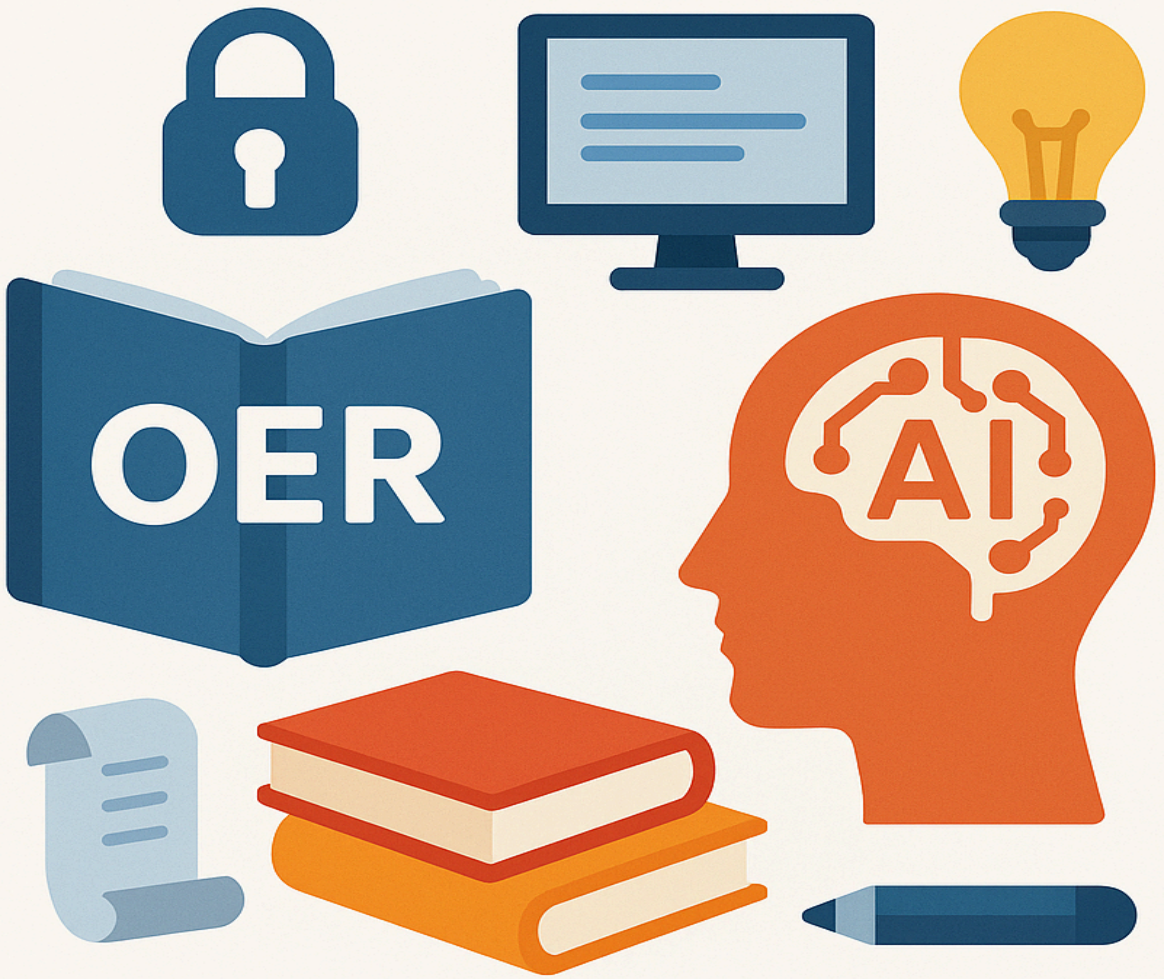
OER/AI GUIDE

Open Educational Resources and Artificial Intelligence



Introduction

1.1 Purpose of the Guide

The rapid evolution of Generative AI is transforming the landscape of educational content creation, making it faster, more adaptable, and increasingly accessible. At the same time, the movement toward Open Educational Resources (OER) continues to expand equitable access to high-quality learning materials. This guide brings these two powerful forces together with a central aim: to empower faculty, instructional designers, and content creators with the knowledge and tools needed to effectively integrate Generative AI into the development of OER.

This guide was developed to provide clear, practical, and ethically grounded guidance for those interested in leveraging AI to enhance or create open content. Whether you are just beginning to explore OER or are seeking new ways to scale your content creation efforts, this resource offers a step-by-step process, curated tool recommendations, and real-world examples to support your work. Special attention is given to the ethical use of AI, inclusive design practices, and the technical considerations unique to working within higher education settings.

Designed with Wisconsin Technical College System (WTCS) faculty and instructional designers in mind, but applicable across disciplines and institutions, this guide serves as both an introduction and a roadmap. Our goal is to spark innovation, foster collaboration, and remove barriers so that high-quality, learner-centered resources can be shared, remixed, and reimagined for years to come.

1.2 Definition of OER

Open Educational Resources (OER) are freely accessible, openly licensed teaching and learning materials that educators can use, adapt, and share with minimal restrictions. These resources are designed to enhance educational access and affordability while supporting innovative instructional practices. OER can include a wide variety of materials—from full courses and textbooks to lesson plans, videos, assessments, and software tools. The use of OER enables faculty to customize content to meet the diverse needs of students, reduce textbook costs, and promote more equitable learning experiences.

- Option #1: OER Video
- Option #2: The OERs–Open Educational Resources

Community colleges serve a diverse and often underserved student population, including a high percentage of first-generation college students, adult learners, part-time students, and individuals from low-income and minority backgrounds. According to the American Association of Community Colleges (2024), nearly 40% of community college students are the first in their families to attend college, and over 60% receive some form of financial aid. Open Educational Resources (OER) significantly benefit these students by eliminating the high cost of traditional textbooks, which can often exceed the tuition cost for some courses. Research shows that using OER can lead to increased course completion, higher grades, and lower withdrawal rates, particularly for low-income students (Colvard, Watson, & Park, 2018). These benefits directly support the mission of community colleges to provide accessible, affordable, and equitable education. Additionally, OER allows faculty to tailor content to meet the specific needs of their

diverse student populations, fostering greater engagement and inclusivity in the learning experience (Hilton, 2016).

The 5Rs of OER

Retain

Retaining refers to the right to make, own, and control copies of the educational resource. This means faculty and learners can download, store, and access OER at any time without relying on external servers or risking the resource becoming unavailable. By retaining content, educators can ensure they have consistent access to the materials they need, even if the original source is moved or removed. This control over educational materials supports long-term use and archiving for future classes or reference.

