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Open Educational Resources for Community College Health Career Instruction: Identifying Best Practices for Distance Learning

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This is to certify that the doctoral study by

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Walden University
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Abstract

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MA, Walden University, 2014

BS, University of Missouri-Columbia, 2012

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The problem explored in this study is the limited use of Open Educational Resources (OER) by health career community college faculty. The purpose of this qualitative study was to investigate local community college faculty members' perceptions about the use of OER in their program classrooms, the barriers to its use, and what resources they need to overcome the barriers. The unified theory of acceptance use and technology (UTAT) pertains to attitude, performance, expectancy, technology self-use efficacy, and facilitating conditions; it will be used as the conceptual framework for this basic qualitative study. This study explored community college faculty perceptions about OER use in their health career curriculum, barriers community college faculty experience with OER use, and how community college faculty overcome barriers to use of OER in health career curriculum. The six participants for this study took part in one-on-one interviews both in person and on Zoom. Analysis of collected data followed using Saldana's 3 cycle coding process, which is inductive, open coding to identify emergent themes. The findings of this study indicate that health career faculty would use OER if it were easily accessible. Participants overwhelmingly felt the need for support in this manner, with high quality resources, support, and ease of access. Positive social change implications of this study include supporting health career students who cannot afford to purchase textbooks or course materials as these students are further underserved and denied opportunities for successful learning. Additionally, faculty need a solution to limited access, lack of funding, and lack of time to design something themselves; they need a toolkit that identifies best practice guidelines for OER use in health care curriculum.

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Section 1: The Problem

The Local Problem

The problem explored in this study is the limited use of OER by health career community college faculty. The rise in traditional textbook cost has led to a decrease in student purchases of course materials necessary to succeed in their program of study. There is evidence that due to the prohibitive cost, students may decide against purchasing course materials. This correlates with evidence that students who take courses without the required materials tend to perform poorly in those classes (McBride & Abramovich, 2022). With textbook costs of approximately $1200 per year, as many as seven in 10 students are not purchasing textbooks (Illinois Central College, 2019). Dean Smith of Lakewood Community College (a pseudonym for the study site) reported that students were not purchasing textbooks due to cost, and in return this cost must be absorbed by the program and ultimately the institution (D. Smith, direct communication, December 17, 2022). At the local level, one community college in Illinois noted that admission rates have experienced a 9% decrease since 2015, while health careers admissions remained relatively stable (Illinois Central College, 2019). As more students look to careers in the health profession, academic administrators should explore the barriers and supports to OER expansion in these settings. Positive social change implications of the study include supporting health career students who cannot afford to purchase textbooks or course materials as these students are further underserved and denied opportunities for successful learning.

The high cost of paper textbooks has decreased student purchases and use of hard copy course materials. E-books and open-source content could increase affordability, as equitable access concerns have been exacerbated by the global pandemic. Recent student survey reports at Lakewood revealed scores of less than a Likert value of 3 in the areas of textbook availability, overall cost, and overall use (D. Smith, direct communication, December 17, 2022). According to the standards of the Higher Learning Commission (HLC), which accredits the local institution and provides guidance for institutional strategies, "The institution's processes and activities demonstrate inclusive and equitable treatment of diverse populations" (HLC, 2021). Additionally, Criteria 3: D2 requires that "the institution provides for learning support and preparatory instruction to address the academic needs of its students" (HLC, 2020). The purpose of the investigation is to increase understanding about best practices for distance learning resources in health career programs. This qualitative basic study will explore the barriers and supports for implementing Open Education Resources (OER) to support community college coursework affordability, currency, and relevance to professional settings.

Rationale

OER and its modalities provide free access for all. Allowing educational resources to be available on any device, any platform, and available to any person with any disability promotes equity in learning. Despite the benefits, OER still has barriers. According to Baas et al. (2022), many faculty debate using OER in their classroom because they have concerns about relevancy, required quality, and the currency of the material.

Considering the recent pandemic, 94% of learners have been affected worldwide (Pokhrel & Chhetri, 2021). Students were not prepared for the on-line environment. If OER had been implemented, this may have been an easier transition. A recent study (Penrod et al., 2022) showed that nursing students post pandemic now preferred the on-line platform with OER resources because they are more comfortable using them. This community college study is one of many that shows how OER helps build instructor support, supports connection, transition to online learning, and clearly defines instructor expectations.

The intent of this study is to identify perceptions about OER of health career faculty in a local community college and support them in building better use of OER in their classroom. The purpose of this qualitative study is to investigate local community college faculty members' perceptions about the use of OER in their program classrooms, the barriers to its use, and what resources they need to overcome the barriers.

Definition of Terms

Open Educational Resources: According to Wiley and Hilton (2018), the term relates to a wide range of semantic overlaps including open pedagogy and open educational practices. These terms describe the creation, use, and sharing of educational materials without exerting financial or equitable barriers for learners. OER's include teaching, learning, and research resources that reside in the public domain, or have been released under an intellectual property license that permits their free use or re-purposing by others (Stracke, 2019).

MOOC: The term MOOC describes Massive Open Online Courses according to Stracke et al. (2019). MOOCs enable OER by freely disseminating open-source content in an innovative pedagogical manner.

Significance of the Study

Existing research shows that implementation of OER materials in community colleges is high quality (Ikahihiho et al., 2017), improves access (Gumb, 2020), and improves the likelihood of course completion (Winitzky-Stephens & Pickavance, 2017). The recent global pandemic has shown that the shift in learning requires accessibility without limitation, and customizable integration (Gumb, 2020). While it is known that OER can reduce the financial burden on students, more insight regarding how faculty now can utilize OER as part of best practices should be investigated. The benefits of OER are clear, and yet it remains uncertain how to implement OER effectively and with best practices in mind.

This basic or generic qualitative design revealed barriers to the expansion of OER in health career programs and reveal best practice guidelines for the sustainable use of OER in community college settings. As classrooms had to be adapted quickly during this pandemic, OER became a solution for many higher education settings (Gumb, 2020). Now more than ever, college faculty and administration must learn how to fully develop and implement OER as best practice, not simply as emergent use. The use of OER in community colleges varies and is most often led by financial limitations. If a firm foundation for OER effectiveness and use was validated, academic staff could have clear practice guidelines. Community college outcomes, admissions, and student success may

all potentially be positively affected. This study will provide invaluable information on how health career faculty within the community college can utilize OER within their curriculum and how they define best practice guidelines.

