Teacher Ready
Edtech Product Evaluation Guide

Table of Contents

How do you distinguish between edtech products that are built well vs. those that are not? Which products are built in a way that naturally aligns with how people learn best? Which edtech products best help teachers do the work of teaching?

These questions are foundational in the edtech selection and buying process, and the need for valid, reliable methods of product evaluation is universal across educational organizations at all levels.

Through the Teacher Ready project, ISTE is helping educators and leaders across the country find well-built digital products in order to generate the best learning impacts. This product evaluation guide is one resource to aid teachers and edtech decision-makers in finding those "best" products.

About Teacher Ready

The objective of ISTE's Teacher Ready project is to *develop, validate, and disseminate a framework for product usability that can be amplified into meaningful market signals for determining the extent to which an educational technology product is "teacher-ready" —* in other words, relatively easy to use for any teacher, and enhances the teaching and learning experience by making instruction more efficient, effective, and inclusive. In short, Teacher Ready aims to help edtech decision-makers and teachers evaluate and select edtech products that are easy to use and effectively help students learn.

Who is this guide for, and what does it do?

The Teacher Ready framework is designed to assist edtech decision-makers, educators, and even parents in deciding which edtech products will best serve them and their students in the classroom and at home. At its core, the framework is about product usability, including technical usability (how well a product operates) and pedagogical usability (how effectively the product facilitates learning). The framework covers five "dimensions" or areas/themes that detail a specific area of edtech product usability:

1. **User interface and agency:** The design of the product interface and user experience helps teachers quickly and reliably achieve instructional goals.
2. **Learning design:** The product has features that promote design and customization of learning activities in ways that align with research-based best practices, including those rooted in learning sciences.
3. **Digital pedagogy:** The product is designed to support the development of digital age learning skills, capacities, and knowledge.
4. **Inclusivity:** The product helps teachers provide learning experiences that are relevant to students of many cultures, backgrounds, and abilities, and support learner motivation and agency in the learning process.
5. **Assessment and data:** The product uses assessments that generate data to inform teachers about student knowledge and provide students feedback.

Each dimension includes:

- **Definition:** An explanation of what the dimension is.
- **Student theme:** How a student might ask or talk about it.
- **Teacher theme:** How a teacher or edtech decision-maker might ask about it.
- **Provider theme:** How a product provider (company) might ask about it.
- **Indicators:** Features of the product related to the dimension that can be rated by teachers, other district stakeholders, and product evaluators.
    a. *Indicator label:* The title of the indicator.
    b. *Indicator definition:* The definition of the indicator.
    c. *Look-fors:* Observable examples of indicators.

The goal of this guide is to help edtech decision-makers, as well as leaders and teachers, validly and reliably evaluate edtech products so that they select the high-quality products that will lead to the best teaching and learning experiences. As you explore a trial version or sandbox account for a new product, score it against each dimension. When you're done scoring, you'll have a clear picture of how well the product is built and how its features align to rigorous, research-based practices about how people learn most effectively. You can then compare your ratings with those of your colleagues to see where you agreed or disagreed to guide product selection. You can also use your ratings to focus conversations with product providers on the most essential questions about a product's build and fit for the teachers and students in your schools.

Glossary

Product usability is about the degree to which a tool helps a user meet a need or accomplish a task, including achieving a learning objective. In unpacking the framework into indicators and look-fors, you'll find several terms that are defined below. The definitions of these terms come from several fields including instructional design, user experience design, and the learning sciences. These terms and the framework in general are based on resources found in the references section of this document.

Accessibility: Accessibility is the degree to which a product supports and accommodates diverse learner needs and preferences in multiple learning environments. Although accessibility considerations are grounded in accommodating learners with disabilities, such features (e.g., high-contrast text) generally benefit all users and are generally covered under Universal Design for Learning (or UDL) guidelines (although the two are not synonymous).

Activities: The assessments and/or interactive elements requiring student response and interaction. Distinguished from "content" here, although edtech curriculum products often quickly switch between or intertwine content and activities.

Authentic learning: Experiential learning based on students' real-world experiences and interests, current issues, and/or real data.

Breadcrumb trail: A navigation tool that allows a user to see where the current page is in relation to the website's hierarchy.

Content: The information the product provides. Content can be any format or media type such as text, images, audio, simulation, or video.

Design thinking: A specific methodology for problem-solving, including a prescribed series of steps for designing a solution.

Digital curriculum products: Products that provide content (usually academic instruction) as well as other functionality (such as activities). These curriculum products are distinguished from "platforms" that provide functionality but entirely lack content.

Digital identity: How an individual is represented online in the public domain, based on activities, connections, or tagging. Examples include social media posts, photos, public online comments/reviews, awareness and monitoring of how others are depicting you online.

Digital pedagogy: The use of digital tools in ways aligned to best practices in pedagogy to support student mastery of content knowledge, problem-solving, critical thinking, effective communication, collaboration, and self-direction.

Formative assessment product: A formative assessment product is an edtech product that helps teachers create, distribute, and review interactive experiences to understand what learners know and don't yet know; often, this is a "quiz."

Learning episode: A time-based experience where teachers and students work together on the same learning objective. A "lesson" is a common example.

Learning sciences: The learning sciences make up an interdisciplinary field of research with the common goal of studying and understanding how people learn, and how to apply this understanding to the design and evaluation of learning experiences. Key fields include cognitive psychology, educational psychology, human development, linguistics, and social psychology.

Online safety and etiquette: Positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.

Pedagogical usability: A specific kind of usability focused on how well the product facilitates the learning process, including meeting desired learning objectives.