Reuse

Reusing OER means utilizing the resource in various ways without restriction. Faculty members can incorporate OER into their teaching practices, whether in face-to-face classes, online learning platforms, study groups, or professional development settings. Reuse encourages the integration of high-quality educational materials into various learning environments, enabling the seamless incorporation of OER into courses and broader educational programming.

Revise

Revising an OER involves adapting, modifying, or altering the resource to meet specific educational needs. Faculty can edit the content to align with course learning objectives,

cultural contexts, or the needs of students. For instance, an instructor may translate the text into another language, adjust the material's complexity, or update the information to reflect recent developments. Revising ensures that OER stays relevant and responsive to the unique learning requirements of each institution and classroom.

Remix

Remixing takes revision a step further by combining the original or revised OER with other open resources to create entirely new, customized educational materials. This might involve merging multiple modules, adding multimedia elements, or integrating new case studies or examples. Faculty can design engaging, interdisciplinary content tailored to their students' needs and interests, fostering creativity and collaborative learning experiences that go beyond the limitations of traditional resources.

Redistribute

Redistribution allows educators and institutions to share the original or revised versions of OER with others. This can involve posting resources to OER repositories, sharing them with colleagues, or distributing them directly to students. Redistribution promotes open sharing and broadens access to educational materials, fostering a culture of collaboration and continuous improvement. By sharing OER, faculty contribute to a global educational community where resources are freely available to everyone.

Creative Commons Licenses for OER

Creative Commons (CC) licenses are a set of standardized, open copyright licenses that allow content creators to specify how others can use their work. These licenses are

essential to OER because they provide clear permissions for retaining, reusing, revising, remixing, and redistributing educational materials. Each license helps educators and institutions understand what they can do with an OER resource.

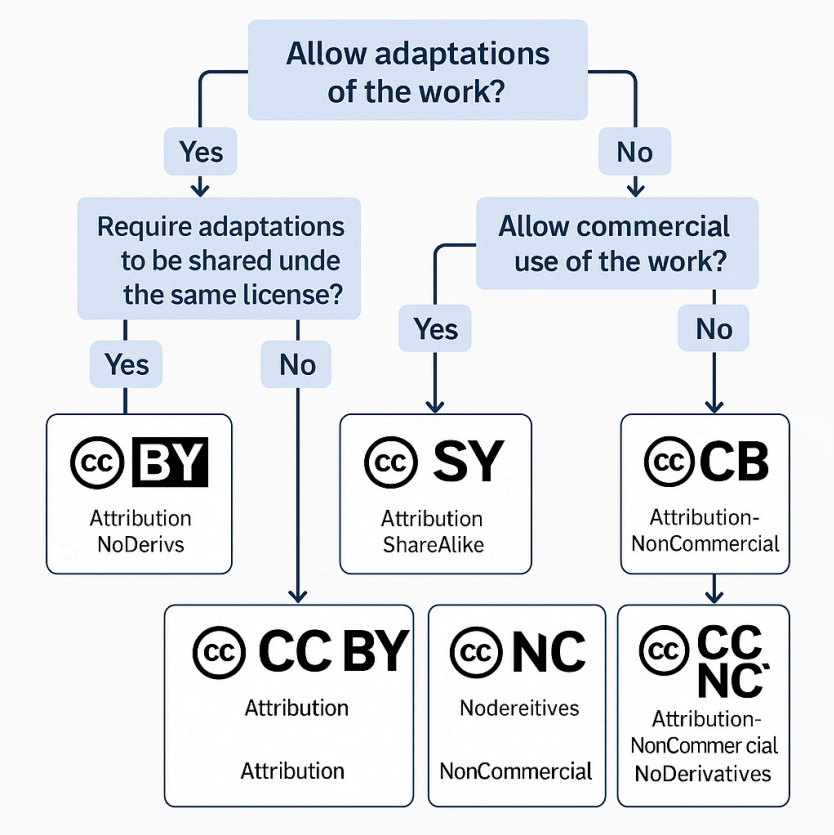
There are six main Creative Commons licenses, each with varying levels of openness:

- **CC BY (Attribution)**: The most open license, allowing users to distribute, remix, adapt, and build upon the work—even for commercial purposes—as long as they credit the creator
- **CC BY-SA (Attribution-ShareAlike)**: Allows for adaptation and remixing, including commercial use, but requires sharing new creations under the same license.
- **CC BY-ND (Attribution-NoDerivs)**: Allows for redistribution, both commercial and non-commercial, but no derivative works or adaptations can be made.
- **CC BY-NC (Attribution-NonCommercial)**: Allows remixing and adaptation, but only for non-commercial purposes, with credit to the creator.
- **CC BY-NC-SA (Attribution-NonCommercial-ShareAlike)**: Similar to CC BY-SA, but only for non-commercial purposes.

  CC BY-NC-ND (Attribution-NonCommercial-NoDerivs): The most restrictive, allowing only non-commercial sharing with attribution and no modifications.

These licenses ensure that educators and learners understand their rights and obligations when using, adapting, and sharing OER materials. By selecting an appropriate CC license, creators can clearly communicate the terms of use, encouraging broader access and collaboration while protecting their intellectual property.

[5Rs and Creative Commons Video]



OER Relevance to Community Colleges

Open Educational Resources (OER) are playing an increasingly pivotal role in community college settings, offering both educators and students numerous benefits that address key challenges in higher education. One of the primary advantages of OER is its ability to significantly reduce the financial burden on students. According to research by Hilton (2016), students at institutions that adopt OER materials experience substantial cost savings, with many students saving hundreds of dollars per semester. This financial relief is particularly impactful at community colleges, where students often come from diverse socio-economic backgrounds and face barriers to educational access and completion.

Beyond cost savings, OER promotes equity and inclusivity by providing all students with immediate, unrestricted access to learning materials from the first day of class. A study conducted by Colvard, Watson, and Park (2018) at the University of Georgia found that students in OER courses not only saved money but also performed better academically, with improvements in grades and course completion rates. These findings underscore the transformative potential of OER to foster more equitable learning environments in community colleges, where many students are first-generation college attendees, working adults, or from underrepresented groups.

Moreover, OER empowers faculty to adapt and customize instructional materials to better align with course objectives and student needs. Wiley, Bliss, and McEwen (2014)emphasize how faculty can revise and remix OER to incorporate culturally relevant examples, up-to-date information, and innovative pedagogical approaches, thereby enhancing student engagement and learning outcomes. This flexibility is especially valuable in community college settings, where faculty often teach a broad range of courses catering to diverse learners with varying levels of preparedness.