Research Questions

RQ 1: What are community college faculty perceptions about OER use in their health career curriculum?

RQ 2: What barriers do community college faculty experience with OER use?

RQ 3: How can community college faculty overcome barriers to use of OER in health career curriculum?

Review of the Literature

Conceptual Framework

The unified theory of acceptance use and technology (UTAT) pertains to attitude, performance, expectancy, technology self-use efficacy, and facilitating conditions (Tillinghast, 2020). A recent study by Tillinghast (2020) showed through qualitative interpretation, that faculty at a university were more likely to use OER based on these constructs. To further support this, Alajmi and Alotaibi (2020) used the same constructs to identify the effects of UTAT on their digital library system that supports OER for several universities. The study revealed that while the constructs held true, deep structure use was greatly influenced by system quality, overall behavior and intention (Alajmi & Alotaibi, 2020). Of course, this circles back around to the underlying theme of Venkatesh's design; when technology is accepted, utilized, and facilitated under appropriate conditions, the user and learner will have a meaningful experience.

While Altalhi's recent work in 2021 explored the UTAT theory as it related to MOOCs that took place in Saudi Arabia, the overlap in concepts is identical. Altalhi strove to strengthen Venkatesh's model and intended to identify acceptance and usage of technology among students. The significant educational characteristics of OER align with its perceived convenience and functionality, along with acceptance and student behaviors (Altalhi, 2021). In the United States, another study with the viewpoint of students was performed. In 2020, Khechine et al. used the UTAT theory with the additional construct of intrinsic value. By extending the version of UTAT, the researchers were able to extrapolate data that strengthened the conceptual framework. Notably, students found enjoyment in social learning technologies when fostered, and this strengthened the adoption of technology by the institution (Khechine et al., 2020). Similarly, another study in 2022 by Smirani and Boulahia further strengthens Venkatesh's model and identifies usage of OER among faculty. The researchers used the UTAT theory to analyze OER adoption and found that performance expectancy and effort had a positive impact on intentions to use OER (Smirani & Boulahia, 2022). Smirani and Boulahia (2022) also determined that financial encouragement and a cooperative culture would improve sustainability of OER.

More recently, the UTAT theory has been revisited post-pandemi,c as the potential need for increased adoption to online platforms continue to be necessary and even alluring to students (Zhang, et al., 2023). The authors here looked at the importance of adopting OER based on similar predicting factors and followed Venkatesh's model to identify performance, facilitating conditions, and faculty influence (Zhang, et al., 2023).

This theory fits this study very well because the clear constructs of Venkatesh's UTAT model provide a conceptual framework for understanding perceptions and adoption of any OER program. By using the UTAT model, I was able to determine performance expectancy, social influence, facilitating conditions, behavioral intentions, and other motivating factors (Weilage, Stumpfegger, 2022). All these constructs emerged from the interview process and data collection.

Review of the Broader Problem

In the following review of the broader problem, I address faculty perception on OER, community college health careers coursework and OER, open educational resources, community college faculty and OER, impact on student success, financial implications of OER, affordability and access, OER in a global pandemic, sustainability of OER, and social change impact of OER. These topics were found doing a search of the literature using several key terms: *OER*, *the*, *terms*, *here*, *in*, and *italics.* ERIC database and ProQuest databases were used. The following review has forty peer reviewed articles published after 2019.

Faculty Perception on OER

Baas et al. (2022) described how OER has grown tremendously in the last decade, and yet the overall use in higher education remains under-utilized. The researchers used a qualitative comparison study with both pre- and post- OER use that made this study unique. They looked at the practical issues surrounding the use of OER to understand faculty perceptions and how they assessed and evaluated OERs (Bass et al., 2022). Lantrip and Ray (2021) agreed and completed a similar study in which they believed it

vital to understand faculty perception of the barriers that exist in expanding OER opportunities. These authors identified key themes and suggested that administrative support, release time, training and technology assistance would be necessary for faculty to better utilize OER (Lantrip & Ray, 2021). Galloway (2020) agrees with the key themes in her narrative study, but overall finds the perceptions of faculty to be a motivational issue. She found that there was an overall lack of understanding of foundational theory of OER, and therefore, faculty were uncertain of their use and not motivated to learn best practices without support (Galloway, 2020).

Community College Health Careers Coursework and OER

In a recent qualitative study by Padiha et al. (2021), nursing students explored the relevance, ease, and intentional use of an MOOC to educate respiratory patients in the clinical setting. These massive courses unlock new opportunities for healthcare education and to lifelong learning. They can enhance safety and quality of the healthcare services provided by supporting patients to achieve a better quality of life. To further support the use of MOOCs, researchers Julia and Marco (2021) described how the challenges of developing active learning strategies can be overcome. Stimulating active learning in any online environment can become an obstacle that must be managed when the students are in health career programs. These programs are primarily driven by application and hands-on approaches. The use of open-source materials can seem inappropriate. However, the authors described tools for reflection, assessment, and other active learning strategies to motivate the learner and produce high quality resources (Julia & Marco, 2021). Gazarian, et al. (2020) also explored open-source content utilized in a graduate nursing program.

These authors showed that students found the resources helpful, easy to access, of high quality, and remained integrated well with the course outline (Gazarian, et al. 2020). Using OER led to the students taking a more active role in the course overall and this generates potential OER success for other health careers coursework. Another recent study by Connolly and Svobody (2023) further demonstrates that graduate nursing students' overall performance improved using OER. Because most of these studies involved nursing students, Stevens (2018) argued for the need for OER implementation within other health career programs and identified the gap in the literature at the community college level. The author of this article parallels what this study intends to determine, and it reinforces the gap in practice at the local study site.

Open Educational Resources

The principle of OER is to provide open content, fully free and available and adaptable to all (Castro, 2019). OER initiatives deserve a concerted effort as they promote student learning and growth. According to Castro (2019), collaborative efforts are necessary to improve these initiatives to further their impact on educational institutions. Nuviadenu (2022) agreed and explained how the option of OER in general education courses may increase admission rates, to community colleges. In relation to this study, this author identified a positive correlation between OER use and student learning outcomes (Nuviadenu, 2022).

