



Best Practices in Online Professional Learning

In this report, Hanover Research outlines best practices for online professional learning that providers and facilitators can use directly with participants to promote engagement and maximize the effectiveness of programming.

March 2019

K-12 EDUCATION
Educator Learning Center







TABLE OF CONTENTS

Executive Summary	3
Section I: Core Elements of Online Professional Learning	5
CORE ELEMENTS OF EFFECTIVE PROFESSIONAL LEARNING PROGRAM DESIGN	5
ADDRESSING COMMON CHALLENGES THROUGH ONLINE PROFESSIONAL LEARNING	7
Section II: Effectively Supporting Online Professional Learning.....	8
INCORPORATING EFFECTIVE DESIGN AND DELIVERY MODELS	8
Applying Design Principles	8
Choosing Delivery Models.....	9
Providing Support Before Training.....	15
CREATING OPPORTUNITIES FOR COLLABORATION AND REFLECTION.....	16
Facilitating Interactive Participation	16
FOSTERING COLLABORATION	18
Following Up with Targeted Support	19
Top 5 Considerations for Online Professional Learning Platforms.....	22

EXECUTIVE SUMMARY

Online professional learning has emerged as “an increasingly popular and viable alternative to face-to-face professional development” by giving teachers greater control over the timing and setting in which they learn and enabling them to access a wider variety of offerings than their district or school may otherwise provide.¹ In addition to diversifying the ways in which teachers can learn, online platforms also have the potential to build communities of teachers across towns and states, fostering knowledge-sharing among peers nationwide.²

Online professional learning offers four primary benefits to both teachers and districts: flexibility, community, accountability, and agency. Hanover further expands on how to incorporate critical professional learning elements into frameworks to support these four benefits in **Section I** of this report.

 Flexibility	<p>Customizable to individual teachers' needs, online platforms can make professional learning more adaptable, as well as more convenient and scalable.</p>
 Community	<p>Online platforms can enable teachers to interact and collaborate, both in real time and asynchronously. Districts and schools can benefit from opportunities to share knowledge and expertise with their peers.</p>
 Accountability	<p>By capturing participation, usage, and other data and information, online platforms can provide districts and schools with greater insight into teacher professional learning, allowing for more accountability than face-to-face programs afford.</p>
 Agency	<p>Through online platforms, teachers can design a professional learning program that aligns with their individual needs and experience.</p>

Source: National Research Council.³

¹ [1] Reeves, T.D. an. J.J.P. “Bolstering the Impact of Online Professional Development for Teachers.” *The Journal of Educational Research and Policy Studies*, 1, February 2013. Pp. 50-51.

<https://pdfs.semanticscholar.org/14ef/d7916866035d42712a92d922dbf766dcf798.pdf> [2] Russell, M. et al. “Face-to-Face and Online Professional Development for Mathematics Teachers: A Comparative Study.” 13:2. <https://files.eric.ed.gov/fulltext/EJ862349.pdf>

² [1] Burns, M. “Distance Education for Teacher Training: Modes, Models, and Methods.” Education Development Center, Inc., 2011.

<http://idd.edc.org/sites/idd.edc.org/files/Distance%20Education%20for%20Teacher%20Training%20by%20Mary%20Burns%20EDC.pdf> [2] Dallas, P. “A Blueprint for Personalized Professional Development by Teachers, for Teachers.” EdSurge, October 22, 2014. <https://www.edsurge.com/news/2014-10-22-a-blueprint-for-personalized-professional-development-by-teachers-for-teachers>

³ Figure text adapted from *Enhancing Professional Development for Teachers: Potential Uses of Information Technology.* Committee on Enhancing Professional Development for Teachers. National Research Council, 2007. Pp. 10-15.

<https://www.nap.edu/read/11995/chapter/1>

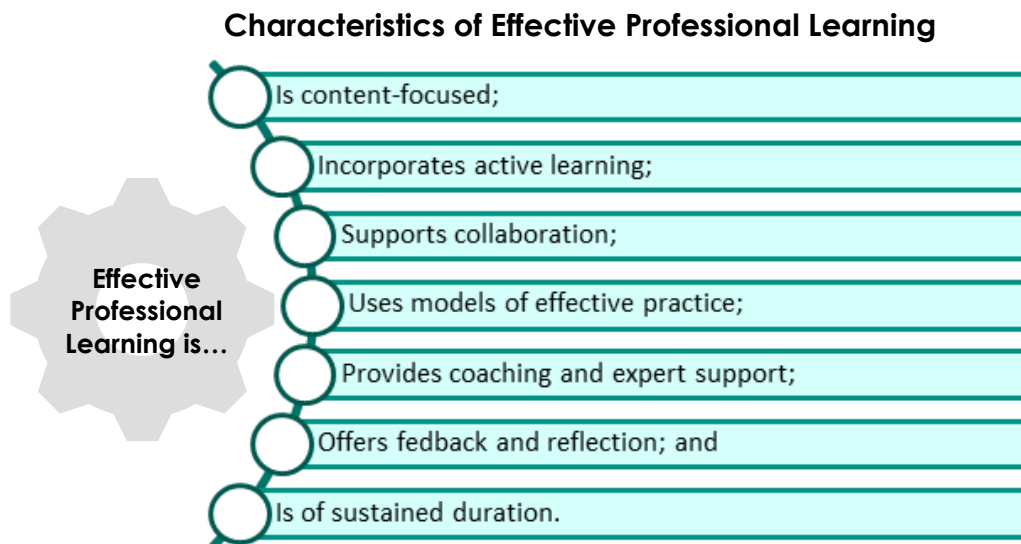
To yield the greatest extent of these four primary benefits, districts can focus on three main tactics, which Hanover discusses in **Section II** of this report:

- 1. Motivating and sustaining participant engagement.** Professional learning providers should design and choose online and hybrid solutions based on participants' learning goals and development needs. Providers must make sure that schools and participants are fully prepared to support online delivery models and are educated on how to use online interfaces. Providers should also offer initial training in using digital platforms and continual support in the event of technology issues.
- 2. Creating opportunities for collaboration.** Facilitators should promote initial interactions – either face-to-face or online video instructions – to establish a safe, comfortable, and open environment for communication throughout the learning process.
- 3. Supporting reflection on content and practice.** Effective online professional learning encourages participants to ask questions after activities or exercises to reflect on comprehension. Follow-up implementation support spurs a broader professional development initiative by offering tools, resources, and collaboration opportunities for teachers to self-reflect on how to incorporate content into their own practices.

