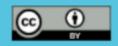


# Project Design + Facilitation Guide



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CrowdED Learning is an initiative of the EdTech Center @ World Education.

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## Introduction

The first (known) "formal" EdTech Maker Space was launched by CrowdED Learning in July 2020 as a project-based professional development model. The idea was simple: train educators in how to use popular edtech tools and, as part of the process, provide meaningful practice opportunities to create new learning resources. An underlying goal of this generative PD process was to ensure these new resources were "reusable"... meaning they can be readily located, shared, and customized by others to meet the individual needs of learners and instructors.

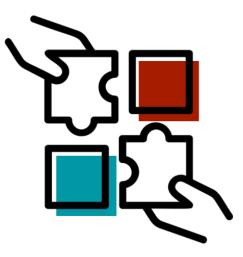
" The EdTech Maker Space is an incredible opportunity to create resources that you and other adult educators can use immediately. You'll learn valuable skills for how to make use of quality tools to enhance your instruction and your students' learning.

~EdTech Maker Space Participant

## How is the process unique?

The EdTech Maker Space process is designed to add a layer of engagement around teacher professional development through awareness that the effort put forth by participants will result in meaningful contribution—*reusable learning objects*—to other educators. Because of this, ETMS projects can spark interest not just from those looking to build new edtech skills, but those who already possess skills using specific tools and are looking to participate in projects that support other educators and, ultimately, learners.

Most importantly, at the core of the EdTech Maker Space process are the foundational beliefs that we all are lifelong learners, and we as educators are *stronger together*. Given this, the "process" can be as open or structured as you see fit, inclusive of both edtech experts and "newbies" looking to learn new skills, and a productive way to build and foster a culture of collaboration amongst participants.



## **Getting Started**

This guide is designed to provide you with a start-to-finish overview of the steps *you might take* to run your own EdTech Maker Space. It is assumed that you likely will not follow all of these steps depending on the nature of your project and its end goals; however, regardless of how you use it, this guide will help you think through key considerations to make as you design your project, along with resources and examples to help illustrate each of the following steps:

**Identify Needs + Content Options** | Steps you can take to determine 1 what subject or content areas to focus upon for your Maker Space project, and tips for exploring and evaluating content options. Match Learning Goals to EdTech Tools | Processes you can use to 2 examine applicable edtech tools and evaluate which tools are best-suited for your project goals. **Design Learning Resources + Guides** | Guidance on how to provide 3 clear guidelines to participants for how to create learning resources that are consistent, accessible, and easy to use and reuse. **Train Instructors + Create Resources** | Tips for designing your training 4 to ensure it is an organized, engaging, and inclusive learning experience for your participants. Evaluate + Share Your Work | Processes to put in place to ensure all content developed follows project guidelines and is ready for use, along with considerations for sharing your work with the world!

## Why run an EdTech Maker Space?

The COVID-19 crisis of 2020 created an unprecedented shift in the need for access to quality, engaging, mobile-friendly learning resources that are easy to use, share, and customize. Alongside the need for more resources, school closures exposed the need to expand teacher training around what strategies they want to employ as part of strategic remote instruction, as well as decision-making around which edtech tools are best-suited for implementing these strategies.

The EdTech Center @ World Education is a national leader in supporting organizations and instructors as they leverage new digital technologies to increase the reach and impact of adult education. As part of this work, we offer two research-based resources to support educators as they develop more strategic distance and blended learning programming:

- The <u>IDEAL Distance Education and Blended Learning</u> <u>Handbook (7th Edition)</u>, provides detailed guidance and examples as you consider each aspect of distance and blended education programming.
- The *Transforming Distance Education* course offers 15 engaging "microlearning" opportunities across four modules, including choosing an instructional model, outreach, screening, orientation, and assessment.

While we have witnessed a massive uptick in practitioners embracing edtech tools and beginning the transformative process of developing strategies for more effective technology integration into everyday practice, *we recognize the challenge of effectively incorporating these strategies into an instructional routine without access to quality resources that support them*. The EdTech Maker Space process can meet this challenge by involving practitioners in the process of creating quality resources as they learn about effective strategies and the edtech tools that support them. And, because the goal of the EdTech Maker Space process is to create open, reusable learning objects that can be shared, copied, or modified, instructors can customize the resources as they see fit based on their strategies and instructional contexts.

## The Goal? More Open and *Reusable* Education Resources

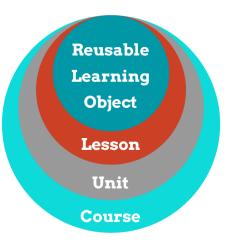
Open Education Resources (OER) hold immense promise for increasing access to quality, engaging, mobile-friendly learning. Yet, they remain heavily underutilized for a number of reasons, namely:

Volume	Trust	Usability
With seemingly infinite OER	Given the openness of OER	Even the most quality OER
available online, finding	repositories, <b>educators</b>	aren't always designed with
relevant and effective	<b>need to evaluate</b> whether	others in mind, meaning
content is too <b>time</b>	resources are engaging,	they <b>often require revision</b>
<b>consuming</b> for many.	accurate, and effective.	before they can be used.

An additional challenge that has inhibited more widespread use of quality OER is the level of "granularity" with which resources are shared. The Open Education movement has been active in the higher education space, a primary motivation being the need to drive down the exorbitant cost of textbooks. A number of K-12 districts have followed suit as part of <u>the US</u> <u>Department of Education's "Go Open"</u> <u>movement</u>. However, within both the higher education and K-12 segments of education, there is a baseline set of assumptions that does not always exist for adult and lifelong learners: that students a) are coming into a learning engagement

at more or less the same levels, b) will be engaged in formal learning for a determined (cohort-based) period of time, and c) have an underlying goal of exiting the formal learning engagement at the same time having learned the same skills. These assumptions lead to the development of OER that tend to fit only within course- and cohort-based learning structures.

Given these broader structures often don't fit the realities of formal adult education contexts, a goal of



the EdTech Maker Space model is to generate more reusable learning resources at the right level of granularity for adult education learners and instructors. This guide will help you identify what level of granularity is appropriate for your project based on your goals along with the learning and instructional contexts of your end users.

## Who can participate in an EdTech Maker Space?

The simple answer? Anyone! There are a number of roles participants can play depending on how "open" you want your project to be. If someone is an experienced pro in using a particular edtech tool, they might choose to participate by running a training or supporting other participants who are at beginning or novice levels as they create their resources. Or, you might not even have a project yet in mind and want inspiration for ideas, so you could invite anyone interested to participate in a "design slam" that allows for open creativity for resource creation around specific tools, content, or strategies.