Since 2002, open educational resources have been studied and reviewed. The 2020 International Conference of Educational Innovation and Technology looked back on the evolution of OER practice. The authors determined that once again, OER could foster

educational growth and was preferred in many countries; however, the quality of resources, and faculty use, and training still needed investigation (Meng et al., 2020). Hutson et al., (2022) agreed in a recent study and explored a few of the challenges. The authors aimed to design a collaborative model between faculty and library staff to broaden OER adoption within the institution (Hutson et al., 2022).

Community College Faculty and OER

The demographics involved in Hilton et al. (2016) relate directly to my investigation. In addition, one of the research questions focused on the satisfaction of faculty members regarding OER implementation. For this study, it is valuable to understand that faculty are in support and see positive changes with OER use. In a recent project review, Hilton and Mason (2016) analyzed numerous studies completed in 16 colleges. They found that OER was overwhelmingly popular among students, and faculty response was positive. Although mentioned previously in other research, faculty professional development and full understanding of OER was not studied here. The gap in practice that my study investigates is described in this investigation.

Decker (2021) was instrumental in developing OER within a local community college. However, the project has stalled due to a lack of resources and faculty support due to unclear best practice guidelines (Decker, 2021). The need was established within similar demographics as this study, and the barriers unearthed were important to consider as I constructed my interview protocol. Cabedo et al. (2018) discussed how faculty could be trained to use OER to its potential. This is the first study of its kind that delves into the necessity of supporting faculty during the implementation stage of OER (Cabedo, et

al.,2018). The study looked at MOOCs, whereas this study will focus on a specific area of OER in health science education. With this understanding, OER best practice guidelines may include professional development for individuals who design courses at the study site as a potential project outcome.

Impact on Student Success

In a recent study by Harvey and Bond (2022), they looked at OER curriculum in 28 middle schools in Washington state in a casual comparative model to investigate the relationship to school performance on test scores and other factors. Similarly, a study performed by Griffiths et al. (2022) viewed the impact of OER coursework on degree progression in 11 community colleges. Overall, in both studies, students were more successful and obtained degrees at a faster rate when using OER.

While the heaviest impact on student performance overall has not been seen, the attrition rate of students enrolled in programs using OER has been impacted. By providing equitable richness in opportunity, Kumar (2021) surveyed over 9,000 students in a post-secondary institution and learned that there was a positive correlation between OER and lack of attrition. This concept is explored further at the community college level by Ocean et al. (2019). Considering students of low income with tenuous thresholds for obstacles in their educational journey, Ocean administered a large survey to over 20,000 community college students. The survey results showed that over 56% of these students were satisfied with the effectiveness of the OER material, and over 13% stated that they would not have persisted if they had to purchase textbook or publisher materials.

Financial Implications of OER

Leiberman (2018) provided an overview of the proposal of the Affordable Textbook Act and the approval of one-time government funding to create a pilot program that will expand OER use in learning institutions. Federal support strengthens the need to develop best practices, especially when many institutions have been forced online during Covid 19. Hilton's research has been widely reviewed from an international perspective, and in 2021, his work highlighted the financial benefits of OER as the world faces economic crisis due to the pandemic (Lee & Lee, 2021). Another researcher agrees and claims that in 2020, over 60% of students faced basic need insecurities, with many not having textbooks on the first day of class (Veletsianos, 2021). A clear educational burden that can be remedied by using OER. A recent study in a community college suggested that students with access to options such as OER had overall higher success rates; and students that purchased traditional textbooks enrolled in fewer classes and took more time to complete (Becker et al., 2023).

Affordability and Access

A recent survey at a medium sized Midwest university was performed before beginning campus affordability initiatives (Rodriquez, 2022). The results of the surveys showed that the majority find $100 or more an acceptable cost for course materials, more than 70% of students purchase all course materials, over half make the decisions about their course materials, 80% are aware of OER, and yet use is low (Rodriquez, 2022). The discussion of high-quality OER implementation and other low-cost approaches to provide affordability. Other studies show straightforward evidence that because of the cost,

students do not purchase their course materials (McBride & Abramovich, 2022). According to McBride and Abramovich (2022), to correlate with this evidence, students who then take these courses without the required materials tend to perform poorly in those classes. To further support this idea, researchers in post-secondary education designed educator programs to build their own OER that would align equity, inclusion, and improve accessibility (Richardson et al., 2022).

OER in a Global Pandemic

In 2020, a global symposium met to discuss the nationwide pandemic that was impacting education on every level. Educators from K-12 through higher education were seeking alternative, innovative solutions to provide education during a global shut down. OER was one of the solutions due to its ability to be updated, adapted, and accessible (Dennen et al., 2022). To further support this on a global level, Bozkurt et al. (2020) explored ideas and perceptions from 31 countries to synthesize how current educational practice were reverted to remote educational practice. What can be gleaned from this research is the true value and necessity of open-source resources, and the collaboration for their use. On a local level, Werth et al. (2020) provided a qualitative case study that summarizes how the college transitioned during a global health crisis. The authors discuss the need for inclusive support, personalized assistance, and the need to align subject matter with quality online resources; the lack of materials in specific learning areas was noted, along with the need for student and faculty support (Werth et al., 2020). When forced into change, they learned that change was possible and even sustainable.

A recent article by Gumb (2020) supported the use of OER during a global pandemic for instruction; however, the author described how this is not fully the solution. While OER plays a valuable role in equity and accessibility, its role in a pandemic response through remote instruction must be explored further. Talking to experts in a community college setting may help to identify how we can use OER and develop strong guidelines for best practices. DeRosa (2020) also explored the functionality and purpose of OER during a pandemic. While the author described global benefits, the over-arching theme was continued support for the OER movement as instruction increasingly leaves brick and mortar settings (DeRosa, 2020).