SECTION I: CORE ELEMENTS OF ONLINE PROFESSIONAL LEARNING

CORE ELEMENTS OF EFFECTIVE PROFESSIONAL LEARNING PROGRAM DESIGN

Professional learning, in all its forms, is most effective when it adheres to research-based best practices. **Thus, online professional learning must “be long-term, sequential [and] differentiated based on teachers’ needs and realities, [and] provide teachers with opportunities to view the intended practice and study it so they can plan, design[,] and apply it in their classrooms.”**⁴ When effectively designed, online platforms both *deliver multichannel instruction* that uses a combination of video, visual, audio, and print elements to drive activities and *enable teachers to collaborate* with peers at convenient times and places.⁵ Ultimately, however, online professional learning proves most impactful when emphasizing content teachers can use it to benefit student outcomes and aligning activities both with that content and the context in which teachers provide instruction.⁶ Notably, when executed effectively, online and face-to-face professional learning programs can have comparably positive effects on teachers’ instructional practices.⁷



Source: Learning Policy Institute.⁸

⁴ Burns, M. “Ensuring Quality Online Learning for Teachers.” *Global Partnership for Education*. 2016. <https://www.globalpartnership.org/blog/ensuring-quality-online-learning-teachers>

⁵ Burns, “Distance Education for Teacher Training: Modes, Models, and Methods,” *Op. cit.*, p. 63.

⁶ Steiner, L. “*Designing Effective Professional Development Experiences: What Do We Know?*” *Learning Point Associates*. 2004. Pp. 1-2. https://gtlcenter.org/sites/default/files/docs/pa/4_PDResearchPolicyAction/DesigningEffectivePD.pdf

⁷ Russell et al., *Op. cit.*

⁸ Figure text quoted verbatim with minor modifications from Darling-Hammond, L. et al. “Effective Teacher Professional Development.” Learning Policy Institute, 2017. pp. v-vi. https://learningpolicyinstitute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf

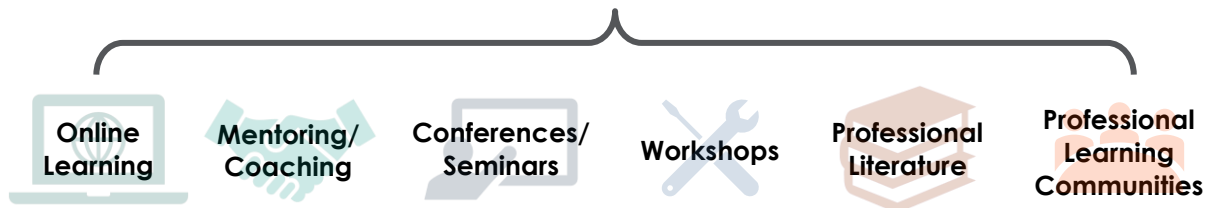
When selecting online platforms, districts and schools should consider their architecture and design – including interactive features and embedded learning tools – before investing significant time or funding.⁹ Specifically, online platforms should be evaluated to determine whether they reflect best practices for professional learning by:¹⁰

- Providing opportunities to apply skills
- Facilitating collaboration among users;
- Offering ongoing support and coaching to refine practice
- Differentiating activities; and
- Promoting reflection on current practice.

Concerns about the accessibility of necessary technology and availability of suitable content, as well as teachers' preference for face-to-face training, may mean that online platforms may not become an exclusive vehicle for teacher professional learning.¹¹ However, no single format – including in-person training sessions – likely will meet all teachers' professional learning needs. Thus, as with other delivery methods, **districts and schools should embed online professional learning in a wider professional learning framework that blends asynchronous and synchronous formats and offers in-person and distance learning options.**¹²

Components of a Comprehensive Professional Learning Framework

Select Components of a Comprehensive Professional Learning Framework



Sources: Learning Forward, Community for Advancing Discovery Research in Education, Organisation for Economic Cooperation and Development.¹³

⁹ "Designing Professional Learning." *Australian Institute for Teaching and School Leadership and Learning*, vol. 10, 2014. pp. 8, 10-1, 18.

<http://www.teachingaustralia.edu.au/ta/webdav/site/tasite/shared/Evaluation%20of%20the%20Leading%20Australia>

¹⁰ "Bulleted Text Adapted from: Cavanaugh, C. 'Potential of Online Teacher Professional Development.'" In *International Association for K-12 Online Learning*, 2013. <https://www.inacol.org/news/potential-of-online-teacher-professional-development/>

¹¹ *Enhancing Professional Development for Teachers: Potential Uses of Information Technology.* Committee on Enhancing Professional Development for Teachers, Op. cit., pp. 16-20.

¹² [1] Killion, J. "'Tapping Technology's Potential.'" *JSD | Learning Forward*, 34:1. 2013. <https://learningforward.org/wp-content/uploads/2013/02/tapping-technologys-potential.pdf> [2] Mizell, H. "Why Professional Development Matters." *Learning Forward*, 2010. https://learningforward.org/docs/default-source/pdf/why_pd_matters_web.pdf, pp. 8-9. [3] Silberman, M. and C. Auerbach. *Active Training: A Handbook of Techniques, Designs, Case Examples, and Tips.* Pfeiffer, 2006. [http://elearning.fit.hcmup.edu.vn/~longld/References%20for%20TeachingMethod&EduTechnology%20-%20Tai%20lieu%20PPDH%20&%20Cong%20Nghe%20Day%20Hoc/\(Book\)%20-%20Sach%20tham%20khao%20-%20Teaching%20Method/2006%20M.Silberman&C.Auerbach%20-%20Active%20Training%20-%20A%20Handbook.pdf](http://elearning.fit.hcmup.edu.vn/~longld/References%20for%20TeachingMethod&EduTechnology%20-%20Tai%20lieu%20PPDH%20&%20Cong%20Nghe%20Day%20Hoc/(Book)%20-%20Sach%20tham%20khao%20-%20Teaching%20Method/2006%20M.Silberman&C.Auerbach%20-%20Active%20Training%20-%20A%20Handbook.pdf)

¹³ Figure adapted from: [1] "Professional Learning Planning." *Learning Forward*.