OERs are a vital tool in community colleges, helping reduce costs, improve student outcomes, and enable faculty to create more inclusive and adaptive learning experiences. The combination of affordability, accessibility, and adaptability makes OER an essential component in advancing educational equity and success in community colleges.

The use of Open Educational Resources (OER) has a significant monetary impact on college students by drastically reducing the cost of course materials. Traditional college

textbooks can cost students hundreds of dollars per semester, with the average student at a four-year public college spending approximately $1,200 annually on books and supplies (College Board, 2023). OER, which are freely accessible and openly licensed instructional materials, offer a cost-effective alternative by eliminating or minimizing textbook expenses. This can be especially beneficial for students from low-income backgrounds, who may otherwise delay or forgo purchasing textbooks altogether, decisions that can negatively impact their academic success.

Research supports the financial benefits of OER adoption. Research also revealed that students enrolled in OER courses saved significant amounts of money and had improved academic outcomes, particularly for Pell Grant recipients, part-time students, and students from underrepresented groups. OER not only reduces costs but also does so without sacrificing quality or academic performance. These findings underscore the broader economic implications of OER adoption, including increased access to education and decreased student debt, making them a powerful tool in addressing affordability and equity in higher education.

The 2022 Florida Virtual Campus Student Textbook and Instructional Materials Survey presents a comprehensive analysis of how textbook and course material costs affect student success in Florida's public colleges and universities. With over 13,000 student respondents, the survey found that while textbook costs are trending downward, they continue to pose financial and academic challenges. More than half of the students reported choosing not to purchase required materials due to cost, and many indicated the expense influenced decisions such as course load, registration, and academic performance.

Key findings show that students are employing a variety of strategies to save money, including renting digital textbooks and purchasing from non-campus sources. However, the rise of digital-only content has limited traditional cost-saving options, such as sharing or reselling textbooks. While some students benefit from fee-based inclusive access programs, the majority are either unaware of them or unsure of their effectiveness. Notably, 82% of students still value having a low-cost print option in addition to digital access.

Encouragingly, the use of Open Educational Resources (OER) is increasing, with 44.4% of students having encountered at least one course using OER. Despite this progress, the report emphasizes that more institutional support and faculty engagement are needed to scale OER adoption. Ultimately, the findings support ongoing efforts to make learning materials more affordable and accessible, highlighting OER as a promising strategy to improve educational equity and reduce barriers to student success.

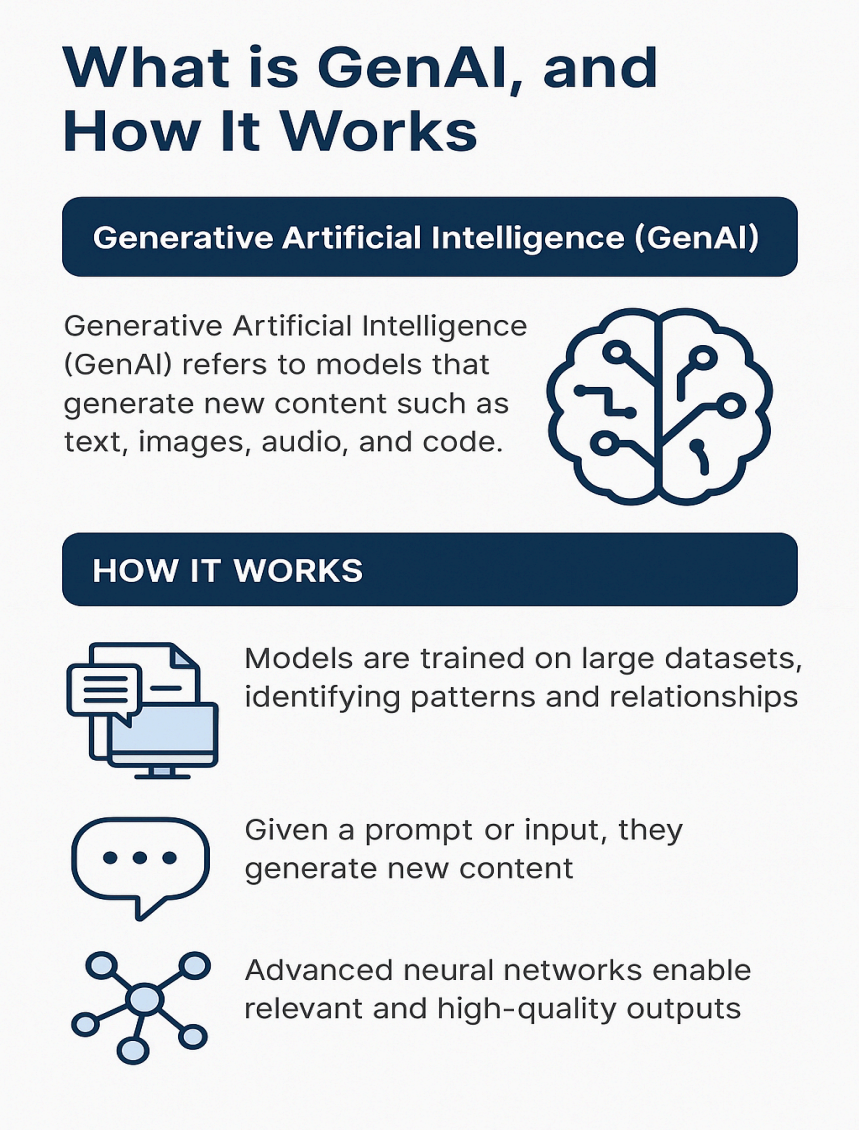
1.3 Overview of Generative AI

Generative Artificial Intelligence (GenAI) is transforming the educational and workplace landscapes by enabling the creation of new, original content through machine learning models trained on vast datasets. GenAI tools—such as ChatGPT, DALL·E, and others—generate text, images, audio, and more by recognizing patterns and relationships within their training data and then extrapolating to create novel outputs. This technology is already reshaping teaching and learning by enabling personalized educational experiences, automating content creation, and promoting collaborative knowledge building.

In the workplace, GenAI streamlines workflows, enhances decision-making, and supports innovation. As this technology continues to evolve, its integration into education and professional environments promises to unlock new opportunities for creativity, efficiency, and skill development, preparing learners and workers alike for the demands of a rapidly changing world.