Platform: A type of edtech product that does not include content. Instead, platforms only include functionality and related features. Examples of "platforms" include learning management systems, student information systems, and assessment applications that rely on teachers to create structure, content, and assessment items.

Product: An educational technology (edtech) application that can be purchased by an educational organization or individual. Digital curriculum products provide content as well as other functionality (such as interactive activities), while platform products solely provide functionality with no or very limited content.

Technical usability: The traditional type of usability focused on ease of interaction with the product. Also, the degree to which a tool helps the user meet a need or accomplish a task, including achieving a learning objective.

Usability: Synonymous with "ease of use," this refers to the degree to which a product helps the user meet a need or accomplish a task, such as a teacher using an edtech product to meet learning objectives with students. Edtech usability includes both pedagogical usability (how well a product facilitates the learning process, including instructional design) as well as technical usability (the ease of use and interaction with a product, including user interface design).

User agency: The ability of product users to easily navigate and use a product in ways that meet their goals. In other words, the product affordances, abilities, and features that users have at their disposal.

User interface (UI): The means by which a person and technology system interact. This can include screens, a mouse, a keyboard, as well as interaction with software applications.

Web Content Accessibility Guidelines (WCAG): The commonly accepted accessibility standard for web content today. The guidelines emphasize four content principles: perceivable, operable, understandable, and robust.

Instructions

This evaluation guide includes a scoring sheet that can be used as a worksheet to evaluate or "rate" an edtech product as you explore a trial version, sandbox account, or even watch a demo video. **Here's how to use it:**

1. **Print the scoring sheet.** Print the scoring sheet included in this guide and keep it in front of you while you review the product. You may also want to print this entire guide, as it contains important details about each indicator – it may be helpful to have those in front of you "on paper" as you explore a product.

2. **Select a product sample.** Decide *what* in the product you're going to look at in order to evaluate it. If you're working with colleagues who will all score the product, make sure that everyone is looking at the same product pages, content, activities, and features so that you're all scoring the *same product sample*. If different people are looking at different pages, you shouldn't necessarily expect everyone's scores to align.

3. **Score the product.** On your scoring sheet, enter the name of the product and your name. Then, use the scoring sheet to evaluate the product sample based on your best understanding of the criteria. To what degree does the product meet each indicator? *Choose the green "check" if you think the product is meeting over 50% of the look-fors, and choose the red "x" if the product does not meet expectations for a majority of the look-fors.* Leave both the green check and red "x" unmarked if you are not evaluating the product against the selected indicator.

   a. The green check circle indicates that the product "meets expectations" for an indicator. If you believe that the product is meeting the expectations described by a majority (over 50%) of the look-fors associated with that indicator, then fill in the green check.

   b. The red "x" indicates that the product "does not meet expectations" for a majority of the look-fors associated with an indicator. If you believe that the product is not meeting the expectations described by over 50% of the relevant look-fors, then fill in the circle.

   c. If you are not evaluating the product against an indicator, then leave both the green check and red "x" unmarked.

   d. Don't be shy about assigning a rating of "does not meet" if you don't see evidence that the product is meeting expectations for that indicator. There might be a tendency to think, "Oh, I guess this is good enough." But if you don't see evidence that the product is meeting the expectations set forth in the indicator and relevant look-fors, choose the red "x", assigning a rating of does not meet expectations.

e. Scoring is necessarily subjective. Your goal is not to "score it perfectly" but rather, take a close look at the product, evaluate the product, and compare your ratings with those of your colleagues so that, as a team, you come to a rigorous conclusion about the product's quality. So, your scoring doesn't have to be "perfect" but, instead, informative.

4. **Summarize your assessment.** Once you're done assigning ratings for each indicator, tally up the total score. For each indicator, assign a score of one (1) if a product met expectations and a score of negative one (-1) if the product did not meet expectations. If you did not score the product against an indicator, assign a score of zero (0). Next, add up the scores! A total score of less than zero may indicate that the product isn't built very well.

5. **Talk about it!** Once your product assessment is done, use your results to inform conversations with colleagues and edtech providers. Talk with other educators and leaders at your school or district about how they scored the product. You may even want to try sitting down and scoring a product at the same time in the same room. Scoring the product may raise questions that are worth asking a product provider; if that happens, you can be confident that your questions are grounded in proven research about how people learn, user experience design, and product usability. This can really take conversations with providers to the next level!

You can use this Teacher Ready scoring guide to rate different types of products. In particular, the framework and scoring method was tested with digital curriculum, formative assessment, and platform products. The user testing confirmed that some indicators are more important than others for certain product types, and the "Alignment map" describes that alignment. The map shows which indicators are considered to be "required" for a product type compared to the indicators that are "optional" (or, nice to have). When you're scoring a product, consider the alignment map to offer you recommendations on which indicators might matter most for the type of product you're evaluating.

Scoring Criteria

DIMENSION 1 User Interface and Agency

Definition: The design of the product interface and user experience helps teachers quickly and reliably achieve instructional goals. This dimension includes features related to interface design, learnability, navigation, maximizing time on task, control over actions, and general usability.

Student Voice = "Is this product easy to use? Can I quickly find what I need to complete assigned learning activities and be successful in meeting my learning goals?"

Teacher voice = "Is this product easy to use? Can I quickly find what I need? Is everything I need a click or two away?"

Provider voice = "Will teachers using this product say it is easy to understand and use, and designed for exactly what they need? Or will they say that it takes too much time and effort to get what they need? Or that they can't find what they need at all?"

INDICATORS

1.1 Value Proposition
The product clearly demonstrates how it will improve the teaching workflow and help meet instructional needs efficiently and effectively.