<https://consulting.learningforward.org/consulting-services/comprehensive-planning/> [2] "Emerging Design Principles for

ADDRESSING COMMON CHALLENGES THROUGH ONLINE PROFESSIONAL LEARNING

Effective online professional learning addresses one of the greatest challenges facing students: developing the knowledge and skills needed to graduate high school ready for college and a career. Given the crucial role teacher quality plays in student success, building teachers' instructional capacity through effective professional learning opportunities remains vital.¹⁴ Yet, teachers often find the professional learning opportunities available to them to be ineffective, irrelevant, and poorly connected to their work with students. In fact, a 2014 survey found only 29 percent of teachers to be "highly satisfied with current professional development offerings."¹⁵

Districts and schools can address teachers' dissatisfaction by giving them a greater voice in shaping their professional learning. A 2016 survey revealed that only slightly more than half of teachers have "some input" into professional learning decisions, while over 20 percent have "no input." Not surprisingly, 75 percent of teachers also referred to district and school leaders as "the primary decision-makers regarding professional learning."¹⁶ Another survey, conducted in 2015-16, produced similar findings, with approximately 19 percent of teacher describing themselves as having "no influence" in "determining the content of in-service professional development programs," in particular.¹⁷

Teachers who have more choice over their professional learning opportunities are more satisfied. By supporting teachers' interest in a more personalized and collaborative professional learning experience, online platforms can offer districts and schools a compelling path forward.¹⁸

Online and Blended Teacher Professional Development in K-12 STEM." Community for Advancing Discovery Research in Education, 2017. p. 3. https://cadrek12.org/sites/default/files/DRK12_OBPD_113017.pdf [3] "The Professional Development of Teachers." Organisation for Economic Co-operation and Development, 2009. p. 50. <https://www.oecd.org/berlin/43541636.pdf>

¹⁴ [1] "Raising Student Achievement Through Professional Development." Generation Ready, 2013. p. 1. <http://www.generationready.com/wp-content/uploads/2013/10/PD-White-Paper.pdf> [2] Mizell, H. "Why Professional Development Matters." Learning Forward, 2010. pp. 3, 18-19. https://learningforward.org/docs/default-source/pdf/why_pd_matters_web.pdf.

¹⁵ "Teachers Know Best: Teachers' Views on Professional Development." Bill and Melinda Gates Foundation. 2014. P. 3. <https://s3.amazonaws.com/edtech-production/reports/Gates-PDMarketResearch-Dec5.pdf>

¹⁶ "The State of Teacher Professional Learning. Results from a Nationwide Survey." Corwin, Learning Forward, National Education Association. 2017. p. 12. https://us.corwin.com/sites/default/files/professional_learning_teacher_survey_2017.pdf

¹⁷ "Characteristics of Public Elementary and Secondary School Teachers in the United States: Results From the 2015–16 National Teacher and Principal Survey. First Look." National Center for Education Statistics, Institute of Education Sciences, 2018. p. 15. <https://nces.ed.gov/pubs2017/2017072rev.pdf>

¹⁸ "Teachers Know Best: Teachers' Views on Professional Development." Bill and Melinda Gates Foundation, Op. cit. pp. 10, 15.

SECTION II: EFFECTIVELY SUPPORTING ONLINE PROFESSIONAL LEARNING

In this section, Hanover discusses strategies that districts can employ to support teachers' online professional learning through three key design principles, as outlined below: motivating and sustaining participant engagement; creating opportunities for teachers to collaborate as learners; and supporting reflection on content and practice.

INCORPORATING EFFECTIVE DESIGN AND DELIVERY MODELS

Emerging Design Principles for Online Professional Learning

Motivating and Sustaining Participant Engagement



- Encourage teachers to participate in decision-making about their learning.
- Design and choose synchronous, asynchronous, and hybrid delivery models based on learning objectives and goals.
- Provide support for online applications.

Creating Opportunities for Teachers to Collaborate as Learners



- Begin professional learning programs with face-to-face interactions.
- Facilitate connections between individuals.
- Structure online discussion to encourage collective participation.
- Leverage user-friendly platforms designed to support collaboration.

Supporting Reflection Content and Practice



- Use artifacts that offer low-risk participation opportunities as the basis for early discussions on content and practice.
- Design tasks to encourage deep reflection and learning around artifacts.
- Schedule sessions to build time for participants to apply ideas and reflect on their application.

Source: Community for Advancing Discovery Research in Education and Active Training: A Handbook of Techniques, Designs, Case Examples and Tips.¹⁹

APPLYING DESIGN PRINCIPLES

Effective comprehensive online professional learning content aligns with the particular district-identified learning goals and development needs of its teachers and staff.²⁰ Content should be tailored to participants' grade levels and disciplines,

¹⁹ [1] Kowalski, S. "Emerging Design Principles for Online and Blended Teacher Professional Development in K-12 STEM." Community for Advancing Discovery Research in Education, 2017. p. 3.

https://cadrek12.org/sites/default/files/DRK12_OBPD_113017.pdf [2] Silberman and Auerbach, Op. cit., pp. 191-205.

²⁰ Killion, "'Tapping Technology's Potential.' JSD | Learning Forward, 34:1," Op. cit., p. 14.

and activities should consider teachers' diverse learning styles and expand on previous professional learning experiences.²¹ Providers should determine participants' professional learning needs from a variety of educator data sources, including teacher observations, performance evaluations, and teacher self-assessments. Further, districts can administer needs assessment surveys to probe educators about which areas of their pedagogies and professional competencies they would like to develop or strengthen.²²

Furthermore, educators have reported being more satisfied with their professional development when they have input on the topics they pursue and the activities they complete. Yet according to a 2014 Bill and Melinda Gates Foundation report, nationally nearly one in five teachers never have any say in their professional development, and fewer than one in three choose most or all of their professional learning.²³ Providers can encourage greater participation by structuring online professional learning as an opportunity where participants have agency in what, how, and when they learn, rather than complete mandated training as a compliance exercise.²⁴

CHOOSING DELIVERY MODELS

Online professional learning requires a comprehensive selection, implementation, and evaluation process of delivery models. Providers must develop criteria that clearly outline the integration of online learning into the overall professional learning process. To this end, chosen online technologies must directly address participants' needs and identified areas for development.²⁵ Moreover, online solutions can hinder learning if providers do not implement technology comprehensively. Districts must continuously evaluate the applications to gather feedback on the effectiveness of online learning continuously after implementation.²⁶

Providers can incorporate different types of online professional learning models based on the intended learning goals. These models are typically *synchronous*, *asynchronous*, or *hybrid*. A synchronous model uses learning activities that work in real time, while an asynchronous model allows participants to complete activities at any time. Comparatively, the hybrid model blends online learning via digital

²¹ [1] Gulamhussein, A. "Teaching the Teachers: Effective Professional Development in an Era of High Stakes Accountability." Center for Public Education, 2013. p.

17. <http://www.centerforpubliceducation.org/system/files/Professional%20Development.pdf> [2] "Raising Student Achievement Through Professional Development," Op. cit., p. 3.

²² Killion, J. "Professional Learning Plans: A Workbook for States, Districts, and Schools." Learning Forward, 2013. p. 19. <http://www.doe.in.gov/sites/default/files/turnaround-principles/professional-learning-plans-learning-forward.pdf>

²³ "Teachers Know Best: Teachers' Views on Professional Development." Bill and Melinda Gates Foundation, Op. cit., p. 10.

²⁴ Ibid., p. 11.




