis of the content. She instructs her students to decide what is fact and what is opinion, in the process of developing and composing a critical review of the content that is supported by their research.*
> *Students submit their assignments as attachments in the course management system. This critical review provides an opportunity for the students to display the major concepts they learned through the assignment. It also gives Lorri a summative assessment tool to evaluate the students' understanding of the overarching concept being taught, and their ability to apply it to a real context. (pp. 31-32)*

Providing online access to students for self-assessment purposes may be motivational, satisfying, and effective as a formative assessment strategy. Barbour and Adelstein (n.d.) describe the use of java-scripted, multiple-choice questions that gave immediate learner feedback about response accuracy, were ungraded, and allowed repeated student access. The authors drew this conclusion about these self-assessments, "Students appreciated having tools that they could use to check their understanding, keep them on track and reinforce their learning" (p. 8).

In a proposed framework to address pedagogical strategies in online learning, Bonk and Dennen (2007) stressed moving beyond traditional assessment activities to better support online learners and evaluate progress. Example strategies include problem- and inquiry-based learning, peer-feedback activities, online case learning, and online debates. Many of the outcomes from these strategies can be catalogued in a student portfolio that is assessed for formative and summative feedback to the learner (Bonk & Cummings, 1998). Examples of this approach include the Blue Ridge Virtual Governor's School (Virginia), Hillsborough Virtual School (Florida), Iowa Virtual Academy, and many others.

CHALLENGES

Tools & Strategies

Communication in online environments is a common obstacle for students and teachers (Ashley, 2003; Barbour & Unger, 2014; Ferdig et al., 2009). Effective uses of a variety of web-based technologies allow online teachers to offer student-centered feedback that enhances learning and supports meaningful assessment of that learning.

In a case study of the Michigan Virtual School, DiPietro, Ferdig, Black, and Preston (2008) identified a number of assessment challenges while identifying effective assessment strategies. When using collaborative assessments, students are often placed into groups taking into account ability level, gender, and geographical location (p. 20). The planning that goes into designing such an assessment exceeds that of traditional assessment measures and requires a level of familiarity with individual students that may be difficult to achieve in a purely online environment. A second challenge involves the types of technologies that are readily available or emerging and the likelihood that a student may choose an unfamiliar technology with which to design an assessment artifact (p. 21). Rapid developments in and updates to tools, applications, and software already affect traditional classroom teachers. However, both of these issues can be mitigated by on-campus instructional support that is not always present in a virtual or blended school.

Garrison and Akyol (2012) caution educators to be mindful of reasons for adopting and implementing technology tools and selecting assessment strategies. "Even though emerging instructional technologies have allowed educators to adopt online and blended learning, their motivations for adopting this technology are mixed and are not often based upon sound educational and pedagogical reasoning" (p. 112). The researchers suggest building communities of learning that facilitate meaningful interaction and intentional learning as a means to incorporate tools for students rather than focus on the available technologies.

Students who enroll in online or blended programs need to exhibit a level of technology proficiency that differs from students in a traditional classroom. In a case study of the South Carolina Virtual School Program, Rauh (2011) noted that enrollment in the program requires guidance counselor and parental approval along with completing a technology assessment that must be passed with a grade of 80% or better. This requirement builds on earlier research by Kozma and Croninger (1992) that found a distinct relationship between a learner's current understanding or ability and how new learning is acquired. If a learner exhibits struggles with using existing technologies or tools, this will ultimately impact his or her ability to participate in the online or blended course, including any assessment measures. Similarly, such technological proficiencies are essential to the ultimate aim of i^2Flex, "…developing students' twenty-first century skills, while also helping them successfully prepare for their higher education studies and their future careers" (Avergerinou et al., 2014, abstract). The various technologies and tools discussed earlier in this chapter should be considered when evaluating student technology proficiencies.

Student Satisfaction

Student satisfaction with blended and online learning environments remains a significant challenge for both teachers and course designers. Castle and McGuire (2010) share this finding:

> *When measured against other modalities, online delivery of education ranks below more traditional methods of instruction, particularly onsite instruction. However, online courses that employ technologies that more closely mimic onsite, face-to-face interactions (for example, synchronous interactions via live video and audio feeds) tend to show higher levels of student satisfaction than entirely asynchronous online delivery. The implication for using online course delivery to maximize sustainable outcomes is clear; online courses should employ a mix of synchronous interaction opportunities to maximize student satisfaction opportunities. However, the authors recommend this use of increasing technology be approached with some caution. (p. 38)*

Bernard et al. (2004) offered a meta-analysis of distance education compared with traditional classroom instruction that found great variability in the comparative student performances across distance students and their traditional classroom counterparts. Their investigation of achievement effect sizes favored the traditional classroom for synchronous applications and distance education for asynchronous applications. In 2006, Tallent-Runnels and colleagues concluded that asynchronous communications seemed to deepen communication and that learning outcomes in online courses mirrored those of traditional classrooms. These early studies suggest that the technological tools available today offer much greater capacity to link student satisfaction and the use of synchronous technologies to engage learners, develop community, and support improved learning outcomes. In a recent study of K-12 teachers' satisfaction with blended learning environments, Kuo, Belland, Schroder, and Walker (2014) found that these teachers (when students were in a blended learning setting) felt interaction was important to their learning and that they were moderately satisfied with the blended course that included few collaborative activities.