GenAI Overview and How It Works

Generative Artificial Intelligence (GenAI) refers to a class of machine learning models designed to generate new and original content, such as text, images, audio, and code, by identifying patterns and relationships within large datasets. These models are trained on vast amounts of data—from books, articles, websites, and images—enabling them to "understand" language, visual elements, or other types of content. When given a prompt or input, GenAI models use their training to predict and create new content that is relevant, coherent, and often indistinguishable from human-generated material. This process is powered by advanced neural networks, especially transformer-based architectures like OpenAI’s GPT (Generative Pre-trained Transformer) models, which allow the AI to process context and produce creative, high-quality outputs.



Transforming Teaching and Learning

Generative Artificial Intelligence (GenAI) is transforming teaching and learning by enabling more personalized, efficient, and engaging educational experiences. GenAI models, such as Gemini, ChatGPT, and DALL·E, are already being used to create adaptive learning content, automate feedback, and provide on-demand tutoring, allowing students to receive tailored support that meets their unique needs and learning styles. For educators, genAI streamlines lesson planning and curriculum development by

generating lesson plans, quizzes, case studies, and multimedia resources. This shift allows teachers to focus more on facilitating learning and fostering critical thinking, rather than on repetitive content creation.

In the classroom, GenAI fosters active learning by enabling students to interact with AI-driven simulations, virtual tutors, and collaborative tools that encourage exploration and problem-solving. By integrating AI-generated materials into learning management systems and digital platforms, educators can create immersive learning environments where students experiment with ideas, receive instant feedback, and develop real-world skills such as creativity and adaptability.

Future of GenAI in education/workplace

Looking ahead, the future of GenAI in education promises even greater transformation. Emerging technologies will allow for real-time language translation, inclusive design for learners with disabilities, and highly customizable learning pathways. In the workplace, GenAI will continue to fuel upskilling and reskilling efforts, enabling organizations to adapt quickly to industry changes by providing employees with targeted, AI-generated training modules. As the technology matures, the boundary between formal education and lifelong learning will blur, making continuous, personalized learning a cornerstone of both academic and professional success.

GenAI in Education Resources to Explore

Both resources below were created using NotebookLM, a powerful large language model (LLM) platform designed to help process and understand large amounts of information.

Content from the OER/AI guide's Padlet was used to develop each podcast. While the podcasts differ in style, they both demonstrate how course content can be repurposed to enhance student comprehension..

- NotebookLM Podcast #2: AI in Higher Education Podcast created in NotebookLM with curated resources in the Padlet. NotebookLM Podcast #2 Transcription
- NotebookLM Podcast #1–Audio and transcription. The podcast was downloaded and uploaded to a video/audio editing platform.

2. Benefits and Challenges of Using Generative AI in OER Development

2.1 Benefits

Speed and Scalability

- AI can instantly generate lesson plans, quizzes, and feedback.
- OER materials can be easily shared and customized across various platforms.
- Together, they scale content delivery from individual learners to entire systems.

One of the most significant benefits of integrating AI and OER in education is the remarkable speed and scalability they offer. AI tools can rapidly generate educational materials, assessments, and feedback, reducing the workload on educators and enabling them to focus more on pedagogy and student engagement. OER platforms, by nature, allow for wide distribution and access to learning resources. When paired with

AI-driven customization, these resources can be efficiently scaled to reach vast audiences, making high-quality content accessible to all.

Enhanced Accessibility and Inclusivity

- AI supports real-time translation, adaptive learning, and assistive tools like text-to-speech and captioning.
- OER eliminates cost and licensing barriers, supporting equity in access.
- Together, they support learners with disabilities, language needs, and varied socio-economic backgrounds.

AI and OER contribute to more inclusive learning environments by addressing the diverse needs of students. AI technologies provide personalized support, enabling learners with disabilities or language barriers to fully participate. OERs' open licensing removes cost-related obstacles, enabling all students to access the same high-quality resources, regardless of their background.

Support for Multiple Formats

- AI and OER enable the creation of multimodal content: text, audio, video, and simulations.
- Materials can be adapted to fit different learning styles and preferences.
- AI can enhance OER with features such as visual aids, interactive quizzes, and concise summaries.

This variety enables a richer and more flexible learning experience. For example, a textbook can be paired with AI-generated tools that make it more interactive and engaging. This multimodal approach boosts learner engagement and supports better retention.

Cost Efficiency

- OER materials are free and openly licensed.
- AI automates instructional and administrative tasks, reducing labor costs.
- Together, they lower institutional expenses and improve affordability for students.

Both AI and OER help reduce the financial burden of education. While OER reduces textbook and licensing costs, AI can streamline operations and free up educator time. This combination makes education more affordable and sustainable, particularly for community colleges and institutions committed to equity and access.

2.2 Challenges

Accuracy and Hallucination Risks

One of the primary challenges in using generative AI for OER development is the risk of factual inaccuracies and hallucinations, where the AI generates information that appears plausible but is incorrect or fabricated. While AI tools can rapidly produce drafts, explanations, examples, or quiz questions, their output requires close review to ensure academic rigor and factual correctness. This limitation can undermine the credibility of educational content if left unchecked. However, when used responsibly in conjunction with expert review, generative AI can still enhance content development by accelerating the initial creation process, especially for outlining, summarizing, or adapting existing materials to new audiences or reading levels.

Training and Professional Development

Integrating generative AI into OER development demands thoughtful investment in faculty and staff training. Educators and instructional designers must be equipped not only with technical know-how but also with critical literacy to evaluate, revise, and ethically apply AI-generated content. Professional development programs can empower educators to co-create with AI, boosting efficiency and fostering innovation in curriculum design. At the same time, a lack of training may lead to overreliance on AI outputs, missed pedagogical opportunities, or inadvertent propagation of bias and misinformation. Therefore, building AI fluency across institutional roles is essential to maximizing its potential while mitigating its risks.

Ethical Considerations, IP Rights, Licensing, and Copyright

Generative AI presents complex ethical and legal questions in the context of OER creation. A key challenge lies in ensuring that AI-generated content respects intellectual property (IP) rights, especially when models are trained on copyrighted data. Educators must verify that outputs align with Creative Commons licensing practices, and institutions should guide faculty in labeling and licensing AI-assisted content appropriately. On the positive side, AI can help remix and adapt existing open materials more efficiently, promoting the core principles of OER—reuse and redistribution. However, clear institutional policies and ethical guidelines are necessary to prevent copyright infringement and ensure transparency regarding authorship and content provenance.