Makers	Managers	Creators
<ul> <li>Participate in design challenges or "slams" to generate activity ideas.</li> <li>Conceptualize activity formats base on:         <ul> <li>content needs</li> <li>resource needs using specific tools.</li> </ul> </li> <li>Create activities to be made available for use as-is or templated to support widespread resource development.</li> </ul>	<ul> <li>Ideally have instructional design background to evaluate activities for:         <ul> <li>context (skills, tools, access, permissions)</li> <li>replicability and reusability of activity.</li> </ul> </li> <li>Decide what activity types get used for broader (re)production.</li> <li>Design templates and required training for implementation.</li> </ul>	<ul> <li>The "builders" who help to generate activities based on templates.</li> <li>Participate in training to develop necessary skills for leveraging tools for resource creation.</li> <li>Those with experience using a particular tool may forgo training and create resources, support others, and/or review others' work.</li> </ul>

Based on the present model, we see three main roles for participation:

#### You might also consider involving <u>learners</u> in EdTech Maker Space projects! Open

pedagogy is a process that invites students to be part of instruction by creating OER to demonstrate their understanding of concepts. Imagine teaching learners how to use Quizlet and then asking them to create a vocabulary study set with images for a particular lesson. In doing so, learners a) develop digital literacy skills as they create resources, b) learn about a free edtech tool that helps them build study skills and are introduced to a library of study sets for thousands of topics, and c) gain confidence by playing a role in supporting the success of other students.

## 1. Identify Needs + Content Options

#### In this section, you will consider:

- What content goals do we have for our EdTech Maker Space?
- Where can we look to find content we might use for our project?
- How can we evaluate if we are allowed to reuse content for our project?
- If using existing content, how can/should we include the owners of the original content?
- Once we have determined the availability of content, how do we decide the format for our EdTech Maker Space project?

## **Determine Your Project's Content Goals**

Designing an EdTech Maker Space project typically begins with identifying a specific area of content / resource need. There are any number of potential resource drivers for running an ETMS; this table captures four common reasons, organized by the underlying factors that create a need for resources:



It may be the primary driver for your initiative isn't so much content related as it is to help instructors' gain skills using a particular edtech tool or platform. Even if this is the case, your project will likely generate more interest and engagement if participants recognize the need for and the value in creating the resultant resources based on addressing one of the above factors.

## Find the Right Content to Meet Your Needs

Once you've established a content or resource need, your next step is to consider where to go to explore content options. A great place to start with selecting content is to use materials that instructors might already be using or at least with which they are familiar. You might survey instructors or other colleagues to learn more about free curriculum or activities they currently are using with students. Or, you need to search a bit to find resources that might be useful, you might choose to explore one of the following helpful resources:

- **CrowdED Learning** | Part of the EdTech Center @ World Education, <u>CrowdED</u> <u>Learning's Skill Directory</u> provides curated sets of online resources organized by academic, workplace, and lifelong learning competency areas.
- **Hippocampus** | From the NROC Project, <u>Hippocampus</u> is a vetted repository of topically organized multimedia learning objects.
- **OER Commons** | The <u>OER Commons repository</u> is designed to be a "digital public library and collaboration platform" that facilitates sharing and reuse of openly licensed learning resources for all levels and subject areas.
- Skills Commons | Developed through funding from the TAACCCT grant program, the <u>Skills Commons repository</u> hosts openly licensed, industry-specific resources that support integrated education and training.

## The Greater the Need, the Greater the Interest

When CrowdED Learning ran our first EdTech Maker Space, we weren't certain we could generate enough interest to make it a viable project. So we were careful to design a project that had immediate relevance to educators. We chose <u>Reading</u> <u>Skills for Today's Adults</u>—an openly licensed leveled library—as our content base. While the library was widely known, many educators weren't aware of a recent update which added numerous new activities to each reading. And while the new activities were fantastic, they weren't mobile-friendly...meaning in the midst of COVID, the likelihood of their being used was limited. Because teachers saw a connection to their immediate needs—more mobile-friendly reading content—we recruited 44 teachers from 25 states to participate with relative ease.

Please be aware that you cannot simply use any content available for an EdTech Maker Space project. For example, suppose you have a publisher science workbook for which you want to provide learners with additional activity options. You may wish to create Quizlet vocabulary study sets using the lesson vocabulary words and definitions, or Google Forms quizzes using the end of lesson review questions. In most cases, creating derivative resources using content from a copyrighted source is a violation of copyright law and therefore subject to a fine or additional legal action. Because of this, we strongly recommend that you prioritize the use of openly licensed resources for your EdTech Maker Space projects.

## Free vs. Open: What's the difference and why does it matter?

There are seemingly infinite great, free learning resources available online. However, just because a resource is free does not necessarily mean it is open. In order for a learning resource to be considered truly "open", use the "<u>5R</u> <u>Permissions</u>," developed by David Wiley, a pioneer in open education:

- Retain: Are you allowed to make, own, and control a copy of the resource?
- **Revise:** Are you allowed to *edit, adapt, and modify your copy of the resource?*
- **Remix:** Are you allowed to *combine your original or revised copy of the resource with other existing material to create something new?*
- **Reuse:** Are you allowed to use your original, revised, or remixed copy of the resource publicly?
- **Redistribute:** Are you allowed to share copies of your original, revised, or remixed copy of the resource with others? <sup>1</sup>

In many cases, content creators will use <u>Creative Commons licensing</u> in order to signal what the allowable uses are for their resource(s). We highly encourage that projects focus on content that is CC licensed because whatever license it carries clearly signals what you are allowed to and not allowed to do with the content, as well as how the original content creator wishes to be attributed for any reuse. *The Educators Guide to Copyright, Fair Use, and Creative Commons* provides a great overview of different content licensing and what each means.

<sup>&</sup>lt;sup>1</sup> This list is an adaptation of *Defining the "Open" in Open Content and Open Educational Resources*, which was originally written by David Wiley and published freely under a Creative Commons Attribution 4.0 license.

## Always Let Content Owners Know Your Intent

Even if the content you wish to use *is* openly licensed, **it is always a good idea to inform the license holder** of what you intend to do with their content. Beyond being <u>a good practice of digital citizenship</u>, reaching out to the original content creator may lead to opportunities for collaboration. Content creators typically are excited to learn of interest in expanding use of their content, so they may be very willing to support and promote your efforts. By sharing the goals you have for using someone else's content, it is possible additional ideas will be generated, along with opportunities to mutually promote one another's work.

## **Collaboration is a Win-Win Process**

Before starting its EdTech Maker Space project, CrowdED Learning reached out to Southwest (Minnesota) Adult Basic Education (SWABE), the creators of popular <u>Reading Skills for Today's Adults</u> library.

Through collaboration, the two organizations first worked to make the library openly available through <u>Creative Commons</u> licensing (CC-BY-NC-SA). Once the project was completed, they partnered to raise awareness of the original library and <u>the new interactive resources that resulted from the project</u>. SWABE then took the newly created resources and added these to their original library. Now, what started as an already top-notch, widely-used library has been expanded to include more interactive, mobile-friendly options for learners and instructors.