²⁵ "Common Core State Standards & the Transformation of Professional Development: The New Essential Elements of Professional Learning." Education First, 2014. p. 10. https://education-first.com/wp-content/uploads/2015/10/CCSS_PD_Brief_1_-_Essential_Elements_of_PD.pdf

²⁶ Killion, "'Tapping Technology's Potential.' JSD | Learning Forward, 34:1," Op. cit., p. 14.

platforms with in-person learning, incorporating both the synchronous or asynchronous models of instruction.²⁷

A synchronous online learning approach is useful for goals that require participant interactions or discussions in real time, whereas asynchronous online learning works well when goals are more learner-centered and content covers in-depth explanations or complex idea.²⁸ Hybrid learning supports a blend of both approaches to support ongoing goals allowing facilitators to create asynchronous activities for participants to complete at their own pace and then provide in-person discussion activities for participant interaction and reflection.

Types of Online Delivery Models

Type	Description	Examples
 Synchronous	Online learning happens in real time	<ul style="list-style-type: none"> ▪ Distance education courses ▪ Topic webinars ▪ Virtual coaching ▪ Teacher collaboration
 Asynchronous	Online learning activities happen at different times for different participants	<ul style="list-style-type: none"> ▪ Teacher social networks ▪ Discussion boards ▪ Self-based online learning courses ▪ Resource sharing websites
 Hybrid	Online learning activities take place in conjunction with in-person learning opportunities	<ul style="list-style-type: none"> ▪ In-person courses or workshops that require virtual collaboration or completion of online tasks between sessions

Source: Phi Delta Kappan.²⁹

Four distinct categories of online learning models help satisfy different goals and learning preferences:³⁰

- **Independent E-Learning (asynchronous):** web and computer-based training;
- **Group-Based E-Learning (synchronous):** video training, webcasts, webinars;
- **Virtual Classrooms (asynchronous and synchronous):** discussion boards, chat rooms, and electronic breakout groups; and

²⁷ Bates, M., L. Phalen, and C. Moran. "Online Professional Development: A Primer." *Phi Delta Kappan*, 2016. p. 71. <https://journals.sagepub.com/doi/full/10.1177/0031721716629662>

²⁸ Hughes, A. "Comparing Asynchronous and Synchronous Learning." *Learning Solutions Magazine*, November 26, 2014. <https://www.learningsolutionsmag.com/articles/1577/comparing-asynchronous-and-synchronous-learning>

²⁹ Figure text taken verbatim from Bates, Phalen, and Moran, Op. cit., p. 71.

³⁰ Bulleted text taken verbatim with minor adaptations from Silberman and Auerbach, Op. cit., p. 191.

- **Blended (Hybrid) Learning (asynchronous and synchronous):** E-learning combined with instructor-led classroom training.

Before providers and facilitators decide what model and category of online or hybrid learning to choose, they must consider which model of delivery works best for the situation. The figure below examines various considerations for choosing an online or hybrid program, including the location of participants, course content structure, and instructor or facilitator experience.

Considerations for E-Learning Delivery Models

Consider Independent E-Learning if:

- The participants are widely dispersed.
- The participants do not need to take training at the same time.
- The course content is very stable.
- The course uses highly structured problems to build comprehension.
- The course content is based on a transfer of consistent information.

Consider Group-Based E-Learning if:

- The participants have significant time and/or travel constraints.
- The participants will have access to required technical resource (such as individual computers, a company intranet, or video training facilities).
- The course content is based on the evaluation of information and shared experiences.
- The instructor is skilled in the use of group-assisted E-Learning technologies.

Consider a Virtual Classroom if:

- The participants are geographically diverse.
- The course content is based on less-structured problems that require application, analysis, synthesis, and evaluation.
- The instructor has personally experienced learning within a virtual classroom environment.

Consider Blended Learning if:

- The participants prefer a mix of independent and interpersonal learning experiences.
- The participants can use time saved from the classroom setting to engage in critical thinking, analysis, and application.
- The course content is based on peer interaction and group discussion.
- The instructor is experienced with both synchronous and asynchronous delivery modes.

Source: Active Training: A Handbook of Techniques, Designs, Case Examples and Tips.³¹

³¹ Figure text taken verbatim with minor modifications from Ibid., p. 204.

INDEPENDENT E-LEARNING

Independent E-learning allows participants to learn at their own pace during times that are convenient for their schedule. This allows for learning to take place individually, with no group support or interactions.³² Independent E-learning typically uses a “searchable video content management system” that permits participants to filter and identify instructions and activities based on specific search parameters and allows repeated viewings to help users understand the material.³³

Though independent E-learning typically takes the form of video-based online learning, it includes artifacts, tools, and protocols that participants use to complete activities. Experts recommend that online learning designers and facilitators “identify and implement strategies to ensure that video analysis tools, instruction in their use, and even classroom transcripts are fully integrated into the online [learning] experience, along with the artifacts themselves.”³⁴ Some examples of effective online video-based learning that facilitators can model in creating their own learning experiences include:³⁵

- Principals creating an instructional best practices video demonstrating a model lesson based on the observational rubric they will be using with teachers that year;
- Teacher leaders collaborating across departments on an ongoing video series used to share ideas for such topics as parent engagement, homework collection, and test preparations;
- Technology specialists compiling a library of tutorial videos for the devices and programs teachers and students will be expected to use along with tips on how to integrate technology in the curriculum; and
- Administrators forming partnerships with schools and districts in another location (e.g., cross-town) to create a virtual learning network.

Participant engagement during online learning can be challenging in independent, asynchronous settings. During face-to-face learning, facilitators have more flexibility to ask participants questions and reinforce new learning activities in real time, but asynchronous activities do not allow for real-time communication between the facilitator and participant, making it more difficult to ask questions or exchange ideas. Therefore, providers and facilitators must create challenging asynchronous activities that foster instructional depth and quality. Further, facilitators must create

³² Ibid., p. 192.

³³ “When Faculty Are Students: Flipping Professional Development.” Panopto Video Platform, September 13, 2018. <https://www.panopto.com/blog/when-faculty-are-students-flipping-professional-development/>

³⁴ Kowalski, Op. cit., p. 12.