Look-fors = (a) Obvious benefit to everyday work of teachers; (b) clear statement or demonstration of the product's educational goals and its value for teachers.

1.2 Login
The product provides a login process for teachers and students that is easy to find and complete.

Look-fors = (a) Login page is easy to find (from home page or via short link); (b) login screen features a clean UI and obvious login actions; the product offers stock sign-on functionality through other apps (e.g. login with "this other app" account); (c) integration with single sign on (SSO) products is available.

1.3 Navigation
The product makes it easy for users to understand their location within the product, how to quickly find what they need, and allows for easy recovery from errors.

Look-fors = (a) Navigation menu is always easy to find with options that describe key product functions or areas; (b) product menu titles are easy to understand; (c) "breadcrumb trails" are visible; (d) obvious "undo" process for error recovery.

1.4 Interface Design
The product user interface organizes all elements (buttons, links, etc.) in a way so that their arrangement makes intuitive sense to users, and elements are consistent, actionable, and add value to the experience.

Look-fors = (a) User interface buttons are sized appropriately; (b) the right or most important buttons are easy to find; (c) the most important elements are prominent (e.g. listed at the top of a page or section); (d) minor features are hidden or reduced so that they don't distract from the most important ones.

1.5 Discoverability

The product makes it easy for teachers to find, preview, and filter content and discover product features.

Look-fors = (a) Teachers and other users can quickly find content or functions they're looking for (can include markers or sections in videos); (b) search functionality is easy to find and works well; (c) the product includes embedded filtering functionality for browsing content and/or product features.

1.6 Student View

The product makes it easy for teachers to see, as needed and on demand, exactly what students see when engaging with the product.

Look-fors = (a) Ability to see what students see at any time; (b) button to quickly switch between available roles (e.g. teacher and student); (c) ability to update or change content selections and then immediately understand the impact for a student user.

1.7 Customizable Interface

The product provides a collection of adjustable settings for teachers to customize controls, features, and content.

Look-fors = (a) Movable window or section blocks; (b) customized dashboards; (c) "compact" vs. "spacious" views; (d) arrangement by concept section (e.g. unit), time (e.g. calendar), or other parameters.

1.8 Support

The product provides teachers easy access to technical support, including help resources and tutorials, customer service, and embedded help functions as appropriate.

Look-fors = (a) Technical support (including help videos) is easy to find inside the product and/or through the product website; (b) support documentation and resources are broken up into small, clearly labeled chunks; (c) support library offers search and/or filter functionality; (d) there is on-demand (e.g. submit a ticket) or live chat support for teachers or other users.

1.9 Interoperability

The product clearly demonstrates the extent to which it is interoperable – i.e. integrates with other products in use at the school and district – including account syncs and data sharing.

Look-fors = (a) The product provides a clear list of other products it's already interoperable with on its website (e.g. an "Integrations" page) or inside the product; (b) an interoperability report specifies what types of data port to/from other apps; (c) the product page shows what select (i.e. at least one) integrations look like in practice.

1.10 Data Privacy

The product provider clearly documents its data privacy priorities and practices, explaining them in language that is easy to understand.

Look-fors = (a) The product website publishes a clear statement on how it stores and uses student data; (b) this statement is easy to find on the website, such as on a dedicated page; (c) the product showcases a data privacy certification and/or cites how it meets various data privacy recommendations and requirements (e.g. GDPR).

DIMENSION 2 Learning Design

Definition: The product has features that exhibit and promote design and customization of learning episodes in ways that align with research-based best practices, including those rooted in the learning sciences.

Student Voice = "Does this product help me learn? Is all the important information easy to find? Does this product help me meet my learning goals and be successful in school?"

Teacher voice = "Does this product help my students efficiently reach their learning goals? Is it designed with research on best practices in teaching and learning in mind? Does this product reflect principles of instructional design?"

Provider voice = "Did we create features in our product that align with best practices in teaching and learning? What research about how people learn informed the product design? Did we create a product that models valid instructional design principles?"

INDICATORS

2.1 Learning Outcomes
The product clearly demonstrates alignment of learning outcomes with instructional standards, content, and activities for both teachers and students.

Look-fors = (a) Learning outcomes are regularly displayed at the start of and/or throughout learning episodes; (b) connections between learning outcomes, content, and activities are explicit in learning episodes and lessons.

2.2 Student Goals
The product helps students set personal learning goals, and reflect on progress towards those goals or product-provided learning outcomes.

Look-fors = (a) Regular opportunities for students to explicitly state personal learning goals; activities that encourage students to align personal learning goals with product-provided learning outcomes; (b) activities that require students to reflect on their learning process and progress toward learning goals.

2.3 Chunking
The product presents content within an activity, lesson, or page in chunks (pieces, bites, modules, etc.) that are appropriate for the students and the topic.

Look-fors = (a) Content and/or activities are appropriate in length and depth for the age and ability of the product's intended students; (b) in general, no presence of long "run on" pages, sections, or videos that could effectively be chunked.

2.4 Content Type
The product is intentional with its choice of content medium (e.g. text, pictures, video) to accomplish learning goals, so that multiple content types effectively illustrate key learning takeaways.

Look-fors = (a) Multimedia content reinforces the key information of the lesson in a way that is suitable for the target (student) audience; (b) visual elements complement text or narration to convey deeper or better understandings of topics; (c) text and other media do not distract from key learning takeaways; (d) narrated videos do not simply restate on-page text (screen reader technology excluded).

2.5 Content Adjacence

The product aligns content so that pictures, narration, and other information appear adjacent - or, close together - on pages.

Look-fors = (a) Users do not have to navigate away (e.g. scroll or swipe) in order to see pictures/visuals and text that relate to each other; (b) narration is well-timed so that it complements visual information; (c) controls for interactive elements (e.g. click to hear narration) are easy to find and use.