While this guide presents an "order" of this process assuming a starting point of a lack of available content, it is understood this order might not apply to everyone. For example, an organization might already have an existing curriculum in place but simply want to add mobile-friendly supporting resources or to adapt it to be more "digital." Whatever your scenario may be, it is important to be aware of what is allowable regarding the content you intend to use as part of your ETMS project.

## Decide Upon a Project Format

Once you have determined the content you wish to use, or you have identified there is a lack of content available that meets your needs, you next need to consider what you intend participants to do as part of your project. Generally speaking, your project will likely involve one of the following formats:

Curate Existing Content	Adapt + Remix Content	Create New Content
Why choose this approach?	Why choose this approach?	Why choose this approach?
"As-is" resources are available,	Resources exist, but if adapted	Limited resources exist or are
but they may need to be	they could be made more	missing key components, so
organized to be more usable.	usable and accessible.	new content is needed.
<b>Training Focus</b>	<b>Training Focus</b>	<b>Training Focus</b>
Participants learn how to	Participants learn new edtech	Participants learn protocols for
evaluate learning content and	tools and use them to adapt	new activity creation, then
tag it to standards / topics.	existing content.	create resources accordingly.
Example4+3=3+43½+5½-3a+4a=20FoundationsBasic MathBasic Algebra00V = πr <sup>2</sup> bBasic Algebra0V = πr <sup>2</sup> bCaluetor/Formula Sheet	<section-header><section-header><image/><image/><image/><image/><section-header><image/><image/></section-header></section-header></section-header>	<section-header><image/><image/><section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>
Florida Literacy Coalition	Using reading supplements	By creating a templated lesson
curated Khan Academy videos	available in Word doc format,	plan format + rubric to outline
based on GED test focus areas	<b>CrowdED Learning</b> trained	expectations, <b>Kentucky</b>
to create <u>an organized library</u>	instructors on Quizlet, Google	<b>SkillsU</b> has built <u>a Lesson Bank</u>
and a <u>mobile app version</u> ,	Forms, and Wakelet to adapt	of standards-based,
making it easier for students to	specific activities and form an	instructor-created lessons that
find relevant video lessons.	interactive reading library.	follow a consistent format.

It is likely a project might combine more than one of these approaches. For example, there might be a great set of videos available for a particular topic but no assessment items to gauge learner understanding. An EdTech Maker Space project might entail first curating videos around particular content area needs, then training educators in a) how to write effective formative assessment questions and b) how to use a tool such as <u>EdPuzzle</u>. The end product of such a project would be a set of relevant content-area videos that now include formative assessment questions. The result would be simplified, organized instructor and learner access to videos that support required learning topics, along with built-in comprehension questions to help monitor learner understanding of the video content.

This section has walked through content considerations for planning your EdTech Maker Space project. Regardless of your content aims, the results of your project will only be useful if they are created to be easily used by learners and instructors. The next section will explore steps you can take to determine what tools are best-suited both for your project's goals and for making your end products as reusable as possible.

## 2. Match Learning Goals to EdTech Tools

#### In this section, you will consider:

- Who are your end users (instructors and students)? What technologies are they already using? What are their access and skill levels?
- How will the end products of your EdTech Maker Space project be used? How can they be leveraged to support research-based strategies?
- What edtech tools should you consider based on your end users and your goals for your project's end products?
- How can you evaluate edtech tool options to make an informed selection?

### **Consider Goals Before Tools**

Once you have identified a content source(s), it's time to consider the types of activities you want to build for your project and which edtech tools you will leverage to maximize their reusability.

Before you begin this process, you first need to consider your goals for running the project. While there are two primary goals for running any EdTech Maker Space—teacher professional development and learning resource creation—it is always recommended that you plan with the mantra "goals before tools."

Perhaps your goal is to provide more out-of-class, mobile-friendly practice opportunities for learners. Maybe you have a homegrown curriculum for which instructors want lesson-level instructional slide decks to support in-person and

remote facilitation of lessons. Or, you may just wish to provide learners with organized sets of instructional videos around topics of interest.

Whatever your project's content and end product goals may be, you should begin by considering your end users—both instructors and learners. This design process—where you design by putting your end user at the center of consideration—is known as <u>human-centered design</u>.



## Build with the End-User in Mind

By taking a human-centered design (HCD) approach, you first think about who your end users are and how they will use the resources you create. The HCD process is quite extensive, and when done thoroughly includes steps including interviews, surveys, the development of human personas and use cases, and more.

For the basic purposes of this guide, consider the ability of instructors and learners to access the resource(s) generated by your project, as well as the ease with which they will be able to use them. To do this, we suggest putting careful thought into three areas: access, skill levels, and complexity. The table below provides guiding questions for these three considerations, followed by examples of each.

Access	<ul> <li>Are the resources from your project mobile- friendly and built in easy-to-access tools?</li> <li>Do the tools students will need for the activity meet accessibility requirements?</li> </ul>
ह्रद्म Skill Levels	<ul> <li>What level of experience will end users need to begin using the tool or resource?</li> <li>Are the steps required to open and use the resource common and/or easy to follow?</li> </ul>
Complexity	<ul> <li>Can the resources be used "as-is" or do they need to be adjusted to make sense to others?</li> <li>Will the resources be offered in formats that make it easy to copy and adjust as desired?</li> </ul>

**Access:** When designing activities for learners, understanding how they will be accessing the activity is critical to their ability to effectively use it. Take, for example, a teacher using Google Classroom. Perhaps this teacher would like to provide worksheets with reading comprehension questions using Google Docs. Google Docs is a common word processing application, and learners certainly benefit from

learning how to use it for their future education and career goals. However, if a majority of the learners in this teacher's class will only have access to the questions via their mobile devices, this activity may prove problematic. While learners will be able to view the Google Doc from their mobile device, entering in text within Google Docs on a mobile device is challenging even for experienced users. If the goal is simply for learners to answer the questions and submit, a better option for this teacher to ensure learners can realistically access and complete the activity might be Google Forms, which makes it easy for learners to enter responses to questions regardless of the device they are using.

**Skill Levels:** Teachers exercise lots of creativity when creating edtech activities. Sometimes this even means leveraging a tool in ways for which it wasn't necessarily designed. In a scenario later in this guide, one instructor was considering whether to use Google Slides for a drag-and-drop sentence building activity. This can be done with relative ease. The words students are expected to drag could be created using basic text boxes or by creating images of word "cards" and adding them to the slide. However, as with any object on a Google Slide, these words cannot be "locked", meaning others have the ability to inadvertently adjust them. Depending on how a learner clicks on the object, they might end up with a blinking cursor for them to type (if using text boxes) or adjusting the size of the shape (if they click on one of the borders of a shape). While these issues can be overcome with guidance (at the same time building skills using Google Slides), these limitations might make the activity more challenging to use for less experienced students and instructors.