Data Privacy and FERPA Compliance

The use of generative AI in education must be aligned with strict data privacy standards, particularly in relation to student data protected under the Family Educational Rights and Privacy Act (FERPA). When AI tools are used to create personalized learning experiences or generate content based on student input, institutions must ensure that no personally identifiable information is stored, shared, or exposed without proper consent. Many popular AI platforms operate through third-party servers, raising concerns about where data is processed and how it is secured. On the upside, AI can support anonymized analytics to improve resource design or accessibility. Nonetheless, selecting AI tools that comply with data protection laws is crucial for safeguarding student privacy and maintaining institutional integrity.

3. Step-by-Step Process for Creating OER with Generative AI

Step-by-Step Process for Creating OER with Generative AI

Creating Open Educational Resources (OER) using Generative AI tools such as Gemini—Google's multimodal AI assistant—offers faculty a scalable, creative, and accessible method to design engaging, inclusive, and student-centered content. Having a structured process not only improves efficiency but also ensures that your resources are high-quality, pedagogically sound, and adaptable for various learning environments.

This guide is designed to support educators from ideation to publication. It emphasizes Gemini as the primary AI tool for its versatility across text, image, and video generation, while also referencing additional AI platforms as helpful complements. Following a process allows you to maintain academic rigor, meet accessibility standards, and confidently publish resources that benefit learners across contexts.

3.1 Planning Your OER Project

Before diving into AI tools, begin with intentional instructional design.

- **Define Learning Outcomes**

  Begin with the end in mind. Clearly define what students should know or be able to do by the end of the module, chapter, or unit. Use the course outcome

summary as a guide. This document can be located in the Worldwide Instructional Design System (WIDS).

- **Decide on Format**

  Determine the most appropriate format for your content. This may be an open textbook, a collection of worksheets, a digital slide deck, an instructional video, or an interactive simulation.

- **Know Your Audience**

  Understand who you're designing for. Are they first-year students? ESL learners? Online-only learners? Tailoring content to their needs and interests improves engagement and learning outcomes.

- **Select a Delivery Method**

  Will this resource be used online, in person, or in a hybrid format? The delivery method influences media choices, accessibility strategies, and structure.

- Finding OER Content:
  - *Resources to Consult:*

    College librarians and WTCS OER Leads offer valuable support.
  - Browse OpenStax for structured formats and
  - Pressbooks Directory for layout inspiration.
  - You may also use this action plan worksheet to guide your thought process.

3.2 Prompting Frameworks for College Professors: Enhancing AI and OER Use Across Disciplines

The prompting frameworks below are five adaptable frameworks designed to help educators create effective, discipline-specific prompts for use with generative AI tools and Open Educational Resources (OER). These frameworks foster critical thinking, creativity, and ethical engagement across a broad range of academic disciplines, while promoting accessible and collaborative learning.

Additionally, these frameworks can be adapted for classroom use, assignment design, or professional development. Encourage students to co-create prompts using these structures to build AI fluency, engage with OER, and develop critical digital literacy skills.

IDEAL Prompt Framework

Best For: Designing AI + OER prompts aligned with instructional goals

- **I**ntention: What is the goal of the prompt? (e.g., summarize, remix, critique)
- **D**iscipline: Which academic field or subject area is this for?
- **E**vidence Level: What kind of sources should be included? Can students incorporate or adapt OER?
- **A**udience: Who is the intended reader or viewer of the response?
- **L**imitations: Are there boundaries such as tone, word count, licensing, or citation style?

Sample Prompt:

"Remix an existing OER case study related to workplace burnout in nursing to create a short, interactive teaching resource for faculty development. Use AI to help generate discussion questions, and cite all reused OER appropriately."

RAISE Prompting Framework

Best For: Encouraging reflective, analytical, and open-source engagement

- **R**eflect: Connect content to personal experience or previous learning
- **A**nalyze: Break down OER content, AI-generated outputs, or research materials
- **I**nquire: Use AI to explore deeper questions or identify gaps in OER
- **S**ynthesize: Combine perspectives or remix OER with AI support
- **E**valuate: Assess quality, relevance, or alignment with learning goals

Sample Prompt:

"Analyze an OER textbook chapter and use AI to compare it with a peer-reviewed article on the same topic. Evaluate how well the OER supports diverse learners and propose improvements."

SOLO Taxonomy Prompt Framework

Best For: Scaffolding AI and OER use to build a deeper understanding

- **Prestructural:** Define or list key terms using an OER glossary or AI-generated list
- **Unistructural:** Use AI to explain one concept from an OER text
- **Multistructural:** Summarize or compare multiple ideas across OERs
- **Relational:** Use AI to create a concept map showing relationships between OER materials
- **Extended Abstract:** Remix or adapt OER content to address a new context using AI support

Sample Prompt:

"Create examples at each SOLO level for students learning about climate change using

material from an OER textbook. Use AI to rephrase and adapt examples for clarity and accessibility."

C.R.A.F.T. Prompt Design

Best For: Designing real-world, OER-informed projects with AI

- **C**ontext: Define the real-world or classroom application
- **R**ole: Assign a relevant role (e.g., teacher, researcher, policymaker)
- **A**udience: Specify who will use or benefit from the resource
- **F**ormat: Choose a deliverable format (e.g., infographic, case brief, podcast)
- **T**opic: Identify the subject and OER source materials

Sample Prompt:

"As an instructional designer, use an OER module on financial literacy to design an infographic for community college students. Use AI to summarize complex terms and generate icons."