Sustainability of OER

The community college faculty member has become a design practitioner and is a life-long learner who continually adapts practice and presentation (Garcia-Lopez et al., 2020). These authors consider the platform of the human-centered (HCD), or user-centered design (UCD) approach to create design solutions that involve technology and sustainability in course design. By using OER, faculty have had to consider boundary crossing which is not something all faculty necessarily want to do; however, sustainability researchers VanAllen and Katz (2019) described the meaningful relationship that can be developed between faculty, librarian, and student when assignments are developed in this manner. Providing opportunities to develop open-source resources can lead to the development of renewable assignments. By transitioning to open source, these renewable assignments award faculty a meaningful contribution to their profession and promote collaboration for years to come (VanAllen & Katz, 2019).

Researchers Essmiller et al. (2020) agree and have described a model of performance improvement and institutional organization that can be applied to other programs for successful OER implementation.

Social Change Impact of OER

The case study work of Freitas and Paredes in 2018 examined the background of faculty who participate in OER and MOOC use. Fifteen faculty members from various disciplines at a university were interviewed, all with varying levels of OER use and understanding. What the researchers found was that faculty members expressed dual intentionality in their use of OER (Freitas & Paredes, 2018). Both personally and professionally, faculty were seeking to improve and promote social change.

In an age of digital literacy, learning has evolved to include a humanistic approach and foster the life-long learner (Neves & Henriques, 2020). The authors completed an empirical study with many post-graduate students to determine how their distance and open-source education promoted social change (Neves & Henriques, 2020). In this post-COVID 19 environment, it was found that the accessibility of distance and open education led to improved graduate satisfaction on a holistic level. The learners reported a sense of heightened social and professional development, a more positive outlook, and a desire to impact others (Neves & Henriques, 2020).

Bober (2017) explored numerous aspects of OER as he championed for librarians to begin collaborative initiatives. His study also determined that the use of OER leveled the playing field for serving the underprivileged populations to make education accessible, affordable, and equitable to all (Bober, 2017). This approach is overarching in

the work of McLure and Sinkinson (2020). Recently these researchers used a case study approach to identify some of the more complex motivations behind the use of OER. Concepts and theory emerged centered around care for students, commitment to access and quality, and an inclusivity that promotes lifelong learning (McLure & Sinkinson, 2020).

Implications

The use of OER can improve learning, increase course equity, decrease financial stress, and encourage greater classroom engagement. Faculty understand that there are three key factors to a student's success in a course: their overall grade, retention, and basic needs. Basic needs include food, security, and a student's home life. What a student struggles with a home can be their greatest obstacle to achieving success in their course work. By using OER, we can serve the underserved and make education affordable and accessible to all. Not only can OER make an impact on student poverty by providing a cost saving option, OER promotes collaboration and provides adaptability to teacher needs as well (Harvey & Bond, 2022). When the cost of a textbook seems acceptable to a faculty at over $100 (Rodriquez, 2022) a student may not be able to afford that. The cost of textbooks for a health career program can reach over $2000 (Program Search, 2023). While all of this is known, what is not understood and what needs to be researched further is why OER remains underutilized at the local level in health career courses.

Summary

The end goal of this project study is to reduce disparities, make education available and affordable to all, and improve the classroom experience for their health career students. I suspect that health career faculty will desire to use OER, but will need support and resources, a tool kit for best practice guidelines that could help them adapt its use in the classroom. The next chapter will provide an overview of the evaluation report, curriculum plan, professional development training, and policy recommendations. There will also be another literature review on tool kits, project implications, reflection, and conclusion.

Section 2: The Methodology

Research Design and Approach

Venkatesh's UTAT model unifies technological advances with behavior and intention of the user to examine educational technology. The UTAT model examines and describes the relationship between advancing technology and the way the end user intends to use it and how they ultimately change their behaviors (Altahi, 2021). The user could be the learner or the instructor. Venkatesh's work has been widely accepted and built upon by other existing frameworks and theories to relate to the academic setting. More specifically, this model has been applied to online and distance learning, with a focus on examining the effectiveness of technology in distance and online learning and the tools used in this format. In the case of OER, Venkatesh's UTAT model will help explain how faculty perceive OER use and shed light on the intentions and behaviors with which health career faculty use OER.

As this study explored perceptions of faculty, underlying themes emerged such as rules that involve copyright infringement, lack of community support or poor-quality materials, and faculty concerned about the overall challenges of using technology in this manner (Altahi, 2021). This study focused on the insights of stakeholders, motivations, perceptions, best practice, and how OER can be interpreted and used to the fullest capacity.

A qualitative project study was performed to meet the goals of the research. The aim of this study was to understand the perceptions of health career faculty about the use of OER in their classroom. This was achieved through interviews with faculty. Themes

emerged, and then outcomes were determined. The end goal of this research was to develop a tool kit for best practices and OER use for faculty who want to develop an OER plan in their health career classroom.

A basic qualitative research design was selected because it allowed me to explore the feelings and phenomena of community college faculty about OER (Morgan, 2019). Qualitative design tells a story and analyzes the meanings, behaviors, and influences of the participants (Morgan, 2019). Qualitative interviews often show correlation and lead into the next process, and can often lead to emerging themes in the data collection (Morgan, 2019).

The qualitative inquiry aimed to understand people's perspectives and experiences; therefore, the interview was an excellent tool for data collection (Quin-Patton, 2023). This study aimed to understand perspectives, so I completed follow up interviews with willing participants. I used open-ended interview questions in an interview protocol for each participant.

Qualitative program evaluations are a helpful approach in communicating in the participants stories and characteristics about a program (Quinn-Patton, 2023). I considered this idea; however, this would only shed light on current program effectiveness, while I am looking at exploring how someone feels about something that is not actually being done. Other qualitative research methods such as grounded theory were also considered. The grounded theory approach collects data with no pre-existing theory or concept and engages in analysis to create larger themes (Tracy, 2019). These themes then become interwoven into explanation and emergent theory (Tracy, 2019). In

this case, there is prior concept and theory as to why community college faculty are not utilizing OER; I am trying to understand their challenges.

Another qualitative approach is the case study. Case studies reveal cause and effect; they describe and hypothesize, ultimately testing theory and revealing phenomenon (Tracy, 2019). The gap in literature is a phenomenon here at the local level. Students are not purchasing their textbooks due to prohibitive costs, and it may be leading to unsuccessful students and a decline in admissions (Decker, 2021).