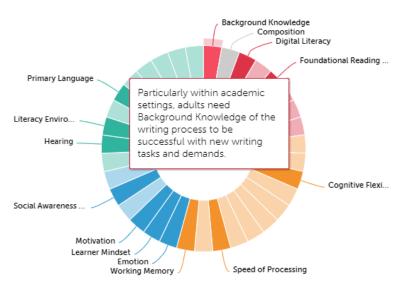
**Complexity:** If there are multiple steps or modifications needed in order for a learning resource to be reused by others, it is less likely to be used. Suppose an activity such as an interactive quiz has been created by an instructor, and the quiz can only be accessed by students using a specific password. This creates a set of complexities to the activity that makes it more challenging for learners to use. Additionally, if the quiz has not been made available for other instructors to copy and use within their own accounts, instructors won't have the ability to see their students' results unless they recreate the quiz from scratch.

These added steps are not limited to activities that are password protected or have sharing restrictions. Consider the PDF. It is extremely common that free learning resources are made available to others as a PDF file. This file format is excellent for a number of reasons. The format is universal and, as a result, there are a number of adaptive software tools (screen readers, zoom settings) that allow for it to be more accessible. PDFs can also be downloaded to nearly any device, meaning the content can be accessed offline. However, what if a teacher wants to adjust the content of an activity that is offered only in PDF format? Unless the instructor has access to expensive software that allows them to adjust the file, the instructor has to recreate the resource (if that is allowed). This severely limits the *reusability* of the resource by others.

## Take a Strategy-based Approach

In addition to considering the basic usability and *reusability* of the resources your participants might create as part of an EdTech Maker Space project, it's also important to envision how instructors and students might use the resources. By thinking through the scenarios and steps for how resources will be located, shared, and used, you can ensure they are built for maximum flexibility.

Start by considering how the resources created through your project accommodate effective tech integration strategies. Digital Promise's <u>Adult Learning</u> <u>Variability Navigator</u> is an excellent way to explore various strategies you might wish to incorporate into your instruction. The navigator allows you to explore different factors that impact adult learners, including

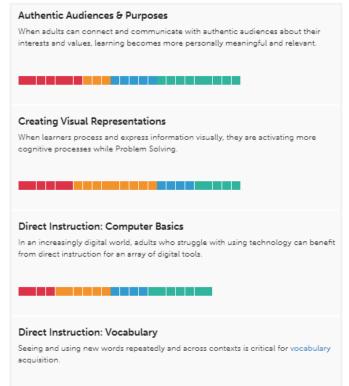


adult literacy, cognition, social-emotional learning, and learner background. Upon selecting a factor, instructors can see the related factors, as well as research-based strategies that can support learners for whom the factor(s) apply.

The research-based strategy examples shown on the following page are a sampling of strategies that can be used to support the primary "factor" of Composition—or

the ability to express ideas and information through writing. Using these as an example, if a program wanted to provide more resources to support the development of learners' composition skills, they might start with these strategies and consider how to develop a project that creates resources which lend themselves particularly well to one particular strategy. Ideas might include:

- Curate Existing Content: To support career exploration, a curation project might involve curating career exploration resources from sites such as CareerOneStop, O\*Net, and other sites related to industries and careers and <u>organizing them into</u> <u>Wakelet collections</u>. Learners might then be presented with writing activities around jobs of interest, which utilizes the research-based strategy: <u>Authentic Audiences and</u> <u>Purposes</u>.
- Revise + Remix Existing Content: To support English Language development, an ETMS project might involve taking study sets from Learning Chocolate, then using



Google Forms to create basic fill in the blank sentences that check learners' ability to use the words in writing. These resources would support the research-based strategy: *Direct instruction: Vocabulary*.

• Create New Content: To help learners build word processing skills, an ETMS project might involve creating a variety of short, relevant writing prompts that involve applying specific skills such as text formatting, creating numbered or bulleted lists, and using a Google Docs template. Each prompt could include learning resources from <u>GCFLearnFree.org</u> or <u>DigitalLearn.org</u> that teach the specific word processing and text formatting skills learners are expected to demonstrate. This would support the research-based strategy of <u>Direct Instruction: Computer Basics</u>.

While not part of a formal EdTech Maker Space, the graphic shown below outlines the process by which one organization in St. Paul, Minnesota selected tools based on learning goals as they worked to migrate their customer service ESL curriculum to an online / hybrid format in response to COVID-19 school closures. (This video provides an overview of the process they followed.)



Having a strategy-first approach not only ensures that your project yields resources that are useful to a broad set of instructors and students; it provides clear framing to support others who wish to use the resources created through your project.

## Not sure what tools are available? Explore your options.

Perhaps you don't have a particular tool in mind for your EdTech Maker Space project. This <u>Teacher Tools page from CrowdED Learning</u> lists freely available edtech tools, organized around how they are used (communication, content, managing students, creating and sharing assignments, assessment) and provides a basic guide for selecting tools based on your context. The page also provides links to other great directories of popular edtech tools for you to explore, including <u>the</u> <u>annual Top Tools for Learning survey/results site</u>.

## Lessons Learned: Selecting One Tool from Many Options

When CrowdED Learning developed their EdTech Maker Space project, they focused on edtech tools that were easy to use and that were best-suited for the existing activities they planned to adapt.

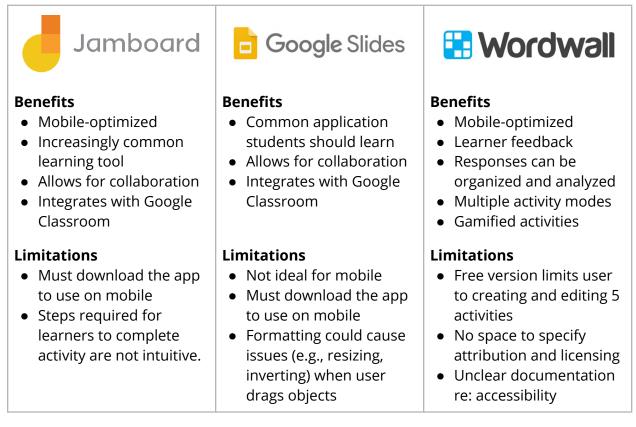
One of the activities that ETMS participants adapted were the multiple choice comprehension quizzes included for every story. There are numerous edtech tools that allow instructors to create multiple choice quizzes, including <u>Google</u> <u>Forms</u>, <u>Quizizz</u>, <u>Formative</u>, and others. While all of these were viable options, CrowdED Learning decided to use Google Forms for three main reasons:

- **Ease of Use for End Users:** Google Forms quizzes can be shared "as-is", meaning students who open the quiz immediately can take the quiz without needing an account or going to a site that might be confusing.
- Adaptability: Teachers have access to "copy" links for each of the quizzes, meaning if they want to track learner completion of quizzes, they can make a copy of those quizzes they wish to include in instruction. Once copied, teachers can use their own version to see the results of their students.
- Instructional Trends: In the midst of the 2020 COVID pandemic, more and more adult education instructors began using Google Classroom to organize assignments for students. Given Google Forms seamlessly integrates into Classroom, the quizzes created as part of this project were ready to use for a larger number of adult educators.