PROMPT-E Framework

Best For: Teaching ethical, mindful AI and OER integration

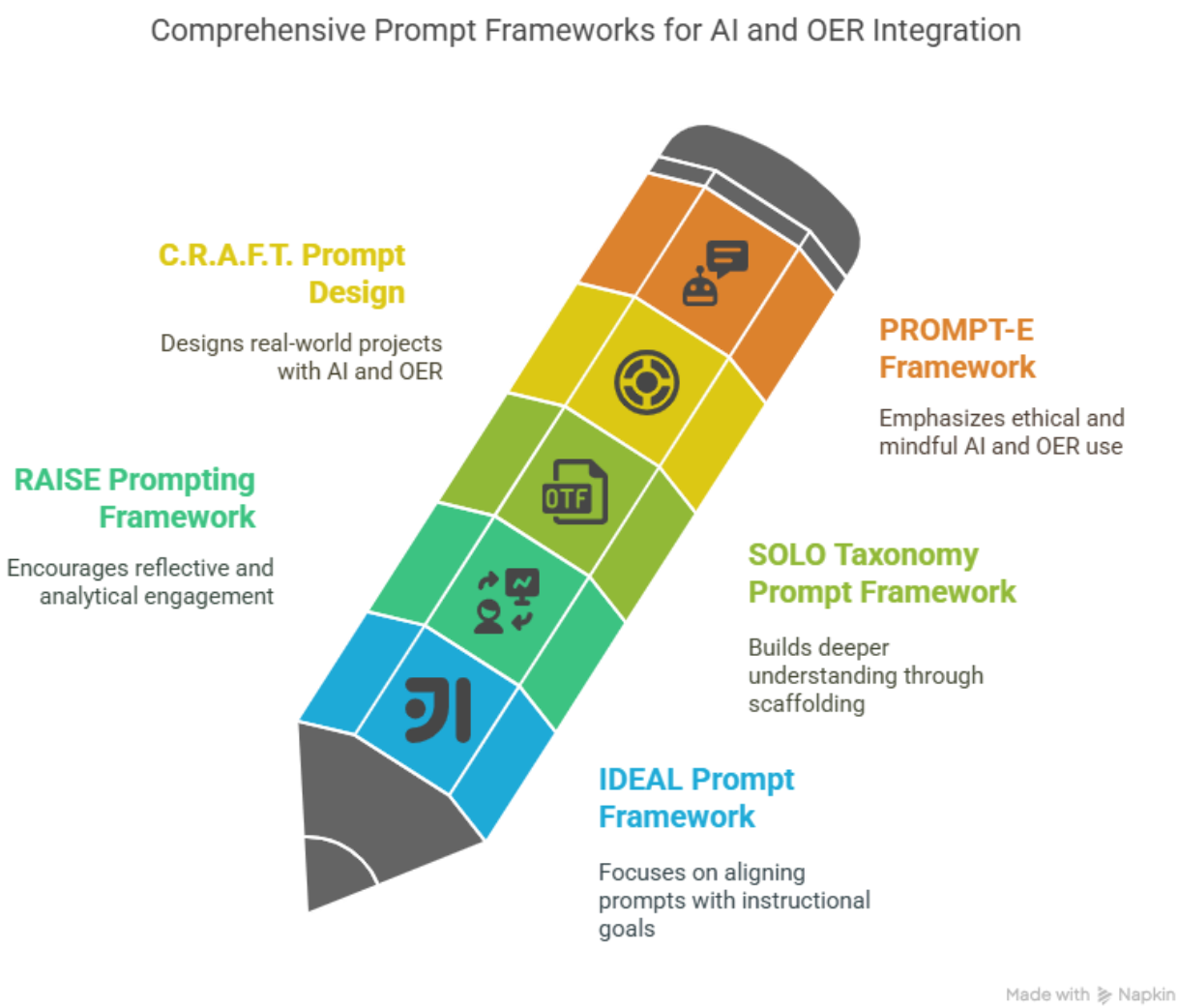
- **P**urpose: Clarify the learning goal (e.g., remix, compare, reflect)
- **R**eliability: Define use of sources, including vetted OER
- **O**riginality: Encourage adaptation of OER and original input
- **M**ethod: Define a process for using AI and citing OER
- **P**otential Bias: Consider inclusivity in AI outputs and OER materials

- **T**one: Choose a tone appropriate to the audience and purpose
- **E**thical Use: Emphasize academic integrity, AI disclosure, and OER licensing

Sample Prompt:

"Prompt ChatGPT to help rewrite a Creative Commons-licensed article on AI in education for a student audience. Check AI outputs for bias and cite the OER source correctly."

[Prompting Frameworks Handout]



3.3 Producing Initial Drafts

Now you're ready to start generating content, consider using the LLM- Gemini to experiment with. See Appendix A for sample prompts for additional guidance..

- **Text-Based Content**
  Use Gemini to draft chapters, module overviews, case studies, summaries, and glossaries. Specify tone and complexity. Use the prompts in Appendix A to generate written instructional materials, such as chapters, overviews, and glossaries.

- **Quizzes & Assessments**
  Request that Gemini generate formative and summative assessment items, including multiple—choice, short-answer, true/false, and scenario-based questions.

- **Scripts for Multimedia**
  Use AI to draft scripts for instructional videos, podcasts, or narrated slide decks. These can later be recorded or animated.

- **Images & Audio**
  Use Gemini or complementary tools like DALL·E, NapkinAI, NotebookLM to create custom illustrations, infographics, or audio narration.

Explore Tools:
Use OASIS and Mason OER Metafinder to ensure your content fills a unique gap or aligns with existing resources. Explore WISC-ONLINE for interactive content examples and LibreTexts to explore remixing with your drafts.

3.4 Polishing and Reviewing

AI output is rarely final. Invest time in reviewing and refining.

- **Editing and QA**
  Revise content for clarity, academic tone, and consistency. Run drafts through Gemini again with prompts like "Simplify this for ESL learners" or "Improve engagement with examples."

- **Peer/Faculty/Student Review**
  Engage colleagues and students in review. Provide a structured rubric focused on clarity, engagement, accuracy, and alignment with outcomes.

- **Accessibility and UDL Alignment**
  Ensure resources include alt text, readable fonts, sufficient color contrast, and multiple engagement options. Consider captions, screen-reader compatibility, and inclusive examples.

Need Help?
Reach out to the **Community for Open Wisconsin** or your **college library** for review and accessibility support. OER champions are available to guide you.

3.5 Publishing and Sharing

Finalize your OER and share it with the world.

- **Choosing Licenses**

  Use a Creative Commons license that reflects how you want others to use and adapt your work. Visit CreativeCommons.org for licensing guidance.

- **Publishing Options**

  Upload to platforms like Pressbooks, OER Commons, or Skills Commons. You can also share content via institutional repositories or Learning Management Systems (LMS).

- **Promoting the Resource**

  Promote your work through professional communities like CCCOER, department newsletters, LinkedIn, and educational listservs.

- MATC OER Library Link

4. Recommended Generative AI Tools and Technologies

Selecting the right generative AI tools can significantly enhance your efficiency, creativity, and ability to meet diverse learning needs when developing OER. This section outlines key categories of tools—ranging from text generators to accessibility solutions—that support the planning, production, and refinement of open educational resources.

4. GenAI Tools

4.1 Text Generation Tools

These AI platforms help generate written content, including learning objectives, lesson summaries, quiz questions, scripts, and even discussion prompts. While each has unique features, they all offer powerful natural language generation capabilities.