Finally, ethnography and phenomenological research are other qualitative approaches. Both approaches observe how people act or feel about things, often by interviewing or surveying them (Tracy, 2019). Ethnography utilizes the researcher being immersed in the culture they are exploring and collaborating with participants to analyze their subjective experiences (Tracy, 2019). I did consider one of these approaches to glean valuable data; however, I did not evaluate a product and I had to consider removing all bias from the project.

Participants

Six community college faculty participants from various health career programs in a local community college in Illinois were selected to be interviewed. The six selected agreed to be interviewed and were currently employed at the local community college. In order to prevent bias or conflict of interest, these faculty held positions over which I have no supervisory power. They are not at risk of economic loss, and participation poses no threat to their professional reputation. Purposeful sampling and recruiting of faculty from

various health career programs should provide enough variation to help me understand the problem and provide me descriptive answers to the research questions.

Prior to the interviews, the selected participants received copies of the informed consent documents and the research approval. I described the confidentiality nature of the study and that there would no compensation for their participation. Each participant was protected by a number coded system (i.e. P1, P2, and P3). Under no circumstances will their name or any identifying information about them be released.

Data Collection

Data collection was conducted through in-person semistructured interviews using an interview protocol (see Appendix B). Semistructured interviews allowed me the flexibility to ask the questions necessary for the interview, but also let conversation develop and change direction naturally (Vaughn & Turner, 2016). If in-person interviews could not be arranged, Zoom video conferencing interviews that could be recorded were also utilized. In-person interviews were also recorded to be replayed later by voice dictation software. Data storage management was on my personal computer in my home office, separate from my work computer. I sought IRB approval and followed all data and storage protection procedures.

Procedures for Gaining Access to Participants

The six participants in this study were current community college faculty who teach in health careers. I gained access to these participants by requesting the emails of those that meet the criteria from the Dean of Health Careers.

Role of the Researcher

Although I completed this study in my place of work, I had and have no supervisory role over these participants, nor will I in the future. The role of a qualitative researcher is to use guiding questions in the interview process that will produce quality data that can be reflected upon so phenomena can be identified (LaDonna et al., 2021). As the researcher, I mitigated my biases by maintaining a reflective journal to review my personal responses to each participant's data.

Data Analysis

Data analysis was performed by manual coding. With only six participants in the study, manual coding served the interests of the study best. I was able to identify themes and analyze the data thoroughly. Data analysis followed Saldana's (2013) three-cycle coding process. Manual coding is the first step in the coding process and will allow me to see the hard copy printouts of the data in traditional materials and explore it. Inductive, open coding arises directly from survey results. This helped me reflect, extrapolate, and categorize the data.

Evidence of Quality

Upon the completion of each interview, I prepared a one-page summary of my understanding of the data and shared this with the participants for their feedback. I invited suggestions and corrections for participants and, if required, followed up with the participant to ensure understanding. I used member checking to help prevent bias and validate my findings (Saldana, 2013). As a way of controlling researcher bias, I kept a reflective journal.

Discrepant Cases

I approached any discrepant cases with consideration to the full data. A discrepant case may enhance the study. Any discrepancies in findings will be reconciled and presented as coherencies (Levitt et al., 2021). Explaining discrepancies increases utility of the study. By identifying rationales and differences in experiences we can direct social change (Levitt et al., 2021).

Limitations

The limitations for this basic qualitative study include the number of participants. I interviewed six faculty in the same institution who all teach in health career programs. A small sample size could limit interpretations of data (Saldaña, 2011). However, limitations in qualitative studies can be overcome by going deeper into the interview questions to gain more insight and remove personal bias (Saldaña, 2011). Many of these faculty shared the same andragogical approach; however, that is what I wanted to explore.

As a healthcare teacher myself, and someone who believes in the importance of community college, the study is important. I want to understand why other faculty members are not embracing the use of OER resources in their classrooms to better serve their students. I want to help faculty and students be more successful with the right tools and the most economical investment in their future. I designed this study to remove any bias I may have projected onto the results.

Data Analysis Results

The study yielded six participants. Data collection took place over a 2-week time period. Interviews were done in person and on-line using Zoom software. All interviews were audio recorded and transcribed using Zoom software, and field notes were taken for review afterwards. Field notes were descriptive and reflective. After collecting the data from the participant interview, the data were analyzed, coded, and interpreted to find emerging themes and patterns regarding the perceptions of the participants. Using reflective field notes allowed me to record my thoughts and additional questions and ideas during the observation, as field notes allow the researcher to document behaviors and attitudes surrounding the observation (Schwandt, 2015).

Manual three-cycle coding was performed. Seven themes were extrapolated from the data sets after the initial coding and then tied to the research questions. To support this, quotes from participants were listed. Participants privacy and confidentiality is maintained by using pseudonyms. Participants are referred to as P1, P2, respectively. Additionally, before data collection process began, I acquired IRB approval from Walden university, as well as the institution at which data collection was obtained.

Participants were provided with a consent form prior to agreeing to participate in the study. Approximately one week after completion of their interview, they received a transcript of the interview for member checking purposes. Participants received assurances that the data collected will be kept confidential and in secure storage, with myself having the only access. I will destroy data after 5 years.

Problem and Research Questions

The research problem guiding this study was the limited use of OER by health career community college faculty. The research question guiding this study was regarding community college faculty perceptions, barriers and how to overcome those barriers about OER use in their health career curriculum. This resulted in three themesm drawb from 39 codes and seven categories (see Table 1).

Table 1

Interview Quotes, Codes, Categories & Themes

Representative Quotes	Codes	Categories	Themes
"Honestly, someone is going to have to demonstrate to me how much better it is first. So I think it goes back to…you have to show me the value in this…that this is superior to what we already do" (P2)	Quality Valuable Outdated Currency of material Student benefit Supplemental material	Course Materials	Community college faculty perceptions of OER in health care curriculum involve many aspects of course materials. (RQ1)
"I would say I need some guidance. I like maybe a workshop to say, this is how find OER. I think once I can see what's out there like with a workshop or a toolkit to help my program get started." (P4) "I like to physically hold a book and then to be able to reference it back." (P1)	Workshop Toolkit Technology-support Pilot Committee LMS site Library Guidance Resources Support – need for Communication	Supports that faculty would need	In order to overcome barriers with OER use, health career faculty will need a multi-faceted support approach.(RQ3)
"Our primary textbooks remain hard copy…we spoke with the students about it and most every student said they were not interested in it at this time…they preferred the physical textbook" (P2)	Willingness Faculty buy-in Physical book Support – need for	Problems faculty may encounter	Community college faculty have noted many potential barriers to OER use. (RQ2)
If I do an adaptation they don't have my answer key, academic integrity can be a problem." (P4). "There was just an overall lack of awareness that we could use OER in our curriculum, that it was an option for us...and how to we begin?" (P5)	Cost Access Student preference Online reading Learning needs Physical book	Student concerns	Community college faculty shared barriers that students have experience with OER use. (RQ2)

Table 1 cont.