³⁵ Bulleted text taken verbatim with minor adaptations from Gilchrist, L. “Videos: The New Standard for PD.” *Advancing K12*, 2015. <https://www.skyward.com/discover/blog/skyward-blogs/skyward-executive-blog/august-2015/videos-the-new-standard-for-pd>

asynchronous activities that either blend in-person reflection or encourage participant self-reflection to increase engagement.³⁶

GROUP-BASED E-LEARNING

Group-based E-learning offers training to multiple participants facilitated through an online interface. Typically, group-based E-learning requires a synchronous model where all participants simultaneously engage in training exercises despite being in different locations during their completion.³⁷ A potential downside to group-based E-learning is the lack of personalized instruction from facilitators, as this model often leverages different types of online interfaces, including webcasts, webinars, and video training in lieu of a live instructor.³⁸ Thus, facilitators and instructional designers must take steps to ensure that each participant can actively learn and engage during group-based sessions. Below are several ways in which facilitators can encourage active learning during a group-based E-learning session:³⁹

- Send an email in advance with instructions or form indicating how participants should take notes during the webcast. This guided note-taking strategy will help to channel listeners' thoughts and provide clues to key learning points.
- Interrupt the flow of prepared remarks with on-the-spot questions from the presenter to the participants. To increase the challenge and make sure everyone is paying attention, address specific listeners by name.
- Offer a panel of speakers on a webcast to provide differing perspectives on a controversial topic. Model your webcast after a radio call-in show, in which participants can ask questions of speakers with very different viewpoints.

VIRTUAL CLASSROOMS

Virtual classrooms incorporate software programs that support different methods of course instruction to mimic a real classroom environment.⁴⁰ Virtual classrooms can support synchronous tools like online chat rooms and asynchronous tools like discussion boards to maximize participation. Facilitators should stray away from “tedious slide or text presentations” during virtual classroom sessions, as these practices do not promote active engagement.⁴¹ Further, facilitators should use the following ideas to promote active engagement in virtual classrooms:⁴²

- Keep courses focused on thinking of learning objectives first and delivery tools second. Design online courses based on what makes the most sense for the content, not on technical tools.
- Use asynchronous discussion boards to exchange ideas on provocative questions, case studies, and brainstorming sessions.

³⁶ Kowalski, Op. cit., p. 12.

³⁷ Silberman and Auerbach, Op. cit., p. 195.

³⁸ Ibid.

³⁹ Bulleted text quoted verbatim from Ibid., p. 196.

⁴⁰ Ibid., p. 199.

⁴¹ Ibid., p. 200.

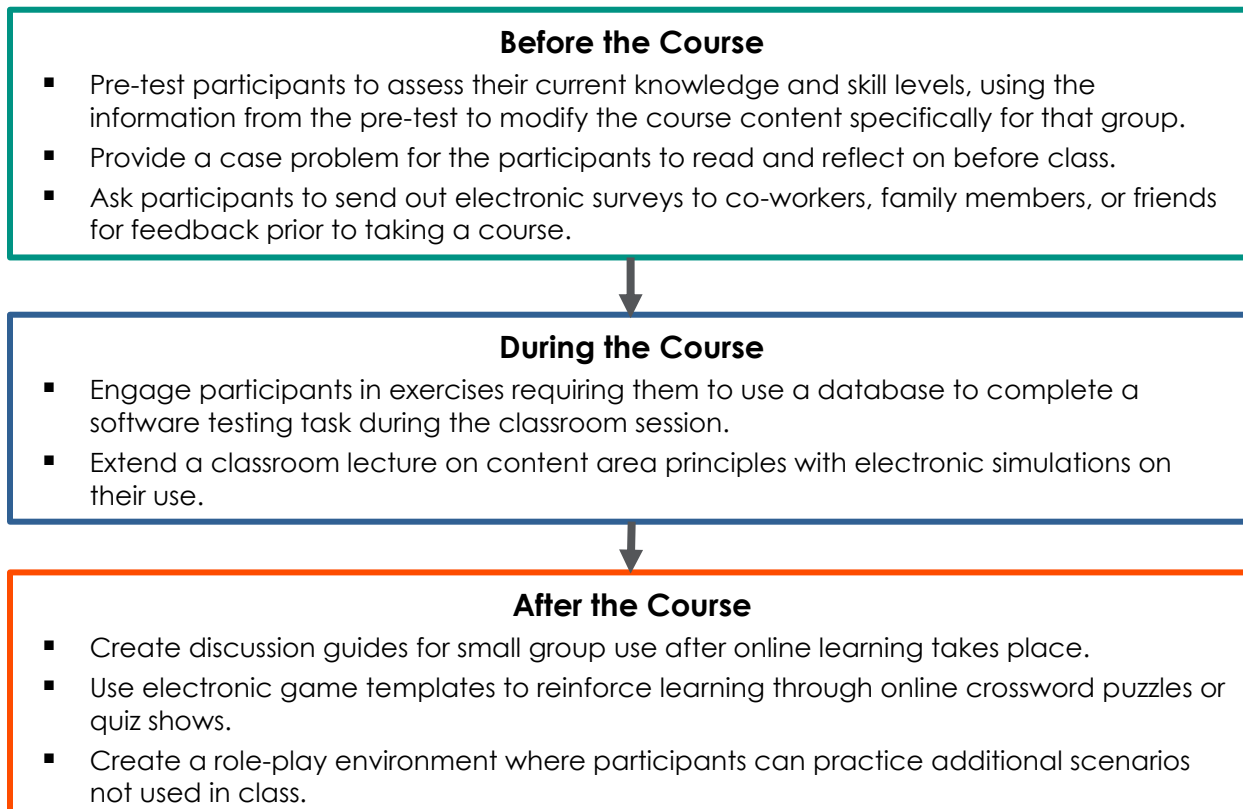
⁴² Bulleted text taken verbatim from Ibid., pp. 200-201.

- Create virtual teams that work together in synchronous mode to search for information, clarify challenging data, answer discussion questions, and solve problems.
- Maximize understanding by including directions for all synchronous activities and exercises in a participant guide. Read the directions from the guide aloud and encourage clarifying questions before beginning any exercise.
- Reduce lecture time by sending out articles for participants to read in advance, using “live and online” time to answer questions about the article in a chat room.

BLENDING (HYBRID) LEARNING

A blended, or hybrid, learning approach mixes different online delivery methods with traditional face-to-face instruction.⁴³ Facilitators can integrate practices from the other online methods to provide instructional content, evaluate performance, and deliver individual participant feedback. Then, facilitators can spend time in face-to-face collaborative group discussions to provide additional instruction and feedback.⁴⁴ Facilitators can use the practices listed below to help promote active learning and participation.

Suggested Strategies for Blended Learning



Source: Active Training: A Handbook of Techniques, Designs, Case Examples and Tips.⁴⁵

⁴³ Ibid., p. 201.

⁴⁴ Ibid.


⁴⁵ Figure text quoted verbatim with minor adaptations from Ibid., p. 202.