2.6 Recall & Reinforcement

The product regularly requires students to retrieve, recall, reflect, and build upon what they already know via a variety of interactive activities.

Look-fors = (a) Content pages regularly include activities that engage learners in assessing their learning (such as a quiz or reflection) before moving too far ahead; (b) it is difficult to just click "next" repeatedly to move through content.

2.7 Content Customization

The product offers teachers the ability to customize, differentiate, or personalize the flow of content and activities to meet the needs of diverse students.

Look-fors = (a) At minimum, content is modular so that teachers can easily link to specific lessons or activities; (b) teachers are able to drag/drop or "mix & match" content and activities if desired.

2.8 Applied Examples

The product presents a variety of real-world examples that illustrate learning goals and key takeaways.

Look-fors = (a) Concepts are consistently illustrated with a variety of concrete examples; (b) contrasting "non-examples" that illustrate what the concept is NOT (or that illustrate common misconceptions) are present; (c) examples clearly illustrate the key instructional takeaways.

2.9 Elaborative Reflection

The product includes embedded functionality that encourages students to reflect on information presented.

Look-fors = (a) A built-in note-taking mechanism (e.g. "note catcher") that can be accessed at any time and exported (e.g. as a document); (b) structured prompts or product features explicitly encourage students to reflect upon content (such as via note-taking or discussion); (c) prompts and questions encourage students to make connections between new knowledge and what they already knew or believed; (d) activities require students to regularly explore conclusions and/or implications of new knowledge learned.

DIMENSION 3 Digital Pedagogy

Definition: The product is designed to support the development of digital age learning skills, capacities and knowledge. This dimension focuses on how technology can help students and teachers experience the best possible learning experiences, including the social and learning affordances that digital educational products uniquely offer.

Student Voice = "Does this product help me deepen my learning and think about topics? Does it provide ways for me to explore design thinking and problem solving? Does it help me learn about the learning process?"

Teacher voice = "Does this product go beyond 'drill and practice' to encourage deeper thinking? Does this product provide a structure for how students describe their design and solution processes when working on projects? Does the product help students make their thinking visible?"

Provider voice = "Does my product encourage students to explore real world 'authentic' problems, then research and describe a solution? That's deep thinking. Does my product provide teachers a template for structuring creative, innovative, or authentic group projects?"

INDICATORS

3.1 Authentic Learning
The product presents students with "authentic" problems and requires them to develop related solutions.

Look-fors = (a) Learning scenarios cite authentic, real-world problems; (b) students are tasked to create original works or solutions to authentic problems; (c) assignments offer students the opportunity to repurpose or "remix" resources they find.

3.2 Problem Definition
The product encourages students to carefully define problems and develop strategic plans for solving them.

Look-fors = (a) Learning episodes include activities explicitly related to problem definition and deconstruction (i.e. breaking the problem and solution strategy into parts); (b) activities require students to describe their project methodology or process (as appropriate); (c) assessments and activities help students reflect on design thinking processes (e.g. such as the use of algorithms or computational thinking).

3.3 Information Curation
The product's activities require students to curate, evaluate, and use information to complete assessments or projects.

Look-fors = (a) Activities require students to find information (either within the app or external to it) and evaluate its perspective (rationale and position); (b) activities require students to find information and evaluate its credibility and relevance; (c) interface elements (including prompts) appropriately help students reference and describe the information they use.

3.4 Solution Design

The product's learning activities include a structured approach to solution design, prototyping, and iteration for students.

Look-fors = (a) Select activities feature a structured design process approach that guides students towards strategic solution development; (b) product functionality helps students document prototype ideas, development, and tests.

3.5 Collaborative Interaction

The product features functionality to support collaboration among learners, and between learners and teachers.

Look-fors = (a) Ability for teachers to provide feedback and solicit student response at specific spots in student work; (b) ability for students to provide feedback on peers' work; (c) immediate (real-time) collaboration that supports online group work; (d) straightforward ability to share a product with others and add new collaborators.

3.6 Digital Identity

The product provides learning opportunities related to safe and ethical online behavior, intellectual property, and digital identity management.

Look-fors = (a) Explicit instruction about intellectual property (e.g. citing resources, Creative Commons, etc.) is presented; (b) learning episodes include functionality or quizzes related to digital identity; (c) data privacy and sharing options are available to teachers and (as appropriate) students; (d) issues related to online safety (e.g. password management, phishing) and/or etiquette (e.g. cyber bullying) are addressed.

DIMENSION 4 Inclusivity

Definition: The product helps teachers provide learning experiences that are relevant to students of many cultures, backgrounds, and abilities, and support learner motivation and agency in the learning process. The product meets current guidelines around accessibility, and supports a positive classroom culture.

Student Voice = "Do I see myself in this product's content or examples? Are learning activities relevant to me personally? If I have a disability or learning difference, can I access content and learning activities in ways that work best for me?"

Teacher voice = "Does this product represent the diverse backgrounds of my students? Will my students find the content and examples relevant to their lives? Is the product accessible to learners with a variety of disabilities?"

Provider voice = "Will teachers see their students in the content, activities, and examples in this product? Does our product present a variety of student cultures, abilities, genders, socioeconomic statuses, religions, backgrounds (and other aspects of identity)? Is our product accessible for learners with almost any disability?"

INDICATORS

4.1 Diverse Representation
The product features content and activities that reflect a diverse range of people and cultures as is reasonable given the purpose and content of the lesson.