Interview Quotes, Codes, Categories & Themes

Representative Quotes	Codes	Categories	Themes
"My biggest concern of starting something like this, something new is fear. Fear of the unknown and everything that goes with that." (P6). "In most cases it's just a matter of individually taking the time to do it…research, the format, there is something more every day, every semester we have to learn and there is simply not enough time." (P2)	Awareness Academic integrity Accreditation concerns LMS support Copyright	Questions from faculty	Community college health career faculty raised questions that could lead to potential barriers to OER use. (RQ2)
"The pandemic made it more friendly, we have to consider that another switch to virtual learning could happen…" (P1).	Ease of use Academic freedom Fear Cost Access Support – lack of Lack of time Pandemic Switch to eLearning Assessment Comfort level	Faculty concerns Planning for the future	Health career faculty concerns were communicated that could lead to potential barriers to OER use. (RQ2) Community college faculty discussed how planning for the future could help them overcome barriers to the overall use of OER in the health career curriculum. (RQ3)

Theme 1: Community College Faculty Perceptions of OER in Health Care Curriculum Involve Many Aspects of Course Materials

The first theme is as follows: Community college faculty perceptions of OER in health care curriculum involve many aspects of course materials. This theme directly relates to research question number one that asks, "What are community college faculty perceptions about OER use in their health career curriculum?" The codes that were noted here were quality, valuable, outdated, currency of material, student benefit, and supplemental material. In all, this led to the category "course materials." Participants were asked questions about what they had noticed about textbook costs, or changes to

textbooks recently. In addition, participants were asked about barriers to faculty experiences with OER. These were some of the terms and overwhelming codes that jumped out to me as I was analyzing the results. All the faculty interviewed were currently using textbooks as their primary course materials. When they were asked about their experiences with OER or what they had noticed about changes to textbooks, many began to compare textbooks with OER or other resources. Many mentioned that they utilized supplemental material, although they did worry about the quality of the material, and whether it would lend value to their curriculum. P2 stated, "Honestly, someone is going to have to demonstrate to me how much better it is first. So, I think it goes back to…you have to show me the value in this…that this is superior to what we already do."

Similarly, P3 shared, "I look for alternatives regularly because I want to know what the student's options are, especially if the information is outdated or not. Currency of material is very important." There were shared concepts here as P4 agreed that "I use lots of other resources and supplemental material, because textbooks become outdated quickly, but it is difficult to determine the quality of online resources."

Because all of the faculty in this study teach in health careers, there was shared concern over outdated materials. There is exploration into generative artificial intelligence due to the perpetual outdated nature of medical textbooks (Preiksaitis & Rose, 2022). This did not come as a surprise. Textbook editions change rapidly, and this impacts the cost profoundly. Therefore, faculty that teach in health careers are often exploring a multitude of resources, including simulation, to help students engage, learn difficult concepts, as efficiently as possible. Faculty do want to be assured of student

benefit. P5 stated, “we use supplemental materials often, especially in our skills lab to help cement the theory portion.” On a similar note, P6 stated that they “employed an instructional designer to help their program come up with OER that would greatly benefit their students with an online textbook, workbook and embedded videos to support their knowledge.” The takeaway from this theme was that faculty perceptions overall were that if it benefited student learning, and the material was valuable, recent and quality, that faculty may utilize it in their curriculum.

Theme 2: Community College Faculty Perceptions Regarding Barriers to OER Use in Health Care Curriculum Involve Many Aspects

The second theme is as follows: community college faculty perceptions regarding barriers to OER use in health care curriculum involve many aspects. This theme directly relates to research question number two: What barriers do community college faculty experience with OER use? There were 22 codes, and four categories that developed from the initial coding with some overlapping codes. I will describe each category separately and analyze the data as follows.

The first category was “Problems that faculty may encounter,” and it had the following codes: willingness, faculty buy-in, physical book, and support – need for. Faculty participants had been asked questions regarding their ability to make changes within their program about textbook adaptations, how they felt about that, whether these changes would require accreditation support, and their perceptions about barriers to OER use overall in health care curriculum. These barriers could be within their own program, other programs, or what their perceptions were overall surrounding barriers that they felt

might be surrounding the use of OER. Several faculty members mentioned that they, or others, especially adjunct faculty, may not be willing to make the change to OER use. For example, P2 stated, "I do not think full time faculty will find it a barrier, but adjunct faculty may not be as willing to use something new like this." Similarly, P6 shared that "we utilize a great deal of adjunct faculty, especially in our skills lab, and I just do not see them as being willing to use something like this that has such a huge learning curve." Along the same lines, obtaining faculty buy-in can be a challenge. Out of the six full time faculty members interviewed, they represented five programs in which a high percentage of adjunct faculty members are utilized (See Table 2). According to Henkel and Haley (2020), adjunct faculty members are less engaged, less likely to seek feedback, and work effectively for student success.

Table 2

Participant to Faculty Ratio (2024)

Participant	Number of Full-Time Faculty	Number of Adjunct Faculty
P1	2	16
P2	2	3
P3	2	4
P4	1	1
P5	2	56
P6	2	56

Obtaining faculty buy-in, even at the full-time level, can be a challenge. When considering part-time faculty on such high percentages with certain programs can be a daunting task. Many of these faculty maintain other full-time jobs and simply do not have the time to learn new skills or complete specialized training such as implementing OER. According to P3, "of course we would have to get buy-in from faculty if we were to implement something like this full time, and I'm not sure how that would go." The

additional codes in this category are “physical book,” and “need for support.” Several participants mentioned that they prefer the physical book when teaching. P1 stated that “I like to physically hold a book.” In a similar statement, P6 commented that “having the actually physical copy of the book is a preference for me, not only for teaching, but for referencing.” To wrap up this theme, all participants mentioned the support and followed it with the word “need” in some capacity. When describing a barrier to OER, the concern overwhelmingly became needing support in some manner, whether that be “needing academia support,” (P2) “needing institutional support,” (P6) “we need support from technology services,” (P2) or nicely wrapped up by P3, who said “we will need overwhelming wrap around support.”