PROVIDING SUPPORT BEFORE TRAINING

Online and hybrid providers must recognize what types of technology resources and online applications districts and schools can access and use.⁴⁶ To achieve optimal results, districts and schools must possess adequate time and resources for online learning training. While many online learning experiences may function independently, providers and facilitators must coordinate with schools to ensure their infrastructure can fully support online platforms. Specifically, online learning designers and providers must work to “[d]evelop cross-program, school, district, and state integration of resources for professional learning to maximize benefits, increase efficiency and return on investment, and expand use.”⁴⁷

Providers, districts, and schools must also work together to strengthen online technical support to ensure participants with different levels of technical experience can operate online applications.⁴⁸ Before administering any online learning, providers should be able to answer the questions outlined below.

Key Considerations Before Delivering Online Learning



- Are there enough computers or tablets for learners to complete training? Will they actually be available for E-Learning, or will the core functions of the school always take precedence?
- Are computers or tablets in a space that allows the learner to concentrate, or are they placed at busy desks or stations where interruptions are bound to derail learning?
- Is the technology compatible with provided offerings? If the district or school is running an outdated browser to maintain compatibility with legacy systems, will offerings render correctly?
- Does the district or school provide learners with technical support? If so, will the help desk actually support E-Learning offerings, or are they limited to supporting core systems?
- Does the administration provide learners with the necessary time to complete training, or are they expected to magically create more time in the day to cram in learning?

Source: ELearning Industry.⁴⁹

Likewise, providers must ensure that participants are fully educated on how to use online interfaces. Online interaction typically requires initial training and support for learners to build an adequate understanding of specific platforms' functionality. While some participants who are more experienced with technology may only need

⁴⁶ Kowalski, Op. cit., p. 6..

⁴⁷ Killion, “Tapping Technology’s Potential.’ JSD | Learning Forward, 34:1,” Op. cit., pp. 14, 16.

⁴⁸ Kowalski, Op. cit., p. 6.

⁴⁹ Figure text taken verbatim with minor adaptations from Butina, B. “E-Learning For Continuing Professional Development: 6 Best Practices.” ELearning Industry, March 1, 2017. <https://elearningindustry.com/continuing-professional-development-elearning-6-best-practices>

limited remote support, participants with less technical experience may require both online and onsite support.⁵⁰

For hybrid online learning, pre-session work helps to establish a greater understanding of what in-person sessions will entail, creating a common foundation from which facilitators can present more in-depth information on the topic. If the online or hybrid session requires pre-session work, incorporating interfaces and activities, such as completion quizzes and questionnaires, can promote accountability and gauge participants' background knowledge. These pre-session tasks also allow facilitators to personalize sessions based on participants' initial feedback.⁵¹

CREATING OPPORTUNITIES FOR COLLABORATION AND REFLECTION

FACILITATING INTERACTIVE PARTICIPATION

A well-designed online or hybrid online learning system includes features and tools that promote greater participant engagement and interactivity of learning tasks.⁵²

Online and hybrid learning models allow educators to engage in activities differently than traditional face-to-face learning, as continuous access through web-based mediums enables teachers to review developmental resources to learn at any time and at their own pace. Likewise, features such as discussion boards, interactive documents, open forums, and online journals allow participants to interact with each other to strengthen the impacts of learning exercises on their teaching practice.⁵³

Facilitators and designers of online and hybrid professional learning should ensure consistent opportunities are available for all participants to actively engage with content. Notably, this poses one of the greatest challenges that districts face during professional development more generally, though professional learning is more successful when it “allow[s] teachers to learn the concept in varied, *active* ways.”⁵⁴ Several strategies, as outlined on the next page, help strengthen active professional learning engagement.

⁵⁰ Killion, “‘Tapping Technology’s Potential.’ JSD | Learning Forward, 34:1,” Op. cit., p. 14.

⁵¹ “When Faculty Are Students: Flipping Professional Development,” Op. cit.

⁵² Kowalski, Op. cit., p. 4.

⁵³ Ibid.

⁵⁴ Gulamhussein, Op. cit., p. 16.

Strategies to Increase the Engagement Level of Participants

Engagement Strategies

- Make sure the course content is well-suited to an independent learning format.
- Build interest and curiosity by beginning with an opening question, a lead-off story or visual, or a case problem.
- Maximize understanding and retention by presenting major points upfront, providing user-friendly examples and analogies, and interesting visuals.
- Intersperse text with activities such as quizzes, spot challenges, and brief exercises to keep learners mentally alert.
- Recommend that participants set aside thirty to forty-five minutes for each session to avoid disengagement and boredom.
- Reinforce learning by asking participants to recap major points, consider ways to apply material, or solve case problems.

Source: Active Training: A Handbook of Techniques, Designs, Case Examples and Tips.⁵⁵



Practical Example: Visual Access to Mathematics (VAM)

VAM is a hybrid professional learning model that administers a year-long program for Grade 6-8 mathematics educators whose students are English learners (ELs).⁵⁶ The program provides educators with greater understanding of visual representations to help students understand concepts like rational numbers and ratios. Participants take part in a 30-hour in-person summer institute and 16 two-hour online sessions throughout the school year.⁵⁷

The online courses use both synchronous and asynchronous activities to support constant learning, engagement, and collaboration. Some of the online activities include:⁵⁸

Asynchronous Activities:

- Mathematics tasks exploration
- Analysis of student work
- Reflection on instruction

Synchronous Activities:

- Small-group video conferencing
- Interactive whiteboards

VAM also provides continuous feedback to participants, creating additional opportunities for them to learn how to incorporate visual representations in a range of mathematics topics for EL students.⁵⁹

⁵⁵ Figure text taken verbatim with minor adaptations from Silberman and Auerbach, Op. cit., p. 195.

⁵⁶ "Visual Access to Mathematics: Information." Visual Access to Mathematics. <http://courses.vam.edc.org/r/information.html>

⁵⁷ "Visual Access to Mathematics: Professional Development for Teachers of English Learners." Community for Advancing Discovery Research in Education, 2018. <http://www.cadrek12.org/projects/visual-access-mathematics-professional-development-teachers-english-learners>

⁵⁸ Kowalski, Op. cit., p. 10.

⁵⁹ "Visual Access to Mathematics: Professional Development for Teachers of English Learners," Op. cit.