### Test Your Ideas Before You Select a Tool

To support inclusive, human-centered design, it is best both to test the usability of a variety of alternatives of the activities you intend to create (both the edtech tools being used and the formats of the activities) with instructors and learners before setting your participants loose on creating a large volume of activities.

Consider an EdTech Maker Space project designed by educators from Frederick Community College (Maryland) and the Literacy Council of Northern Virginia. For their project, they determined they wanted to create drag-and-drop sentence activities using sentences from <u>Literacy Minnesota's *ESL Story Bank*</u>. For this drag-and-drop activity, they considered three different tools, each of which had its own benefits and limitations: <u>Jamboard</u>, <u>Google Slides</u>, and <u>Wordwall</u>.



While each of these tools could be leveraged for this activity, by testing each of these edtech tools with learners and teachers, the project organizers were able to decide on the tool they felt would be most usable for learners and instructors.

In addition to testing the usability of the resources your project creates, you should also evaluate the edtech tools themselves. The EdTech Center offers a few useful resources that can help you as part of edtech tool evaluation. This evaluation rubric can guide a thorough evaluation of the affordances of an online curriculum or app. It provides guidance in considering factors such as:

- Does the tool provide useful navigation cues?
- Does the tool provide information about data and privacy practices?
- Is the tool designed to be accessible for a wide range of user needs?

For a more extensive set of evaluation criteria, you can use this detailed <u>tool</u> <u>evaluation criteria checklist</u>, which is <u>also available in downloadable format</u>.

## 3. Design Learning Resources + Guides

#### In this section, you will consider:

- What will the resources / activities created by this project look like? How can they be designed to maximize reusability?
- Are the resources being created as part of my project designed with user accessibility in mind?
- How can I ensure participants in my EdTech Maker Space project are able to successfully create resources that follow the intended format?

Once you have selected the tool(s) you will use to create learning resources as part of your project, the next step is to design sample activities to see if they in fact meet your goals. This process is important not just to provide a solid "go-by" example for your participants to use as a model; it also will help you a) test the resource to ensure that it can be used by instructors and students in the ways you envision, and b) document the steps participants will follow to create similar resources.

## Design with Others in Mind

Think about the process of selling a house. If using a realtor, they likely will work with you to "depersonalize" your home as part of the staging process. The purpose of this is to remove those things that make the home "yours" and instead to make the home feel more neutral or depersonalized. In doing so, this makes it easier for prospective buyers to imagine themselves living there.

The same concept applies to creating reusable learning objects. While there are plenty of great lessons and activities circulating online, they were all designed by different people, likely with their specific contexts and learner audiences in mind. In considering what the "end product" will look like for your project, be sure to ask: "*Is this something an educator who is not familiar with this project could readily use*?"

Asking this question is extremely important as you design an EdTech Maker Space project to ensure it results in *reusable* learning resources. The more specific the resources you create are to your organization and/or the way you specifically teach, the less likely others will be able to envision readily using it with their students.

### Lessons Learned: Considerations for "Reusability"

Just because something is freely available and can be accessed or downloaded by others does not necessarily make it "reusable." In addition to considerations around what types of adaptations one might need to make in order for a learning resource to suit their particular needs, resource creators need to think about the technical aspects of adaptation as well. Two important questions to ask are:

#### • Are the resources we create meaningfully editable?

Many people like making PDFs of files they've created because the format can be viewed on any device. This might be something you consider for sharing particular resources with students; however, for content you are sharing with other instructors, it is a barrier to adaptation. The only way others can readily edit a PDF is if they own pricey software that allows them to do so. Consider offering files in native formats (documents, slide presentations, spreadsheets, etc.) or providing links that allow resources to be copied to increase the ease with which others can adapt them.

• Does using the resource require extensive instructor expertise? While edtech tools have become increasingly easy to use, you should take into consideration what will be required of an instructor to copy, download, edit, and/or share your resources with others. The more teachers can use the resource "as is", the better. If adaptations are likely necessary (e.g., Google Forms quizzes for which teachers need to make a copy if they want reporting on their students' performance), consider whether you've offered your resources in a way that makes this process as simple as possible.

#### Ensure Your Resources Can Be Shared and Copied

As noted above, while certain formats, such as PDF, are acceptable for your resources and perhaps optimal for what you share with learners, if the resource is going to be truly open and reusable, you need to be certain others can readily make copies of the original resource and have the ability to adapt the resource with relative ease.

As users create their resources, it is important that you provide guidance for what settings are necessary for the resource to be shareable. Tools such as Quizlet, Wakelet, Padlet, and others all have privacy settings that allow creators to restrict access, as well as settings to indicate whether or not another user can make a copy of the resource to add to their own account. For whatever resources you are

creating, you want others to be able to view your resource without special passwords or permissions, as well as make their own copy of the resource so they can make adjustments as they see fit for their learners.

Quizlet	+ 1	Ĺ	i ul		
wakelet	Save	Share	Сору		
E Forms	Send via		œ	>	<>

Consider Google Forms. Google Forms is an incredibly popular tool for creating surveys and quizzes. And given the prevalence of Google Classroom use, it's a great choice for creating assessment resources as part of an EdTech Maker Space project. However, if the only link you provide teachers is the share link for a Google Forms quiz, then while other instructors and learners will have the ability to *complete* the quiz, instructors will not have the ability to view the results.

Therefore, in addition to the share link (the link you would use to send students a Google Forms quiz that you've created and host in your own Drive), you should also provide a copy link. In Google Forms (*and within ALL Google Docs apps!*), you can do this by changing the "edit" at the end of the URL to "copy." By sharing this link, a user is immediately prompted to make a copy of the Form to their own Drive.

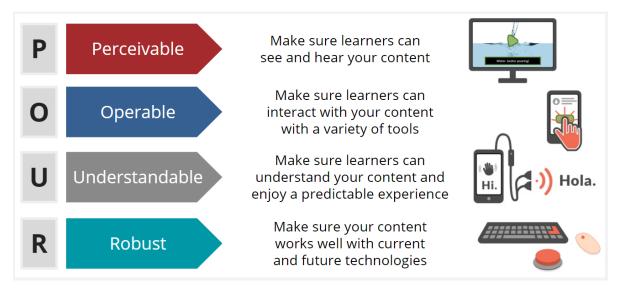
https://docs.google.com/forms/d/1kFvpmUBx3OqoDLI52uqVnD0p33I96Siyn6cxZHBjbCY/edit https://docs.google.com/forms/d/1kFvpmUBx3OqoDLI52uqVnD0p33I96Siyn6cxZHBjbCY/copy

By offering the "share link," others can immediately see what the Google Form looks like, which is extremely useful when reviewing potential resources. By also offering the "copy link," they then have the opportunity to copy the Form if they determine they wish to use it with their students.