In a qualitative study of seven secondary school students who had participated in multiple virtual courses in Newfoundland and Labrador (Canada), Barbour, McLaren, and Zhang (2012) found that students enjoyed their online courses, particularly the synchronous classes; online students did not report much of

a sense of community with their online classmates nor their online teachers; and students did not make good use of their asynchronous class time. The authors conclude that the asynchronous class time was designed for text readings, homework, assignments (not connected to their online resources), or test preparation leaving the students unengaged from their peers and isolated from the technological resources available in the online courses. These findings support the need for communication, pedagogical, and assessment strategies that engage students in meaningful learning in online settings.

Academic Integrity

Authenticity of student work and academic integrity represent two major areas of concern with respect to online and blended courses. LaFrance and Beck (2014) strongly urge administrators to implement procedures for verifying authenticity. In other words, implementation of these learning environments should always include a process by which the identity of the student is authenticated and proof that a student completed the work himself or herself. One way that some virtual schools have addressed this issue is through proctored exams. However, Greenway and Vanourek (2006) caution that such a method is outdated and counterintuitive to the underlying goal of virtual schools. This method holds some possibility for the blended setting but does little to leverage the flexibility and power of the online setting. The Florida Virtual School (FLVS) drafted a policy document, referred to as the Non-negotiable (http://www.flvs.net/areas/flvscourses/Documents/AcademicIntegrity.pdf) that addresses student, parent, and teacher expectations with respect to academic integrity defining violations and detailing consequences for violations (Anastacio, 2013).

Aside from federal guidelines directly impacting post-secondary online education, the WICHE Cooperative for Educational Technologies (WCET) (2008) recommends both prevention and compliance measures to support academic integrity. Two of the prevention strategies involve multiple assessment techniques with an emphasis on written assignments and threaded discussion. These strategies dovetail directly with plagiarism detection services, a recommendation for compliance monitoring. WCET also mentions exam proctoring with a more novel approach referencing Troy University and the use of remote monitoring devices. Remote monitors are purchased by students and used by institutions as a quality control measure to randomly select and verify that the individual completing coursework matches the stored identity markers for the student registered for the course. Unfortunately, even measures such as remote monitoring are not without issue. The digital age has brought about complications regarding identity theft, and it is feasible to visualize how remote monitoring might be hijacked by an identity thief or contribute to a student's identify being stolen. Individuals interested in further evaluating challenges related to student authentication should review the WCET resources --available at http://wcet.wiche.edu/learn/issues/student-authentication-- or consult federal guidelines as detailed in amendments to and reauthorization of the Higher Education Act (U.S. Department of Education, n.d.).

Policy & Teacher Preparation

As more states begin to adopt and/or approve online, virtual, and blended K-12 school options, policy makers are grappling with decisions that may impact learner assessment (Compton, Davis, & Mackey, 2009; Greenway & Vanourek, 2006). Researchers and experienced virtual schooling teachers and administrators must work collaboratively to help inform these decisions. The broader educational accountability landscape has thus far left most virtual schools untouched. However, more scrutiny is likely to occur as blended options become more popular and readily available. Thus, use of nontraditional assessments in blended environments, such as portfolios, could potentially influence traditional school assessments. Alternatively, standardized assessments could eventually become more prominent across all learning environments. The outcome may depend upon the influence of educators versus other interested parties with respect to working with policy makers.

Teacher education programs must also take into consideration how to prepare preservice teachers to design blended assessments if any of the best practices emerging from ongoing literature are to

proliferate. Compton and Davis (2010) found some success in emphasizing debriefing and reflection methods when working with preservice virtual teachers. This method mimics learner-created portfolios, emphasizing the role of critically evaluating and refining strategies and processes.

RECOMMENDATIONS

Learner assessment in blended and online learning settings is strengthened when:

- it leverages the interactive aspects of web-based technologies,
- the student is actively engaged in an authentic assessment of their learning,
- the course design purposefully aligns objectives, instruction, and assessments, and
- assessments are designed to link the online setting with the face-to-face setting to support student satisfaction and success.

Teachers in online and blended settings need access to relevant professional development in support of developing or transitioning their pedagogy to non-traditional settings. Barbour (2012) describes an optional web-based course for interested Canadian educators that could serve as a model for others. One of the professional development outcomes for this course includes adapting learner assessments to the unique, online student-centered environment. Teachers, course designers, and K-12 administrators of online and blended learning settings should take advantage of the lessons that have been learned (and the research conducted) over the last two decades as distance and hybrid learning options have proliferated in post-secondary settings. While these lessons are not wholly pertinent to K-12 settings, there is a deep base for potential application particularly to the high school-aged learner. Readers are encouraged to explore i^2Flex (Avgerinou et al., 2014) as an evolving learner-centered model designed to leverage blended and online instructional methodologies for K-12 audiences.