Look-fors = (a) Examples include a wide variety of people in lay and professional situations; (b) examples are diverse without relying on stereotypes; (c) multiple diversity aspects include gender, race, ethnicity, ability, orientation, socio-economic backgrounds, religion, body type, immigration status, and/or nationality.

4.2 Empathy Opportunity
The product provides helpful cues to support the development of social skills such as empathy building and constructive communication when there are diverse perspectives.

Look-fors = (a) Content and activities encourage students to "put yourself in the shoes" of others; (b) content and activities facilitate perspective-taking ("windows") and self-reflection ("mirrors") to explore differences; (c) the product generally encourages an asset-based perspective (considering people's differences as strengths) rather than focusing on differences as deficits.

4.3 Accessibility
The product demonstrates that it meets many of the most important accessibility guidelines (e.g. from WCAG guidelines) at a minimum level so that content (including support videos) is accessible to a wide range of people with physical, learning, cognitive or other disabilities.

Look-fors = (a) Closed captioning for audio and video (including support videos) is easy to find; (b) speed control for audio and video is available; (c) important functions (e.g. buttons) use high contrast design (e.g. white text on dark button background for light mode apps).

4.4 Inclusive Awareness
The product provides reasonable opportunities for learners to build their awareness of issues related to inclusivity and equity, especially individual, structural, and cultural aspects of privilege, power, and oppression.

Look-fors = (a) Inclusion of the perspective of marginalized and oppressed people in narratives; (b) explicit discussion of oppressive "isms" and how power is used to control people and knowledge; (c) reflection activities about the importance of social context and power dynamics.

DIMENSION 5 Assessment and Data

Definition: The product uses formative assessments – learning experiences that help make visible what students know and don't yet know – to generate data that inform teachers about student knowledge and skill gaps, and provide students assessment feedback that is specific, actionable, and constructive. As such, it guides teachers' instructional decisions and students' learning journeys.

> **Student Voice =** "Does the product show my learning progress and areas for growth? Does it help me understand my learning journey and what I need to work on next?"

> **Teacher voice =** "Does the product measure and assess student learning progress, participation, and performance in a way that helps me improve my teaching? Does it clearly show students their progress and knowledge gaps? Does it help me understand what I need to know about my students' learning?"

> **Provider voice =** "Does our product measure and assess student learning progress, participation, and performance? Does our product help teachers understand what their students know and don't know? Does our product provide relevant and timely feedback to students about their learning progress?"

INDICATORS

5.1 Assessment Alignment
The product regularly includes formative assessments that clearly align to learning objectives and content.

Look-fors = (a) Formative assessments are embedded throughout learning episodes; (b) "no stakes" diagnostic quizzes are presented at the beginning of sections; (c) alignment between learning objectives and assessments is clear or explicit.

5.2 Success Criteria
The product provides clear success criteria for assessments whether auto-scored by the product or scored by a teacher.

Look-fors = (a) Assessment results are presented alongside criteria for the scores; (b) criteria are adequately detailed to be informative for a student.

5.3 Assessment Types
The product provides a variety of assessment types (i.e. formats) appropriate for the content and target student population.

Look-fors = (a) A variety of assessment type options are available to students (minimally adequate is multiple choice plus one other type such as drag & drop, rank, flash cards, open response, image or video submission, etc.); (b) assessment types are a good fit for the subject, topic, or content taught.

5.4 Performance Demonstration
The product enables students to demonstrate what they have learned in multiple ways.

Look-fors = (a) The process for students to submit work artifacts is clear; (b) students are able to submit work in various formats; (c) students can view and share what they've submitted (as appropriate).

5.5 Feedback

The product provides students with actionable, real-time feedback about their performance on embedded, auto-scored assessments.

Look-fors = (a) Feedback goes beyond just correct/incorrect; (b) assessments provide feedback to students quickly or immediately; (c) feedback clearly connects to instructional content or offers recommendations (e.g. other assessment selections) to address knowledge gaps.

5.6 Performance Results

The product provides assessment data and results that enable teachers to analyze student performance, including student resubmission of work.

Look-fors = (a) Assessment results - by students and groups - are immediately available to teachers; (b) results are easy to interpret; display of results is configurable (e.g. results by subgroup).

5.7 Student Analytics

The product enables teachers to track metrics related to student product use, such as login history, page visits, time per page, interactions, and assessments taken.

Look-fors = (a) A student analytics dashboard that is clear and informative for teachers; (b) the analytics dashboard is adequately configurable (e.g. filterable, customizable) based on the content and audience.

Scoring Sheet

Product _____ **Rater** _____ **Total Score** _____

Dimension 1 - User Interface and Agency

Indicator	Definition	Does not meet	Meets	Score
1.1 Value Proposition	The product clearly demonstrates how it will improve the teaching workflow and help meet instructional needs efficiently and effectively.	⊗	✓	
1.2 Login	The product provides a login process for teachers and students that is easy to find and complete.	⊗	✓	
1.3 Navigation	The product makes it easy for users to understand their location within the product, how to quickly find what they need, and allows for easy recovery from errors.	⊗	✓	
1.4 Interface Design	The product user interface organizes all elements (e.g. buttons, links, etc.) in a way so that their arrangement makes intuitive sense to users, and elements are consistent, actionable, and add value to the experience.	⊗	✓	
1.5 Discoverability	The product makes it easy for teachers to find, preview, and filter content and discover product features.	⊗	✓	
1.6 Student View	The product makes it easy for teachers to see, as needed and on demand, exactly what students see when engaging with the product.	⊗	✓	
1.7 Customizable Interface	The product provides a collection of adjustable settings for teachers to customize controls, features, and content.	⊗	✓	
1.8 Support	The product provides teachers easy access to technical support, including help resources and tutorials, customer service, and embedded help functions as appropriate.	⊗	✓	
1.9 Interoperability	The product clearly demonstrates the extent to which it is interoperable – i.e. integrates with other products in use at the school and district – including account syncs and data sharing.	⊗	✓	
1.10 Data Privacy	The product provider clearly documents its data privacy priorities and practices, explaining them in language that is easy to understand.	⊗	✓	