## Make Resource Accessibility a Priority

Ensuring your project's resources meet basic accessibility requirements must be a priority. This includes remembering to add alt text for images in documents and slides, create descriptive links to accommodate screen readers (e.g., hyperlinking the text "<u>Check out the most watched YouTube video of all time</u>" instead of "<u>Click here</u>"), and make sure there is accurate closed captioning for videos.

For guidance on how to ensure your resources meet accessibility requirements, we recommend reviewing <u>the POUR Framework</u> from the National Center for Accessible Education Materials. This framework distills the very technical language of the <u>Web Content Accessibility Guidelines</u>, the international standard for making web content accessible, into four basic components:



Note: The icons included in the image above are licensed CC-BY-SA by the <u>National Center on Accessible</u> <u>Education Materials</u>. The image has embedded Alt text so it can be read by screen readers.

This <u>Accessibility Resource List</u>, developed by Designers for Learning, uses the POUR Framework to organize a number of excellent resources that can be used to ensure what you create is accessible.

Designing with accessibility in mind is best practice and creates an optimal learning experience for all learners. By incorporating the POUR principles into your project, you can model for participants how simple building resources with accessibility in mind can be. In this video, Rhode Island educator Sherry Lehane describes the

process she follows to ensure the microlearning presentations she creates using Google Slides are readily **operable** and **usable** by learners who are likely to engage with the content on mobile devices. She also discusses considerations such as text size and color contrast to ensure content is **perceivable**.

#### **Basic Elements**

Limit Content: 1-3 main points on each screen Plan layout and think touch screen Improve readability: font size, layout, colors, question design

<u>WebAIM</u> has extensive resources to evaluate the accessibility of online resources, including this <u>color contrast checker</u> and the <u>WAVE evaluation tool</u>, which allows you to examine how well any website meets accessibility requirements.

web accessibility evaluation tool Address: https://www.crowdedlearning.org/home C	Contrast Checker Home > Resources > Contrast Checker
Styles: OFF ON Details Summary Details Reference Structure Contrast 24 X Very low contrast	Foreground Color       #ackground Color         #4F636D       #FFFFFF         Lightness       6.29:1         permalink         Normal Text
01° 01°	WCAG AA: Pass WCAG AAA: Fail The five boxing wizards jump quickly.
A 42 Alerts     2 X Suspicious alternative text	WCAG AA: Pass WCAG AAA: Pass The five boxing wizards jump quickly.

WebAIM offers the WAVE website evaluation tool, as well as a Contrast Checker that allows you to test the readability of color combinations between text and background.

In addition to the look and feel of the resources you create as part of your project, take time up front to see what documentation is provided regarding accessibility as you consider the tools you will leverage for your EdTech Maker Space project.

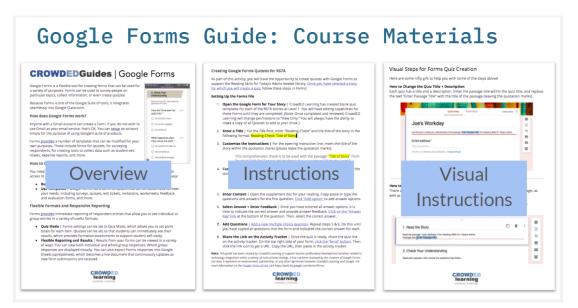
Finally, **consider learner instructions!** Given the resources you create may use edtech tools or formats unfamiliar to students, clear instructions in <u>plain language</u> are important. Whenever possible, use templated instructions that require limited adjustment by participants beyond updating things such as story titles. <u>Hemingway</u> <u>Editor</u> is a free tool that allows you to check the readability of what you write.

## **Develop Clear Resource Creation Guides**

It is important to remember that this is a learning experience for participants; therefore, the more supports you provide them to guide the process of resource creation, the more likely they will be successful. Given this, in addition to creating sample activities to serve as models for what participants will create, it is important to provide guides that walk through the steps participants will follow to do so.

Even if you intend to provide step-by-step instructions via an in-person training or webinar, it is helpful to provide participants with something to refer to, particularly if they will be creating resources independently. Depending on the complexity of what participants will create, you may wish to provide one or more of the following:

- **Step-by-Step Instructions:** Create a set of step-by-step instructions, including whatever settings, content, or formatting is required for finished products.
- Visual Instructions: Provide visual guides by taking <u>screen captures to show</u> <u>each step</u>. You might even use one of a number of tools such as <u>Gyazo</u> that allows you to create animated screen captures to show each step, such as <u>this .gif showing how to get a share link for a Google Form</u>.
- Video Instructions: If you are familiar with tools such as <u>Screencastify</u> or <u>Screencast-o- Matic</u>, consider creating a how-to video showing the steps participants will follow to create their resources. You can also accomplish this by recording a live walkthrough using a tool such as Zoom.



This <u>Google Forms guide</u> was used by CrowdED Learning as part of its EdTech Maker Space in which participants used Forms to create reading comprehension quizzes for a library of leveled readings. Participants used it, the <u>recording of the</u> <u>training webinar</u>, and the <u>associated slide deck</u> to guide them through the creation of quizzes for the stories they selected.

## **Create Clear Guidelines to Ensure Consistent Resources**

The purpose of creating guidelines is not just to ensure participants know the "how-to's" for creating their resources. It is also to ensure that the resources they create are consistent in their look and feel. The more you can make your project's resources consistent in terms of aesthetic, format, and text supports such as directions, the more reusable the resources will be for others.

We encourage providing checklists for participants to serve as a helpful tool for double-checking whether they've incorporated all of the elements they were instructed to include within your resource creation guide. <u>Here is an</u> <u>example of a checklist</u> that was created for one project in which participants created <u>Google Forms quizzes</u> to check learner comprehension of stories within a leveled reading library.

#### Did you...

change the quiz title to the passage title?
enter the passage title in the description section?
enter the passage title in 1. Read the Story?
enter the passage URL in 1. Read the Story?
add all questions from the passage supplement?
identify the correct answer for each question?
verify each question is valued at 1 point?
copy-paste the "send" link in the activity tracker sheet?

## 4. Train Instructors + Create Resources

#### In this section, you will consider:

- How will you recruit participants for your project?
- How will you coordinate your participant training?
- How will you provide support to participants as they develop resources?
- How will you coordinate who develops which resources?

Now that you have mapped out what learning resources you wish to create, identified the content and tools you intend to use for doing so, and created sample resources and guides for participants to follow, it's time to consider how you will recruit participants and run your EdTech Maker Space!