FUTURE RESEARCH DIRECTIONS

These initial recommendations echo one made by Barbour (2014) in his think tank *Review of Virtual Schooling and Student Learning*, "…researchers have moved beyond simply investigating whether one medium is better than the other and begun—and need to continue—investigating under what conditions K-12 online and blended learning can be effectively designed, delivered, and supported" (Summary of Review). Future research must take into consideration how strategies, such as the Community of Inquiry (CoI) framework, used in online and blended environments, enhance critical thinking (Garrison & Akyol, 2012). Assessment studies comparing student performance in traditional settings to student performance in online settings do nothing to contribute to a body of literature focused on the unique contextual variables of assessing learning for K-12 students in blended and online settings. The seminal work in the "no significant difference" phenomenon of media comparison studies is now more than three decades old (see Clark, 1983) and the literature is clear that student learning does not differ when comparing delivery methods. However, assessment methods that take advantage of the unique opportunities afforded in a blended setting can perhaps provide more insight into student learning than assessments that are typically modeled after traditional classroom settings.

The research base for effective K-12 learner assessment in blended and online settings is scant and lacks both impact data and qualitative description. Ferdig and colleagues (2009) recommended that, "Teacher education needs to get involved in both in-service and pre-service teacher preparation for virtual schooling education" (p. 497) and these authors extend that recommendation to include teacher education colleagues who specialize in learner assessment. The identification of effective online assessment strategies for K-12 students as well as the best practices associated with leveraging web-based technologies and face-to-face strategies as allowed in blended settings is ripe for new research.

CONCLUSION

Assessment in online and blended classroom settings must be reconsidered as new technologies emerge at a rapid pace. These assessments cannot simply be adapted from traditional classroom assessments but should also be newly conceptualized to motivate and satisfy the highly technological learner in today's virtual classrooms. K-12 teachers have an opportunity now to create assessments that can be administered to differentiated learners, applying assessments when students are ready and not at pre-determined times. There are many challenges to developing appropriate assessments in these new instructional settings but they can be overcome with careful planning and constant monitoring of emerging technologies, giving careful consideration to the benefits of adopting those technologies as stand-alone technologies or in combinations that take advantage of learning that is not constrained by time, place, or pace. Students yearn for virtual schooling and the development of reliable and valid assessments must keep pace with the new synchronous and asynchronous technological tools. As confirmed by Castle and McGuire (2010), students seem to desire a balance of synchronous and asynchronous delivery methods. Online, virtual, and blended schooling options are often a program of choice, with or without tuition. Thus, the earlier discussion on student satisfaction cannot be readily dismissed. Rather, the concerns and issues raised by students in these environments should be taken into consideration when designing courses and assessments, lest a particular school find their students enrolling at a different school. Assessment measures also have the potential to attract students. Teachers at the Michigan Virtual School have found success with nontraditional, online assessments that benefit learners who typically struggle with tests and test anxiety (DiPietro et. al., 2008). Administrators, course designers, and teachers must look beyond the traditionally successful assessment techniques and allow emerging, innovative "technologies to transform the assessment process" (p. 179) while taking into consideration how to monitor the authenticity of work submitted and assessments completed (LaFrance & Beck, 2014). While the challenges are significant, the potential for blended and online settings to meet the diverse needs and expectations of contemporary K-12 learners should not be underestimated as the technologies continue to evolve faster than the effective pedagogies and relevant research.

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KEY TERMS AND DEFINITIONS

Asynchronous Communication: Communication in which the send/receive/reply cycle does not occur at the same time; sender and receiver are typically separated by time and/or distance.

Authentic Assessment: Assessments of learning in which students perform meaningful, real-world tasks.

Blended Learning: Offers instruction that is partly online and partly face-to-face with an instructor; a combination of Cyber School and Traditional School.

Cyber Schools: Educational institutions that offer programs, courses, and instruction via web-based technologies; also known as Virtual Schools.

Formative Assessment: Typically brief, informal assessments of student learning conducted during the instruction period to monitor student understanding and knowledge acquisition.

Hybrid Learning: Offers instruction that is designed and delivered using web-based digital technologies in combination with other telecommunications technologies (e.g., compressed video, teleconferencing).

Online Learning: Offers instruction that is designed and delivered using web-based digital technologies.

Summative Assessment: Formal assessments of student learning; typically at the end of course or unit of study.

Synchronous Communication: Communication in which the send/receive/reply cycle occurs at the same time; sender and receiver may be separated by distance, but are not separated by time.

Traditional Schools: Educational institutions that offer programs, courses, and instruction with an instructor present in the same time and place; also known as Face-to-Face.

Virtual Schools: Educational institutions that offer programs, courses, and instruction via web-based technologies; also known as Cyber Schools.