Dimension 2: Learning Design

Indicator	Definition	Does not meet	Meets	Score
2.1 Learning Outcomes	The product clearly demonstrates alignment of learning outcomes with instructional standards, content, and activities for both teachers and students.	⊗	✓	
2.2 Student Goals	The product helps students set personal learning goals, and reflect on progress towards those goals or product-provided learning outcomes.	⊗	✓	
2.3 Chunking	The product presents content within an activity, lesson, or page in chunks (pieces, bites, modules, etc.) that are appropriate for the students and the topic.	⊗	✓	
2.4 Content Type	The product is intentional with its choice of content medium (e.g. text, pictures, video) to accomplish learning goals, so that multiple content types effectively illustrate key learning takeaways.	⊗	✓	
2.5 Content Adjacence	The product aligns content so that pictures, narration, and other information appear adjacent - or, close together - on pages.	⊗	✓	
2.6 Recall & Reinforcement	The product regularly requires students to retrieve, recall, reflect, and build upon what they already know via a variety of interactive activities.	⊗	✓	
2.7 Content Customization	The product offers teachers the ability to customize, differentiate, or personalize the flow of content and activities to meet the needs of diverse students.	⊗	✓	
2.8 Applied Examples	The product presents a variety of real-world examples that illustrate learning goals and key takeaways.	⊗	✓	
2.9 Elaborative Reflection	The product includes embedded functionality that encourages students to reflect on information presented.	⊗	✓	

Scoring Sheet

Product _____ Rater _____ Total Score _____

Dimension 3: Digital Pedagogy

Indicator	Definition	Does not meet	Meets	Score
3.1 Authentic Learning	The product presents students with "authentic" problems and requires them to develop related solutions.	⊗	✓	
3.2 Problem Definition	The product encourages students to carefully define problems and develop strategic plans for solving them.	⊗	✓	
3.3 Information Curation	The product's activities require students to curate, evaluate, and use information to complete assessments or projects.	⊗	✓	
3.4 Solution Design	The product's learning activities include a structured approach to solution design, prototyping, and iteration for students.	⊗	✓	
3.5 Collaborative Interaction	The product features functionality to support collaboration among learners, and between learners and teachers.	⊗	✓	
3.6 Digital Identity	The product provides learning opportunities related to safe and ethical online behavior, intellectual property, and digital identity management.	⊗	✓	

Dimension 4: Inclusivity

Indicator	Definition	Does not meet	Meets	Score
4.1 Diverse Representation	The product features content and activities that reflect a diverse range of people and cultures as is reasonable given the purpose and content of the lesson.	⊗	✓	
4.2 Empathy Opportunity	The product provides helpful cues to support the development of social skills such as empathy building and constructive communication when there are diverse perspectives.	⊗	✓	
4.3 Accessibility	The product demonstrates that it meets many of the most important accessibility guidelines (e.g. from WCAG guidelines) at a minimum level so that content (including support videos) is accessible to a wide range of people with physical, learning, cognitive or other disabilities.	⊗	✓	
4.4 Inclusive Awareness	The product provides reasonable opportunities for learners to build their awareness of issues related to inclusivity and equity, especially individual, structural, and cultural aspects of privilege, power, and oppression.	⊗	✓	

Dimension 5: Assessment and Data

Indicator	Definition	Does not meet	Meets	Score
5.1 Assessment Alignment	The product regularly includes formative assessments that clearly align to learning objectives and content.	⊗	✓	
5.2 Success Criteria	The product provides clear success criteria for assessments whether auto-scored by the product or scored by a teacher.	⊗	✓	
5.3 Assessment Types	The product provides a variety of assessment types (i.e. formats) appropriate for the content and target student population.	⊗	✓	
5.4 Performance Demonstration	The product enables students to demonstrate what they have learned in multiple ways.	⊗	✓	
5.5 Feedback	The product provides students with actionable, real-time feedback about their performance on embedded, auto-scored assessments.	⊗	✓	
5.6 Performance Results	The product provides assessment data and results that enable teachers to analyze student performance, including student resubmission of work.	⊗	✓	
5.7 Student Analytics	The product enables teachers to track metrics related to student product use, such as login history, page visits, time per page, interactions, and assessments taken.	⊗	✓	

**Below is an example of a scored section – just section 1, "User interface and agency."
It shows how scores are assigned based on ratings.**

Dimension 1 - User Interface and Agency

Indicator	Definition	Does not meet	Meets	Score
1.1 Value Proposition	The product clearly demonstrates how it will improve the teaching workflow and help meet instructional needs efficiently and effectively.	⊗	●	1
1.2 Login	The product provides a login process for teachers and students that is easy to find and complete.	⊗	✓	0
1.3 Navigation	The product makes it easy for users to understand their location within the product, how to quickly find what they need, and allows for easy recovery from errors.	⊗	●	1
1.4 Interface Design	The product user interface organizes all elements (e.g. buttons, links, etc.) in a way so that their arrangement makes intuitive sense to users, and elements are consistent, actionable, and add value to the experience.	●	✓	-1
1.5 Discoverability	The product makes it easy for teachers to find, preview, and filter content and discover product features.	⊗	✓	0
1.6 Student View	The product makes it easy for teachers to see, as needed and on demand, exactly what students see when engaging with the product.	●	✓	-1
1.7 Customizable Interface	The product provides a collection of adjustable settings for teachers to customize controls, features, and content.	⊗	●	1
1.8 Support	The product provides teachers easy access to technical support, including help resources and tutorials, customer service, and embedded help functions as appropriate.	⊗	✓	0
1.9 Interoperability	The product clearly demonstrates the extent to which it is interoperable – i.e. integrates with other products in use at the school and district – including account syncs and data sharing.	⊗	●	1
1.10 Data Privacy	The product provider clearly documents its data privacy priorities and practices, explaining them in language that is easy to understand.	●	✓	-1