Online and hybrid learning activities may foster greater privacy and anonymity for educators to comment or ask a question that they would typically not ask in a traditional face-to-face session.⁶⁰ However, visual and verbal communication cues are more difficult to relay in online platforms, and the corresponding loss of these nonverbal cues may generate communication challenges between facilitators and participants, leading to less engagement or productive learning. Thus, facilitators should consider methods to balance these inherent attributes of digital learning platforms.⁶¹

Online and hybrid learning facilitators must establish a safe, comfortable, and open environment throughout the learning process. Garnering trust in online learning settings is not easy. Thus, to establish trust between facilitators and participants, facilitators can use initial interactions – either face-to-face or online video introductions – that reinforce the goals and objectives of the program.⁶² Additionally, holding face-to-face meetings during the half-way points of ongoing learning reconnects stakeholders to support ongoing participation.⁶³

FOSTERING COLLABORATION

Districts and schools can combine elements of online learning and school-based collaboration to maximize learning outcomes.⁶⁴ Professional development is most effective when it includes collaborative “participation of teachers from the same school, department, or grade.”⁶⁵ When educators can discuss new practices and techniques with one another, they are more likely to implement new learning techniques, promoting an attitude of “shared responsibility” for student achievement among colleagues, which can help sustain the implementation of new pedagogies and contribute to program success.⁶⁶



Practical Example: PlantingScience: Digging Deeper

PlantingScience is a hybrid professional learning program that brings together high school science teachers and career scientists to collaborate on ways to conduct investigative science experiments with high school students. Initially, teachers and scientists take part in a face-to-face workshop to enhance their understanding of STEM classroom instruction and investigative experiment design. Members then participate in an online learning community that helps to instruct students during the fall semester. During the academic year, PlantingScience participants complete a series

⁶⁰ Kowalski, Op. cit., p. 5.

⁶¹ Ibid., pp. 5-6.

⁶² Ibid., p. 9.

⁶³ Ibid., p. 7.

⁶⁴ Bates, Phalen, and Moran, Op. cit., p. 73.

⁶⁵ “Creating the Context and Employing Best Practices for Teacher Professional Development: A Brief Review of Recent Research.” West Virginia Department of Education, 2013.p. 7. <https://files.eric.ed.gov/fulltext/ED565464.pdf>

⁶⁶ “Raising Student Achievement Through Professional Development,” Op. cit., p. 2.

through online reflection activities and webinars to evaluate teaching practices. These evaluations help “validate methods and protocols that not only prepare future scientists for plant biology challenges facing the planet, but that are also relevant for developing teacher and student expertise in inquiry-based science in any STEM discipline.”⁶⁷

Notably, collaboration platforms like Google Hangouts, Adobe Connect, and Zoom help participants exchange information.⁶⁸ Additionally, online learning can leverage social media to form educator professional learning networks. Both interactive online and social media platforms enable educators to develop networks to share resources and expertise regardless of geography. Furthermore, online settings establish additional communication avenues for teachers teaching the same content or grade using the same pedagogies in their classrooms. Consequently, teachers can learn from educators with whom they would not be able to interact with in person and who may possess more experience or novel strategies that they can adapt for their own students.⁶⁹

FOLLOWING UP WITH TARGETED SUPPORT

Sustained professional development - including online and hybrid formats – should include follow-up support through coaching, reflection, or collaboration as educators implement new teaching methods and knowledge in their classrooms.⁷⁰ By contrast, one-time professional learning programs or online learning sessions do not allow teachers time to practice and learn from implementing new knowledge in their class, which is where the transfer from learning the skill to effectively using it occurs. Notably, research indicates that to master a new teaching strategy and successfully implement it in class could require up to 50 hours of instruction, practice, and coaching, necessitating follow-up supports to guarantee participants implement new skills and techniques with fidelity.⁷¹

REFLECTION

Reflection on content and work done within online or hybrid learning supports educators’ developing competencies and overall professional learning and growth. As such, providers and facilitators should offer participants chances to ask questions after activities or exercises to further reflect and strengthen their comprehension. Using various artifacts (e.g., student work samples, videos of practice) during interactive activities can help to support reflection questions or concerns. Online and hybrid learning can also incorporate reflection activities such as “interactive learning

⁶⁷ “PlantingScience: Digging Deeper Together.” BSCS Science Learning. <https://bscs.org/plantingscience-digging-deeper-together>

⁶⁸ Kowalski, Op. cit., p. 10.

⁶⁹ Burns, “Distance Education for Teacher Training: Modes, Models, and Methods,” Op. cit., p. 95.

⁷⁰ Gulamhussein, Op. cit., p. 21.

⁷¹ Ibid., p. 10.

experiences, animations, readings and analysis of student work or discourse” to advance teachers’ developing proficiencies with new content and skills.⁷²

Therefore, facilitators should “consider structuring reflections and discussions around more neutral artifacts.”⁷³ During open discussions between participants, it is important for facilitators to consider the goal of the discussion or reflection opportunity and weigh the benefits of discussing neutral artifacts like student work examples versus high-risk artifacts like teacher classroom strategies. Discussions should reflect day-to-day principles that can be examined to support ongoing reflection and analysis.⁷⁴



Practical Example: Energy: A Multidisciplinary Approach for Teachers (EMAT)

EMAT is an online professional learning course to help educators better conceptualize, reflect on, and frame energy concepts to teach high school students more effectively.⁷⁵ Educators are given access to a variety of resources to further challenge and support students’ understandings of energy concepts. Specifically, the course enables educators to access various asynchronous activities for free, including:⁷⁶

- **Animations:** Short animated videos that showcase important science and energy concepts.
- **Interactive Learning Experiences:** Interactive and fun opportunities to explore scientific ideas related to energy.
- **Classroom Videos:** Recordings of how other teachers have engaged their students in teaching complex ideas related to energy.

Embedded interactive learning experiences allow educators and students to manipulate variables in an experiment and observe the reactions. They also give educators the ability to showcase experiments that are traditionally too time-consuming or dangerous to perform in a classroom setting. For example, the “Electron Ejection” allows viewers to “investigate the photoelectric effect, including the relationships between frequency and brightness of light to the type of metal used, whether or not a metal ejects electrons under various conditions, and the speed of the electrons.”⁷⁷

Creating an environment characterized by thorough discussions is difficult in an online environment, especially when using asynchronous models.⁷⁸ However, providers and facilitators can schedule enough time to facilitate ample participant reflection and discussion throughout the academic year and professional learning

⁷² Kowalski, Op. cit., p. 11.

⁷³ Ibid., p. 13.

⁷⁴ Ibid.

⁷⁵ “Teaching Energy Concepts? New Online Course and Media for Science Teachers and Their Students.” BSCS Science Learning. <https://bscs.org/teaching-energy-concepts>

⁷⁶ Bulleted list taken verbatim with minor adaptations from Ibid.