The next category here is titled “student concerns” and the codes were: cost, access, student preference, online reading, learning needs, and physical book. Cost and access played a huge role in this category because cost was mentioned repeatedly as the question of what trends had been noticed in textbooks recently. Resoundingly, it rang back that the cost of textbooks continues to rise, and this is conveyed on to the student. In an era when accessibility to learning materials is nearly demanded to be instant, just as the LMS is. According to P4, “with textbook costs rising, we have considered some courses in which we may not use a textbook, where access may play a larger role for students.” Similarly, P5 agreed, stating that “…access can be a barrier for students.” The codes “student preference” and “physical book” were tied together and were interesting to analyze. Despite the rising costs, and access issue, participants disagreed on this. However, it does relate to faculty perceptions on the “physical book” code. Most faculty

participants agreed that they preferred the physical book. When discussing student concerns, there were some faculty that reported that many students actually felt the same. At the community college level, there is a mixed and very diverse population of students. Table 3 breaks down the population and basic data of Lakewood Community College for each program represented by the participants.

Table 3

Academic Program Profile (2023)

Participant	Traditional Age	Non-Traditional Age	Pell Grant Eligible	Non-Pell Grant Eligible	College Ready	Developmental in Math & English
P1	15	10	15	10	11	14
P2	29	24	40	15	33	19
P3	25	15	12	28	11	29
P4	2	11	7	7	4	10
P5	298	167	217	248	126	339
P6	298	167	217	248	126	339

These data help support non-traditional age and many community college students are not college ready, are of a non-traditional age, and are grant eligible. This is significant as many of these students represent first-generation college students, and their need for broad access and support will be critical to their success (McCallen & Johnson, 2020). P2 supported this by stating, “Our primary textbooks remain hard copy…we spoke with the students about it and most every student said they were not interested in it at this time…they preferred the physical textbook.” The codes “online reading” and “learning needs” tie directly into students’ concerns. While some students prefer to read and obtain their learning online, many do not. What was learned from the pandemic is that teachers need to be flexible. Students prefer options, and instructors have to be ready to pivot. According to P3, “costs have gone up and we need to look at what percentage of the text

we are actually using, and evaluate our total cost per year, and ask ourselves if this meets the students learning needs?" Participant 5 supported this by stating, "all of our students learn differently, are we looking at this? What are we presenting? What are their learning styles and needs and will this meet them?" These posed excellent questions and led directly into the next category.

The third category in this theme was "questions from faculty," which had the following codes: awareness, academic integrity, accreditation concerns, LMS support, and copyright. Participants were still discussing potential barriers to OER use in health care curriculum with some very different viewpoints here. The overarching code here was awareness. Every participant mentioned the word "awareness" during their interview at some point. This was interesting and was documented in my field notes as well. Beginning with P1's statement, "I don't enough about it (OER), and it has not been presented to us." Similarly, P3 commented, "there is an overall lack of awareness…how to find resources." P4 stated that "the awareness was not there." They questioned the interviewer about the availability of resources and institutional support.

In addition to this, there were some unique questions specific to health career programs regarding accreditation concerns. To protect anonymity, the accreditation bodies will not be named; however, it can be stated that all participants must report and maintain records annually to an accredited agency. This could impact decisions that are made regarding curriculum and curricular changes. This question was posed while asking about barriers to OER use. No participant reported any potential problem with their accreditation agency if they were to switch to OER in the future. Other questions

involved academic integrity, LMS support, and copyright concerns. These are all valid concerns, and challenges that were faced when converting our platform to online during the pandemic. For example, P4 stated, "be aware of academic integrity when using OER or similar products, because students will attempt to be dishonest with certain things so protect yourself." This was supported by P6: "I'm wondering if we have to go back to some of the safety measures we had in place during Covid for academic integrity? It's sad, but students take advantage, and I don't know how to stop that."

These concerns were meshed with copyright and LMS support issues. P4 stated, "we need to watch copyright infringement, I know we had a department here for that, but I feel like we are on our own now. And that is a huge concern of mine." P1 asked

> Will our LMS support this? I am just now competent in that, so I feel like if it can support this than I can manage that, but if I have to go outside of our LMS I worry about the support."

These are all valid questions posed by faculty that I fleshed out and separated from concerns.

The final category in this theme was "faculty concerns," which had the following codes: ease of use, academic freedom, fear, cost, access, support – lack of, and lack of time. There is some overlap here, as notated; however, this is due to the category and comments by participants. Comments could have been directed more toward the student and then categorized as such, or as a faculty concern and then categorized here. The term "support" was used very specifically and was notated as such whether that was a "need for support" as noted in the category "problems faculty may encounter," or as "lack of

support," which is listed here under the category "faculty concerns." While these could have been placed in the same code, I chose to list them separately because participants specifically spoke to them that way. I found it important for the analysis to mention that faculty either needed support or that they felt there was a lack of support. This implies two different situations. This is supported by P3: "while there is academic freedom, I don't know what my options are or how to use them. I need guidance and I don't feel like that support is there." In a similar statement, P6 mentioned, "there was a committee for this, but I have no idea what has happened to it, and where our support is in this department." The codes "cost" and "access" are re-visited because they were mentioned again by participants as concerns for not just students but for faculty. Almost all participants stated that they had decision making power when it came to textbook changes, and they were very aware of the rising costs of textbooks; however, despite the rising costs, fear and lack of support for new technology remains a barrier for faculty. P6 states, "My biggest concern of starting something like this, something new is fear. Fear of the unknown and everything that goes with that." Similarly, P2 states, "In most cases it's just a matter of individually taking the time to do it…research, the format, there is something more every day, every semester we have to learn and there is simply not enough time." With all of these barriers, I will now discuss how the participants felt about overcoming the barriers.