Dimension 2: Learning Design

Indicator	Definition	Does not meet	Meets	Score
2.1 Learning Outcomes	The product clearly demonstrates alignment of learning outcomes with instructional standards, content, and activities for both teachers and students.	⊗	✓	
2.2 Student Goals	The product helps students set personal learning goals, and reflect on progress towards those goals or product-provided learning outcomes.	⊗	✓	
2.3 Chunking	The product presents content within an activity, lesson, or page in chunks (pieces, bites, modules, etc.) that are appropriate for the students and the topic.	⊗	✓	
2.4 Content Type	The product is intentional with its choice of content medium (e.g. text, pictures, video) to accomplish learning goals, so that multiple content types effectively illustrate key learning takeaways.	⊗	✓	
2.5 Content Adjacence	The product aligns content so that pictures, narration, and other information appear adjacent - or, close together - on pages.	⊗	✓	
2.6 Recall & Reinforcement	The product regularly requires students to retrieve, recall, reflect, and build upon what they already know via a variety of interactive activities.	⊗	✓	
2.7 Content Customization	The product offers teachers the ability to customize, differentiate, or personalize the flow of content and activities to meet the needs of diverse students.	⊗	✓	
2.8 Applied Examples	The product presents a variety of real-world examples that illustrate learning goals and key takeaways.	⊗	✓	
2.9 Elaborative Reflection	The product includes embedded functionality that encourages students to reflect on information presented.	⊗	✓	

Alignment Map

Dimension	Indicator	Look-for	Curriculum	Assessment	Platforms
User Interface & Agency	Value Proposition	1.1	1	1	1
User Interface & Agency	Login	1.2	1	1	1
User Interface & Agency	Navigation	1.3	1	1	1
User Interface & Agency	Interface Design	1.4	1	1	1
User Interface & Agency	Discoverability	1.5	1	1	&
User Interface & Agency	Student View	1.6	1	1	1
User Interface & Agency	Customizable Interface	1.7	&	&	&
User Interface & Agency	Support	1.8	1	1	1
User Interface & Agency	Interoperability	1.9	&	1	1
User Interface & Agency	Data Privacy	1.10	1	1	1
Learning Design	Learning Outcomes	2.1	1	&	&
Learning Design	Student Goals	2.2	&	&	&
Learning Design	Chunking	2.3	1	1	&
Learning Design	Content Type	2.4	1	1	&
Learning Design	Content Adjacence	2.5	1	1	&
Learning Design	Recall & Reinforcement	2.6	1	&	&
Learning Design	Content Customization	2.7	&	&	&
Learning Design	Applied Examples	2.8	1	&	&
Learning Design	Elaborative Reflection	2.9	&	&	&
Digital Pedagogy	Authentic Learning	3.1	&	&	&
Digital Pedagogy	Problem Definition	3.2	&	&	&
Digital Pedagogy	Information Curation	3.3	&	&	&
Digital Pedagogy	Solution Design	3.4	&	&	&
Digital Pedagogy	Collaborative Interaction	3.5	&	&	&
Digital Pedagogy	Digital Identity	3.6	&	&	&
Inclusivity	Diverse Representation	4.1	1	1	&
Inclusivity	Empathy Opportunity	4.2	&	&	&
Inclusivity	Accessibility	4.3	1	1	1
Inclusivity	Inclusive Awareness	4.4	&	&	&
Assessment and Data	Assessment Alignment	5.1	1	&	&
Assessment and Data	Success Criteria	5.2	&	&	&
Assessment and Data	Assessment Types	5.3	&	&	&
Assessment and Data	Performance Demonstration	5.4	&	&	1
Assessment and Data	Feedback	5.5	1	1	&
Assessment and Data	Performance Results	5.6	&	1	1
Assessment and Data	Student Analytics	5.7	&	1	1
LEGEND					
Required indicator	A "1" in a cell indicates that the indicator is very important or required for a product type.				
Optional indicator	A "&" in a cell indicates that the indicator is optional or preferred (but not required) for a product type.				

References

The following references guided the Teacher Ready project, including the construction of the framework.

Babich, N. (2019, October 7). The 4 golden rules of UI design. *Adobe*. https://xd.adobe.com/ideas/process/ui-design/4-golden-rules-ui-design/

Bower, (2008). Affordance analysis: Matching learning tasks with learning technologies. *Educational Media International, 45*. https://doi.org/10.1080/09523980701847115

Buzhardt, J. & Heitzman-Powell, L. (2005). Stop blaming the teachers: The role of usability testing in bridging the gap between educators and technology. *Electronic Journal for the Integration of Technology in Education, 4*, 13-29.