Popular Tools:

- **Gemini (by Google)** – Ideal for educators in Google Workspace environments. Gemini integrates well with Docs, Sheets, and Slides for streamlined content development..
- **ChatGPT (by OpenAI)** – Excellent for conversational content, question generation, and rapid ideation across various formats.
- **Claude (by Anthropic)** – Known for its thoughtful responses and extended context handling—great for drafting long-form OER materials.
- **Perplexity AI** – Blends web search with AI response generation, helpful for sourcing current events or supplemental open resources with citations.

- **NotebookLM** – an AI-powered research and writing tool by Google that helps you organize, summarize, and generate content from your uploaded documents.

4.2 Visual and Media Tools

Generative AI can support the development of engaging, multimedia-rich OER content. These tools help you transform text into visuals, summarize ideas, and create videos, presentations, or interactive graphics that enhance learner engagement.

Recommended Tools

- **Canva (with Magic Design/AI tools)** – Quickly generate branded slides, infographics, worksheets, and other visual learning aids.
- **NotebookLM** – AI-powered research and writing assistant that helps you organize, summarize, and generate insights from your documents, notes, and sources.
- **Gamma** – Create elegant, interactive slide decks and visual documents using AI-powered design and formatting. Great for storytelling with clean visuals.
- **Napkin.ai** – Turn raw notes or messy ideas into structured summaries, flowcharts, and concept visuals—ideal for simplifying complex concepts for learners.
- **DALL·E** – Generate custom images and illustrations to complement OER materials.
- **Pictory or Lumen5** – Turn text scripts into engaging explainer videos, perfect for flipped classrooms or asynchronous content delivery.

4.3 Planning and Collaboration Tools

Effective OER development requires collaboration, version control, and structured workflows. These tools support ideation, drafting, feedback, and project management.

Useful Tools

- **Google Workspace (Docs, Sheets, Slides)** – Collaborative writing and editing, especially when paired with Gemini.
- **Notion or Evernote**– Combine note-taking, databases, and AI writing to organize your OER project pipeline.
- **Trello or Asana** – Task tracking and workflow planning, ideal for team-based OER initiatives.
- **Padlet or Miro** – Collaborative whiteboards for brainstorming and mapping OER modules.

4.4 Accessibility Support Tools

Ensuring your OER materials are accessible to all learners is non-negotiable. These tools help align your content with Universal Design for Learning (UDL) and accessibility standards.

Accessibility Enhancers:

- **Microsoft Immersive Reader** – Enhances reading comprehension with adjustable text spacing, read-aloud, and translation features.

- **Google Accessibility Tools** – Includes screen reader compatibility, voice typing, and alt-text recommendations for Docs and Slides.
- **Blackboard Ally** – Integrates with Blackboard to check content accessibility and offer alternative formats (e.g., HTML, ePub, audio).
- **WAVE Web Accessibility Tool** – For auditing web-based OER content to ensure WCAG compliance.

5. Ethical Considerations

As educators and content creators, we have a responsibility to ensure that Open Educational Resources (OER) and AI tools are used in an ethical, inclusive, and equitable manner. This section examines the foundational ethical principles and practical steps necessary to maintain integrity, transparency, and accessibility in the creation of OER using generative AI.

5.1 Ethical Use

Ethical use of generative AI in OER development involves more than just citing sources—it requires a commitment to transparency, fairness, and accuracy. Whether you're generating content, revising existing material, or collaborating with AI tools, consider these key practices:

Transparency Framework

- Clearly indicate when AI tools are used to generate content, including images, quizzes, or text, to ensure transparency and accountability.

- Include disclaimers or notes when generative outputs may not reflect human expertise or may need further review.
- Share your workflow and toolset to help others replicate or evaluate your process.

Attribution

- Follow proper citation practices for both human and AI-generated content.
- Use Creative Commons attribution formats where applicable.
- Credit AI tools in acknowledgments or footnotes (e.g., “Generated with assistance from ChatGPT”).

Avoiding Bias and Misinformation

- Review AI-generated content critically to ensure it reflects diverse perspectives and avoids stereotypes.
- Cross-check facts with reliable sources to minimize the risk of spreading misinformation.
- Avoid overreliance on AI for sensitive topics or personal experiences, especially those related to race, gender, or culture.

5.2 Inclusive and Accessible Design

Creating OER that is inclusive and accessible ensures all learners—regardless of ability, background, or language—can engage meaningfully. Use the following design principles and tools to support equity and usability.

UDL (Universal Design for Learning) Principles

- Offer **multiple means of representation** (e.g., text, video, audio).
- Provide **multiple ways for learners to engage**, such as discussion forums, visual tools, and real-world activities.
- Include **multiple modes of expression**, like infographics, presentations, or voice recordings.

Tools to Check Accessibility

- **Microsoft Accessibility Checker** (in Word, PowerPoint)
- **Blackboard Ally Accessibility Reports**
- **WAVE Web Accessibility Tool**: Free online scanner to review web-based content
- **Grackle for Google Docs/Slides**: Checks documents for WCAG compliance
- **Accessibility and UDL Checklist:** A practical checklist to help faculty and course designers ensure digital learning materials are accessible, inclusive, and aligned with Universal Design for Learning (UDL) principles.

Tips for Multilingual Design

- Use **clear, plain language** to improve readability and translation accuracy.
- Avoid idioms, slang, or culturally specific references unless explained.
- Use tools like **DeepL**, **Google Translate**, or **Microsoft Translator** to support multilingual versions—but always have a fluent speaker review for accuracy.
- Provide transcripts and captions for all media content, which supports both multilingual access and accessibility.

AI and OER best practices

Integrating Artificial Intelligence (AI) and Open Educational Resources (OER) in higher education presents a powerful opportunity to increase access, reduce costs, and personalize learning. Below are the best practices that institutions can follow to implement AI and OER effectively:

- **Align with Institutional Strategy:** Ensure that AI and OER initiatives support the institution's strategic goals, including student retention, equity, cost savings, and innovation.
- **Invest in Faculty Development:** Provide training on using AI tools (e.g., adaptive learning platforms, AI writing assistants) and understanding open licensing.
- **Prioritize Accessibility and Inclusion:** Use Universal Design for Learning (UDL) principles and comply with WCAG standards to support all learners.