## **Generate Excitement Around Recruitment**

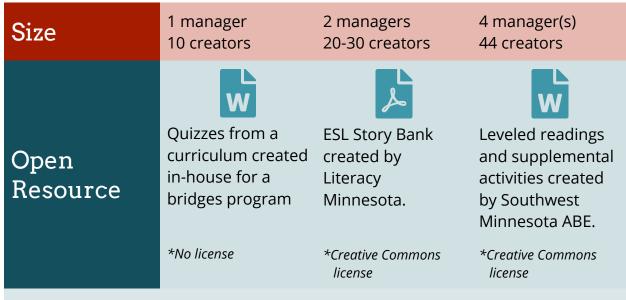
It is important to generate excitement around your EdTech Maker Space event! Many participants will be interested in joining simply because they want to help create learning resources that can be used by others, so be certain you are clear in your communications what your EdTech Maker Space project intends to accomplish and how it will benefit others.

Consider how you might engage potential partners in helping promote the EdTech Maker Space or contributing in other ways. In one of the ETMS examples referenced in this guide, the managers teamed up with a local non-profit and an educational training company. These partners helped with publicity and provided perks to the participants in the form of gift card raffles and a free certification.

Given this professional development model is somewhat unique, we recommend holding an introduction meeting or webinar to provide an overview of the project. This will help prospective participants understand the project, including what their experience will be like and what the end result of their efforts will be. At the very least, be sure your project introduction outlines the edtech tools you will be using, the resources you will be creating or curating, and the anticipated time frame and time commitment involved in participating.

## Determine What Level of Participation and Support Is Needed

Take time to consider how many participants and supporting project managers will be needed in order to accomplish your project goals. In doing so, you will need to consider the complexity of the resources that are being created. The more subjective the process of resource creation is, the more time participants will need to create the resources, and the more time managers will need to spend evaluating the resources. You also will need to consider the level of expertise of participants. The less experienced participants are with the edtech tool(s) being used, the more support will be needed for training, ongoing support, and evaluation. The table below outlines the logistics of three different projects of various scale.



\*Note: In each of these examples, the managers communicated their intent to the owners of the original resource and were granted permission to adapt and share the content.

EdTech Tool(s)		🤳 ₩	📰 Q ₩
Result(s)	Mobile-friendly	100+ literacy level	1,000+ resources
	quizzes included in	interactive reading	offered within 345
	curriculum	activities hosted	Wakelets, a
	materials for	on Literacy	learner-facing
	program	Minnesota's	mobile app, and a
	instructors	website	resource library

## Set Clear Project Expectations

Before you begin recruiting participants, consider the volume of resources they will be creating/curating, as well as the time commitment they will have to make to successfully complete both the training and the development of resources.

Given an EdTech Maker Space is professional development with service learning built in, it is likely you will have interest from people with a wide range of skill levels. In considering project requirements, be sure to establish a minimum participation requirement that is considerate of participants who

### Make Your Commitment

Minimum commitment level:

- Create **10–15** learning resources **using a single tool**
- Create complete resource sets for 5 stories



might be completely new to the technologies being used, while providing opportunities for those with more experience opportunities to do more. More experienced participants might be able to support your project by creating additional resources, sharing strategies for how they use your project's edtech tools with their learners, or making themselves available to support other participants.

We recommend using a survey tool such as Google Forms or Survey Monkey to determine potential participants' motivations for joining, their comfort levels using the technology(s) that will be part of your project, and their commitment levels.

<u>Here is a sample survey that CrowdED Learning used to recruit participants for its</u> <u>first EdTech Maker Space</u>. You will see it includes questions and prompts regarding:

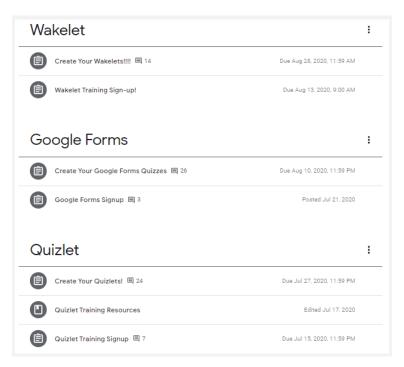
- Experience/Comfort Levels: Asking prospective participants their comfort levels using the edtech tools that will be used for resource creation will give you a sense of the types of supports you will need to provide.
- Sharing Previous Work: For this particular project, participants were given the option to skip the introductory edtech tool training if they had shared a resource they had previously created using the tool.
- Anticipated Commitment Levels: Giving participants options for commitment levels allows for flexibility based on their experience levels and their interest or ability to have varied levels of involvement in the project.

The benefit of using something like Google Forms as your recruitment/signup tool is you can then use the Google Sheet that captures respondents' information as your project roster and tracking sheet.

## Model Best Practices as You Run Your Training

Given the wide range of potential project types, this guide will not get into specifics about how to run your training. However, we do stress that as you consider how you can create opportunities to model strategies for how participants might use the edtech tools / resources being created as part of your project with their own students. For example, if participants will create vocabulary study sets in Quizlet, take time to run a Quizlet Live game during training so participants can experience what it's like to play as a student; additionally, provide time for participants to share strategies for how they use (or might use) Quizlet with their learners.

You might also wish to run your project in a learning management system (LMS), particularly if participants use a specific LMS or assignment management platform with their students. This will allow you to manage all of your communications and resource creation assignments in one place while modeling (and providing opportunities for participant discussion around) best practices.



Most importantly, create a safe, encouraging, supportive, and fun learning environment for your participants! Learning new edtech tools can be intimidating for many. Provide opportunities for participants to access whatever supports they need and to feel comfortable doing so. This might involve establishing a set of volunteer mentors or running open office hours a few days after your training so participants can ask questions that come up as they attempt to create their resources. As with all learning environments, providing opportunities for open communication and supports will help increase engagement and persistence.

## Provide an Openly Accessible Resource "Tracker"

Again, given the wide range of EdTech Maker Space project types and sizes, how you track the resources participants create will be different from project to project. If your project involves participants creating resources, we recommend leveraging a shared document such as a Google Sheet where participants have the ability to indicate which resources they intend to create and to provide links for you to access and view the resources as they are completed.