Chughtai, R., Zhang, S., & Craig, S. D. (2015). Usability evaluation of intelligent tutoring system: ITS from a usability perspective. *In Proceedings of the human factors and ergonomics society annual meeting, 59*(1), 367-371. doi:10.1177/1541931215591076

Creative Reaction Lab. (2018). Equity-centered community design field guide. www.creativereactionlab.com

Deegan, R. (2015). Complex mobile learning that adapts to learners' cognitive load. *International Journal of Mobile and Blended Learning, 7*(1), 13-24. doi:10.4018/ijmbl.2015010102

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems, 49*(1). https://doi.org/10.1177/0047239520934018

Digital Promise. (2016). *Using research in ed tech*. https://digitalpromise.org/wp-content/uploads/2016/02/Using-Research-in-Ed-Tech.pdf

Dumont, S. (2021, July 17). *The difference between UI and UX, according to designer and Maze CEO, Jonathan Widawski*. Maze. https://maze.co/blog/ui-vs-ux/

Granić, A. & Ćukušić, M. (2011). Usability testing and expert inspections complemented by educational evaluation: A case study of an e-learning platform. *Journal of Educational Technology & Society, 14*, 107-123.

Hadjerrouit, S. (2010). A conceptual framework for using and evaluating web-based learning resources in school education. *Journal of Information Technology Education, 9*(1), 53-79. doi:10.28945/1106

Hartson, R., & Pyla, P. (2018). *The UX book: Agile UX design for a quality user experience* (2nd ed.). Morgan Kaufmann.

Holden, H. & Rada, R. (2011). Understanding the influence of perceived usability and technology self-efficacy on teachers' technology acceptance. *Journal of Research on Technology in Education, 43*. 343-367. doi:10.1080/15391523.2011.10782576

IBM Design Research. *Guiding principles.* (2019). https://www.ibm.com/design/research/guiding-principles/principles-overview

Kenttälä, V., Rousi, R., & Kankaanranta, M. (2017). Towards the learning experience technology usability framework. In T. Kidd & L. R. Morris (Eds.), *Handbook of research on instructional systems and educational technology* (pp. 128-140). IGI Global. doi:10.4018/978-1-5225-2399-4.ch012

Koohang, A. & Du Plessis, J. (2004). Architecting usability properties in the e-learning instructional design process. *International Journal on E-learning*, 3(3), 38-44.

Leacock, T. L. & Nesbit, J. C. (2007). A framework for evaluating the quality of multimedia learning resources. *Journal of Educational Technology & Society, 10*, 44-59.

Lee, S. H. (1999). Usability testing for developing effective interactive multimedia software: Concepts, dimensions, and procedures. *Journal of Educational Technology & Society, 2*.

Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2003). The technology acceptance model: Past, present, and future. *Communications of the Association for Information Systems, 12*(50), p. 752-780.

Lim, C. J. & Lee, S. (2007). Pedagogical usability checklist for ESL/EFL e-learning websites. *Journal of Convergence Information Technology, 2*(3), 67-76.

Microsoft. (n.d.). Inclusive 101. https://www.microsoft.com/design/inclusive/

Nokelainen, P. (2006). An empirical assessment of pedagogical usability criteria for digital learning material with elementary school students. *Journal of Educational Technology & Society, 9*, 178-197.

Norman, D. (2013). *The design of everyday things*, Basic Books.

Okumuş, S., Lewis, L., Wiebe, E., & Hollebrands, K. (2016). Utility and usability as factors influencing teacher decisions about software integration. *Educational Technology Research and Development, 64*, 1227-1249. doi:10.1007/s11423-016-9455-4

Paas, F. & Firssova, O. (2003). Usability evaluation of integrated e-learning. In W. Jochems, R. Koper, & J. Van Merrienboer (Eds.), *Integrated e-learning: Implications for pedagogy, technology, and organization* (pp. 112-125). Routledge. doi:10.4324/9780203416365

Park, H. & Song, H. D. (2015). Make e-learning effortless! Impact of a redesigned user interface on usability through the application of an affordance design approach. *Journal of Educational Technology & Society, 18*(3), 185-196.

Roscoe, R. D., Cooke, N. J., Branaghan, R. J., Craig, S. D. (2018). Human systems engineering and educational technology. In R. D. Roscoe, S. D. Craig, & I. Douglas (Eds.), *End-user considerations in educational technology design* (pp. 1-34). IGI Global. doi:10.4018/978-1-5225-2639-1.ch001

Sanders, L. [Workchops New Zealand]. (2017, April 20). Liz Sanders | Co Design | Workchops. [Video]. YouTube. https://youtu.be/oetj1RpSJrI

Schmidt, M., Earnshaw, Y., Tawfik, A. A., Jahnke, I. (2020). User experience design. In R. E. West (Ed.), *Foundations of learning and instructional design technology*. EdTech Books.

Schroeder, S. (2021, February 1). Using lessons from visual design to make better materials for students. *Edutopia*. https://www.edutopia.org/article/using-lessons-visual-design-make-better-materials-students

Singh, V., Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). *American Journal of Distance Education, 33*(4), 289–306.

Sugar, W. (1999). Novice designers' myths about usability sessions: Guidelines to implementing user-centered design principles. *Educational Technology, 39*(6), 40-44.

U.S. Department of Education, Office of Educational Technology. (2015). *Ed tech developer's guide: A primer for software developers, startups, and entrepreneurs*. https://tech.ed.gov/files/2015/04/Developer-Toolkit.pdf

U.S. Department of Health and Human Services. *User interface design basics*. (n.d.). https://www.usability.gov/what-and-why/user-interface-design.html

Weston, T. (2004). Formative evaluation for implementation: Evaluating educational technology applications and lessons. *American Journal of Evaluation, 25*, 51-64. doi:10.1177/109821400402500104

Zilinskas, S. (2020, October 20). Four essential steps to building a better edtech product. *Forbes*. https://www.forbes.com/sites/theyec/2020/10/20/four-essential-steps-to-building-a-better-edtech-product/?sh=40c4b9e372b6