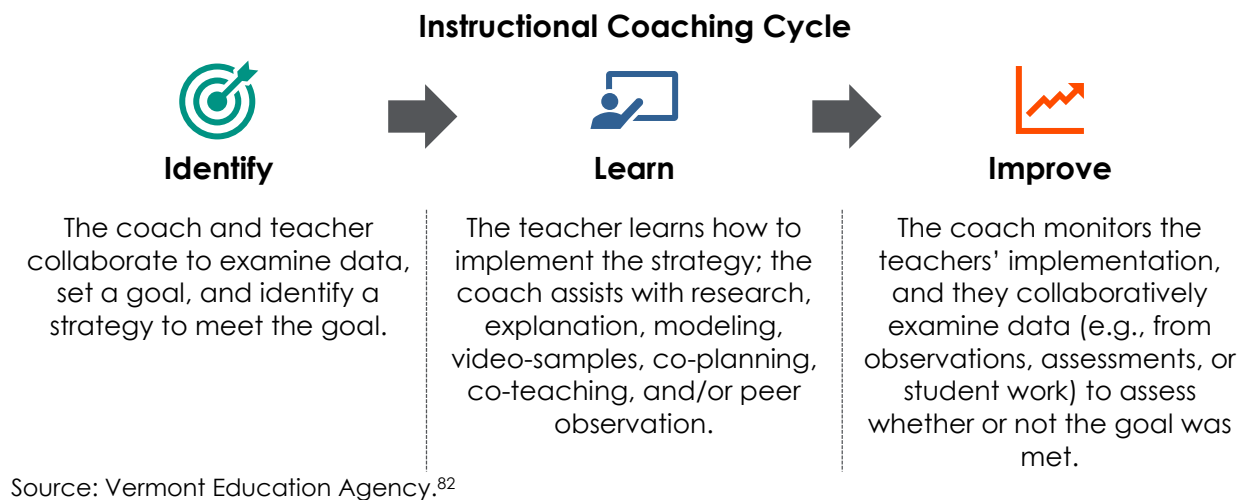
⁷⁷ “Interactives.” BSCS Science Learning. <https://bscs.org/interactives>

⁷⁸ Kowalski, Op. cit., p. 14.

sequence. Hosting sessions throughout the year creates opportunities for participants to learn new strategies and methods, apply them to their classrooms, and share their experiences with facilitators and peers.⁷⁹

COACHING

Hybrid professional learning models can also afford instructional coaches the opportunity to provide follow-up implementation support as part of a broader professional development initiative.⁸⁰ According to a 2014 Bill and Melinda Gates Foundation study, effective coaching is “ongoing and delivered by experienced content experts and individuals well trained at providing feedback.”⁸¹ Similar to in-person coaching and mentoring sequences, coaching within hybrid professional learning models should follow the recommended coaching cycle of identifying, learning, and adapting.



⁷⁹ Ibid.

⁸⁰ “Common Core State Standards & the Transformation of Professional Development: The New Essential Elements of Professional Learning,” Op. cit., p. 10.

⁸¹ “*Teachers Know Best: Teachers’ Views on Professional Development.*” Bill and Melinda Gates Foundation, Op. cit., p. 7.

⁸² Figure text taken verbatim from “Coaching as Professional Learning: Guidelines for Implementing Effective Coaching Systems.” Vermont Agency of Education, 2017. P. 6. https://education.vermont.gov/sites/aoe/files/documents/edu-coaching-as-professional-learning_0.pdf

TOP 5 CONSIDERATIONS FOR ONLINE PROFESSIONAL LEARNING PLATFORMS

A Checklist for Leaders



Accessible Technology

Online learning platforms should utilize technology that is easy to operate and learn. Users should be able to navigate the site efficiently and engage with instructional materials without technical difficulties to better focus on learning.

Does the online professional learning platform have...

- A clear and simple interface that is easy to use and navigate?
- Technical assistance structure such as 24-hour IT support, FAQs, or help guides?
- Tutorials for first-time users or for refreshing current users' operation skills?

Does the online professional learning platform have...

- Quick access to materials, resources, lectures, slideshows, and definitions?
- A "virtual classroom" with an online whiteboard, live recording software, screen mirroring, two-way notetaking, and discussion boards?
- Features for learners to take notes, highlight reading materials, mind-map, and save work for future access?

Authentic Learning Experience



Although lessons are completed online through these platforms, they should still give users an authentic experience reminiscent of in-person instruction, while also taking full advantage of the resources available on the internet.

Communication & Collaboration

Creating an authentic learning environment relies on the online learning platform's facilitation of communication and collaboration among learners and instructors. Online learning environments can enrich the learning experience by helping learners work in groups.

Does the online professional learning platform have...

- Live-streamed, interactive video chatting capabilities for real-time communication events?
- Online forums, chat rooms, discussion boards, and messaging features that facilitate teamwork and small group discussions?
- Portals for learners to communicate with their instructors directly to ask questions and get feedback?

Does the online professional learning platform have...

- Accessible presentation, video, and streaming options to communicate engaging content?
- Gamification capabilities that allows learners to experience instructional content through interactive games?
- Multiple, frequent touchpoints, so users are encouraged to actively interact with content and maintain attention throughout the lesson?

Interactive & Engaging Media



Authentic and collaborative learning environments should facilitate active engagement with the material. Learners often complete online lessons solitarily, so online learning platforms should provide a variety of media and interactive stimuli to make the material exciting.

Data Collection & Analysis

Assessments are engaging and interactive measurement tools that help course instructors collect meaningful growth data and monitor learners' needs. Online learning platforms should thus provide assessment tools that help instructors measure progress and participation.

Does the online professional learning platform have...

- Customizable assessment functions that allow instructors to input their own questions, formats, and metrics?
- Automatic and instant score reports that learners and instructors can view after each assessment?
- Analytic functions that pull assessment and participation data, save the data in organized databases, and generate meaningful analyses?

Checklist Sources

Mupinga, D.M., R.T. Nora, and D.C. Yaw. "The Learning Styles, Expectations, and Needs of Online Students." *College Teaching*, 54:1, 2006. p. 187. <http://www.tandfonline.com/doi/abs/10.3200/CTCH.54.1.185-189>

"The 10 Essential Features of an Ideal Online Learning Delivery Platform." Your Training Edge®, 2018. <https://www.yourtrainingedge.com/the-10-essential-features-of-an-ideal-online-learning-deliveryplatform/>

Zhang, W. "Entering the 3rd Generation of E-Learning: Characteristics and Strategies." *Journal of Educational Technology Development and Exchange*, 6:1, 2013. <http://aquila.usm.edu/jetde/vol6/iss1/2>

Alexander, M. "4 Key Features of an Effective Online Learning Program." General Assembly Blog, 2014. <https://generalassemb.ly/blog/4-key-features-of-an-effective-online-learning-program/>

"Characteristics of Effective Online Assignments." Brown University | The Harriet W. Sheridan Center for Teaching and Learning. <https://www.brown.edu/sheridan/teaching-learning-resources/teachingresources/course-design/enhancing-student-learning-technology/effective-online-assignments>

Dietz, J. "6 Key Features of the Best Learning Management Systems." Higher Logic, 2017. <https://blog.higherlogic.com/6-key-features-of-the-best-learning-management-systems>