AI can enhance OER by supporting discovery, curation, and personalization of learning materials. Best practices in this area include:

- **Leverage AI for Personalization:** Integrate AI tools, such as intelligent tutoring systems and adaptive assessments, with OER to provide real-time feedback and tailored learning experiences.
- **Establish Quality Assurance:** Implement peer review processes and use instructional design rubrics to ensure content is pedagogically sound, inclusive, and accurate.
- **Ensure Ethical and Transparent AI Use:** Follow institutional and federal policies on student data privacy and clearly communicate how AI tools use learner data.

To foster a sustainable OER and AI ecosystem, institutions should:

- **Encourage Collaboration and Co-Creation:** Support faculty and students in creating and remixing OER using AI, which promotes digital literacy and innovation.
- **Promote Creative Commons Literacy:** Provide guidance on how to license, attribute, and reuse content appropriately.
- **Measure Impact:** Utilize ethically managed data to evaluate student outcomes, optimize resource allocation, and inform ongoing improvement.

These practices promote intentional, equity-centered integration of AI and OER to drive student success and academic excellence.

6. Shaping the Future of Education with OER and Generative AI

As we navigate an era of rapid technological advancement, the integration of Open Educational Resources (OER) and Generative AI presents an unprecedented opportunity to reshape education for greater equity, access, and innovation. This guide provides a roadmap to help faculty, instructional designers, and content creators utilize these tools responsibly, creating high-quality, inclusive, and adaptable learning experiences that cater to the diverse needs of today's learners.

While GenAI offers exciting possibilities in education, it also presents several challenges that must be carefully navigated. One primary concern is the potential for bias in AI-generated content, which may inadvertently reinforce stereotypes or provide

inaccurate information if not properly reviewed. Additionally, over-reliance on GenAI tools could limit opportunities for students to develop foundational skills, such as critical thinking, research, and writing. Educators must also grapple with ethical questions around academic integrity, as students may use AI to complete assignments without genuine learning. Furthermore, unequal access to GenAI technologies can exacerbate the digital divide, leaving some students without the necessary tools or support to benefit from them fully. Ultimately, many educators lack the necessary training to effectively integrate GenAI into their practice, underscoring the need for professional development that emphasizes both the capabilities and limitations of these tools.

The use of Generative AI in OER development is not about replacing educators; it is about empowering them to enhance their teaching and learning experiences. When used thoughtfully, AI can accelerate content creation, personalize learning pathways, and free up valuable time for more in-depth instructional design and enhanced student engagement. OER, supported by open licensing and community collaboration, ensures that these AI-enhanced resources remain freely accessible and adaptable across disciplines, institutions, and borders.

We encourage you to continue experimenting, iterating, and collaborating. Whether you're drafting a module, piloting a new tool, or leading your department through digital transformation, your contributions are shaping the future of learning. Stay curious. Stay critical. And most importantly—stay committed to open, ethical, and learner-centered education.

Let’s keep building the future together—one prompt, one resource, and one learner at a time. If you would like to share ways in which you have used OER/AI in your classes, click on the Google Form and share.

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7. AI and OER Glossary of Terms

A

- **Adaptive Learning**: A method that uses AI to adjust the content, pace, and learning path based on student performance and learning styles.
- **Algorithm**: A set of rules or steps used by AI systems to solve problems or make decisions.
- **Artificial Intelligence (AI)**: The simulation of human intelligence processes by machines, especially computer systems, including learning, reasoning, and self-correction.

C

- **Chatbot**: An AI tool that simulates human conversation, often used to answer questions or guide students through content.
- **Creative Commons (CC) Licenses**: A range of licenses that allow creators to specify how others can use their work. Common types include CC BY, CC BY-NC, and CC0.

D

- **Data Privacy**: The practice of protecting students' and users' personal information when using digital tools, particularly important in AI-enhanced learning platforms.
- **Deep Learning**: A type of machine learning that uses neural networks with multiple layers to analyze complex data like images, speech, and text.

E

- **Ethical AI**: The responsible use of AI in a way that ensures fairness, transparency, and accountability, especially important in education.

F

- **FERPA (Family Educational Rights and Privacy Act)**: A U.S. law that protects the privacy of student education records, relevant when using AI tools that collect student data.

H

- **Hallucination (AI)**: A term for when an AI system generates false or misleading information that appears plausible.

I

- **Instructional Design**: The practice of creating educational experiences and materials in a systematic and efficient manner, often enhanced using AI and OER.

L

- **Learning Analytics**: The collection and analysis of student data to improve learning outcomes; often powered by AI.

- **Large Language Model (LLM)**: An AI system trained on vast text datasets that can generate human-like responses and assist in content creation.

M

- **Machine Learning (ML)**: A branch of AI where systems learn from data and improve over time without being explicitly programmed.

O

- **Open Educational Resources (OER)**: Teaching, learning, and research materials that are freely accessible and openly licensed, allowing for reuse and adaptation.

- **Open Licensing**: Licenses (like Creative Commons) that grant permission to use, adapt, and share educational content without legal barriers.

- **Open Pedagogy**: A teaching approach that emphasizes collaboration, sharing, and learner participation, often supported by OER.

P

- **Personalized Learning**: Tailoring education to meet individual student needs, often supported by AI tools that analyze performance and adapt instruction accordingly.

- **Prompt Engineering**: The practice of crafting effective inputs or prompts to guide AI systems (especially LLMs) to produce desired outputs.

R

- **Remix (OER 5Rs)**: Combining content from multiple sources to create something new.
- **Revise (OER 5Rs)**: Modifying content to meet local or individual needs.
- **Retain (OER 5Rs)**: The right to make, own, and control copies of the content.
- **Reuse (OER 5Rs)**: Using the content in a wide range of ways (e.g., in a class, on a website).
- **Redistribute (OER 5Rs)**: Sharing copies of the original, revised, or remixed content with others.

S

- **Scalability**: The ability of AI tools or OER to be expanded to accommodate larger numbers of users or different contexts efficiently.

T

- **Text-to-Speech (TTS)**: AI technology that converts written text into spoken audio, useful for accessibility in OER materials.
- **Training Data**: The dataset used to "teach" an AI model how to perform a task, such as summarizing text or answering questions.

W

- **WIDS**: Worldwide Instructional Design System

8. Appendices

- Appendix A: Sample prompts
- Appendix B: Faculty OER planning worksheet
- Appendix C: AI tool feature comparison chart
- Appendix D: OER Pathway Facilitators (list)
- Appendix E: Additional AI/OER resources
- Appendix F: MATC-Responsible Use of Artificial Intelligence (AI)
- Appendix G: Ethics in AI