	QUIZLET	GOOGLE FORMS		WAKELET
Linked Story	CL Library URL	Forms SHARE URL	Forms COPY URL Use this URL to make a copy of the comprehension quiz to your Drive.	Wakelet URL
Mike Gets Ready for Wor	https://quizlet.com/_8k7jk5?x=1	https://forms.gle/L9SjQqCQQXQ	https://docs.google.com/forms/	https://wke.lt/w/s/2jO-kG
Greetings	https://quizlet.com/_8k7jnu?x=1	https://forms.gle/ssARR5ZrNpkV	https://docs.google.com/forms/	https://wke.lt/w/s/hgEOm
Looking Her Best	https://quizlet.com/_8k7jpw?x=	https://forms.gle/3cHNxmT3Fp5	https://docs.google.com/forms/	https://wke.lt/w/s/i8Rq8n
A Bedtime Routine	https://quizlet.com/_8k7jr9?x=1	https://forms.gle/CWuNPK9W4u	https://docs.google.com/forms/	https://wke.lt/w/s/4P36m
Winter	https://quizlet.com/_8k7jsw?x=1	https://forms.gle/xpBnsQz31fqF	https://docs.google.com/forms/	https://wke.lt/w/s/xPADS
A Sick Day	https://quizlet.com/_8k7n8v?x=	https://forms.gle/a1JV6VS9iz9Dx	https://docs.google.com/forms/	https://wke.lt/w/s/-XK0kC
Tim's Pets	https://quizlet.com/_8k7nbb?x=	https://forms.gle/b5PA4tvQXP5r	https://docs.google.com/forms/	https://wke.lt/w/s/yUCw5
A Family Outing	https://quizlet.com/_8k7ndj?x=1	https://forms.gle/EdjgVA2SRJWq	https://docs.google.com/forms/	https://wke.lt/w/s/yDzMv
Sharing a Family Meal	https://quizlet.com/_8k7nf5?x=1	https://forms.gle/qMfkxzyFKHST	https://docs.google.com/forms/	https://wke.lt/w/s/JUW6K
Water-It's Good for You	https://quizlet.com/_8lch2g?x=1	https://forms.gle/KrWzHBjwQRX	https://docs.google.com/forms/	https://wke.lt/w/s/TipudX
Joan's Home	https://quizlet.com/_8k7sar?x=1	https://forms.gle/NNi8HhPKpMg	https://docs.google.com/forms/	https://wke.lt/w/s/1xC4Fy
Lifting at Work	https://quizlet.com/_8k7scd?x=1	https://forms.gle/tkznA1GQXHTc	https://docs.google.com/forms/	https://wke.lt/w/s/5SVMr
Lynn's Kid Care	https://quizlet.com/_8k7sdp?x=1	https://forms.gle/RdZ9ys5iHLfaz	https://docs.google.com/forms/	https://wke.lt/w/s/ttzi4a
Keeping Kids Cool	https://quizlet.com/_8k7sf6?x=1	https://forms.gle/2YHdvZwTDsxk	https://docs.google.com/forms/	https://wke.lt/w/s/v7vRl
A Safe Trip to the Pump	https://quizlet.com/_8k7sg9?x=1	https://forms.gle/TzdHnqLYw5ou	https://docs.google.com/forms/	https://wke.lt/w/s/3jGCD

Using some type of resource tracking tool will make project coordination easier and allow you to review participants' work in one place.

Using a spreadsheet to track resources also makes it easier to share the finished product at the end of your project. <u>This instructor resource library</u> provides all of the links from CrowdED Learning's EdTech Maker Space project where instructors created resources (Quizlets, Forms quizzes, and Wakelets) around the Reading Skills for Today's Adults library. It was easy to create because this same spreadsheet was used by participants to enter their names next to the stories for which they wished to create resources and paste URL links to their finished resources.

## 5. Evaluate + Share Your Work

#### In this section, you will consider:

- How will you evaluate resources to ensure they are ready to be shared?
- Where will you store the resources that are created?
- In what formats will you share your resources with others?
- How will you communicate what's been created and how it can be used?

The final step of the process is one that most certainly cannot be overlooked. You've designed a project. You've selected content. You've provided guidance to instructors on how to participate. You've run training sessions. Teachers have created and submitted their content.

Remember: this is a model for *professional development*, and your participating teachers are *service learners*. Given the goal is ultimately for the resources they've created to be shared out with the world, the process is not complete unless time is taken to evaluate the work, adjust as needed, and then share the finished product with others!

## **Engage Participants in the Evaluation Process**

As mentioned multiple times in this guide, it is likely you will have participants who have varying degrees of experience with the tech tools being used in your project. In addition to being a professional development experience, the EdTech Maker Space is also essentially a big team project, so take the opportunity to leverage the talents of your participants! You may have participants who you know up front are highly proficient in the edtech tools being used in your project by way of your recruitment survey. Or, you may have some participants who demonstrate strong proficiency over the course of the project. When the time comes to begin evaluating participants' work, provide opportunities for those with demonstrated proficiency to support the evaluation process. This will help you focus on broader coordination of the project, and will get more eyes on the resources participants create to ensure they meet the level of quality and consistency you expect.

## Don't Save Evaluation for the End!

For our project we had a teacher who was new to using Google Forms and forgot to add point values to each question. Had we evaluated their first Form as a required part of the process before setting them off to create more, we would have corrected this from the start. Instead, we had to go back and make this correction to multiple Forms because we did not catch it up front.

Just like any learning process, building in formative "checks" provides opportunities for feedback so learners can confirm their understanding and move forward with confidence. My recommendation is to have an evaluation 'team' established at the beginning of the project and to be active in the evaluation process from the very start."

~Jeff Goumas, Digital Learning Lead, The EdTech Center@World Education

## **Consider Where Finished Products Will Live**

As you work to finalize the resources from your EdTech Maker Space, you also need to consider where the finished products will be stored. If your project is leveraging tools such as Quizlet, Formative, or other tools, participants will be creating their resources within their own accounts. While this is fine (and necessary) as part of the resource creation process, it is strongly advised that the actual files that are shared are housed in a place where you can ensure they will not disappear.

For example, if participants are creating resources using Google Slides, you may wish to have them develop the resources within a shared folder on a Drive that you manage. Or, if they are creating Quilzlets in their own account, you may wish to make a copy of their Quizlet, add it to your account, and make that version the one that gets shared as the final product. By storing the final resources to be shared in your organizations own accounts, you can ensure resources don't accidentally disappear because of files being deleted or moved or accounts being closed by participants in the future.

## Share Your Resources with the World!

As we've stressed, a key component of the EdTech Maker Space process is to ensure the resultant resources are *reusable*. This does not stop at simply having a finished product. Beyond generating great resources that are freely available and designed with end users in mind, how others find, view, copy, and share your content are all factors to consider when thinking about its usability.

It is helpful to provide your project's resources in multiple formats and in a central place where they are easy to access, easy to explain, and easy to review by others who might wish to use them. For the Marshall Leveled Reading Program—the end result of CrowdED Learning's first EdTech Maker Space project—the resources were offered in a variety of ways.

Wakelet Library	Learner-facing App	Resource Library
Each Wakelet can be shared and assigned as-is via Google Classroom, Remind, a share link, or copied to a teacher's account to be customized. Students can also be directed to the appropriate level for self- guided reading practice.	The mobile app is designed specifically for self-guided reading practice. It contains the exact same content as the Wakelets; however, students can explore readings by both topic and level and track their completion as they read.	The <u>resource library</u> is available as a downloadable Google Sheets or Microsoft Excel document. It contains links to every Quizlet, Google Forms quiz, and Wakelet so instructors can quickly grab and copy those resources they wish to use.

#### All of these options were listed on a dedicated page of the CrowdED Learning

website, along with an explanation of the project, attribution for who participated in creating the resources, and information for how the resources could be used.