Theme 3: Community College Faculty Perceptions Regarding Overcoming Barriers to OER Use in Health Care Curriculum Involve Planning for the Future

The third theme is as follows: community college faculty perceptions regarding overcoming barriers to OER use in health care curriculum involve planning for the future. In order to overcome these barriers, there needs to be a multi-faceted approach. This theme directly relates to research question three: How can community college faculty overcome barriers to use of OER in health career curriculum? There were 15 codes in two categories that resulted from the manual coding process. I will describe each category separately and analyze the data as follows.

The first category is "supports that faculty would need" with the following codes: workshop, toolkit, technology-support, pilot, committee, LMS site, library, guidance, resources, support – need for, communication. Participants continued to mention the word "support;" however, in this area of the interview, they were describing things that they would need to help them overcome potential barriers to using OER in their curriculum. For example, P4 stated, "I would say I need some guidance. I like maybe a workshop to say, this is how find OER. I think once I can see what's out there like with a workshop or a toolkit to help my program get started." (P4)

Likewise, P3 stated "workshops would be helpful in designing and developing OER to match up with our objectives." P6 further supported this by suggesting "those currently using OER successfully could show us through a workshop or a toolkit, because we would need support to get started." Another participant, P1, added, "I like the idea of a toolkit, something all in one that would help me get started to use it in my classroom."

All participants asked for resources in some manner, P6 mentioned, “the OER would need to be easy to navigate and explain to a student, so there would need to be enough resources to support that. Perhaps a committee, or a pilot course?” In similar fashion, P5 mentioned, “they (the community college) would have to make sure enough resources are available, and that there was good communication, I like to use our library resource.” This was an interesting point in analysis. P2 had also mentioned library resources when discussing the development of an introductory course for their program that employed OER. P2 stated, “the library staff helped us build our 100-level course and embed OER into the LMS site, if that support could be available on a broader scale, that would definitely help overcome barriers.” It is well known that librarians can collaborate and partner with faculty to adopt OER initiatives effectively (Smith et al., 2023).

In addition, Lakewood community college currently has a dedicated committee to support OER use, and an LMS site with resources. However, what was heard throughout the interview process by nearly all participants was a lack of knowledge and awareness. P1 stated, “I simply don’t know enough about this… it has not been presented to us.” P3 supported this by stating, “I don’t know what the options are. I feel like I have an overall lack of awareness, so the barriers to overcome actually overwhelm me.” With two campuses at Lakewood, these faculty feel separated, and their support system is not as present on the health careers campus. Clearly the faculty will need a great deal of support from the toolkit that will be developed.

The last category is “planning for the future” with the following codes: pandemic, switch to elearning, assessment, and comfort level. These codes came from questions

about changes in textbook use and if the pandemic impacted those changes. This relates to overcoming barriers to OER use because we must be prepared for a potential shift to online learning again, hence "planning for the future." According to P1, "The pandemic made it more friendly; we have to consider that another switch to virtual learning could happen." In agreement was P6 stating, "we rose to the challenge during Covid, I think faculty could do it again (switch to eLearning) with immersion." Designing a toolkit to help prepare faculty for another switch to online learning would be profoundly helpful. To support this, P2 stated, "instructors must be comfortable with the OER in order to use it effectively." Likewise, P3 stated that "ongoing assessment will be important moving forward."

Summary

In this chapter I described the research design and methodology. A qualitative design is best to help understand perceptions about a particular phenomenon. When there are participants with experience and a desire to gain deeper understanding of real-world problems and provide interventions, qualitative research is beneficial (Tenny et al., 2022). I also outlined how I selected participants and gathered data. The primary objective was to identify perceptions of community college health career faculty about open-source resources. I knew that these faculty members had varying degrees of experience and background, so it was important to capture that. Therefore, purposeful sampling was ideal. This section also included the role of the researcher, evidence of quality, discrepant case, and limitations. Finally, this section discussed the analysis of the data collected.

Section 3: The Project

For my final study, I designed a curricular tool kit for community college health career faculty to implement open educational resources in their classrooms (see Appendix A). Toolkits are used widely in higher education for assessment, simulation, online learning, and to support faculty in both continued and new development of curriculum. I include the purpose, learners, level, and sequence within the kit. This tool kit will consist of nine key components in which I will outline each activity, how to set up their OER to work best for their specific needs, assessment tools, how to find high quality resources, and how to adapt and customize their tools.

Based on the findings of my research, health career faculty would use OER if it were presented in a toolkit manner with these key features. They overwhelmingly felt the need for support in this manner, with high quality resources, support, and ease of access. The goals of this project are to meet the needs of the faculty, support the students learning, and promote life-long learning in all stakeholders.

Rationale

This toolkit can empower community college health career instructors to leverage the vast world of OERs to create engaging and affordable learning experiences for their students. Throughout the interviews, one theme continued to emerge and that was textbook cost rising and needing to re-evaluate our textbook usage. The other emerging theme was accessibility, technology, and instructional design for health career student. Faculty were needing a solution to an age-old problem of limited access, lack of funding for both faculty and student, and not enough time or knowledge to design something

themselves to benefit everyone. The key is to curate a diverse collection of OERs and personalize them to create a dynamic and cost-effective learning environment for faculty and students. By embracing OERs, you contribute to a more affordable and accessible education for future healthcare professionals. Faculty were willing to embrace OER; however, they need a toolkit designed with specifically them in mind to help them do that.

Review of Literature

K-12 Toolkits

Researcher Paul Flynn (2020) designed a practitioner-focused toolkit for K-12 educators faced with the emergency transition to e-learning. He presents a conceptual framework centered around equity and engagement (Flynn, 2022). Researchers Shakman et al. (2020) took this one step further to see continuous improvement and sustainable change, designing a toolkit for K-12 schools based on the Plan-Do-Study-Act cycle. An even more thorough toolkit was designed by researchers Corbett et al. (2020) that fully encompassed diversity, equity, and inclusion. These researchers considered the needs of all faculty, students, staff, and the principal, while also looking toward the future and reimagining education for the K-12 sector.

Toolkits in Higher Education

Toolkits are frequently used in higher education in numerous ways. Toolkits are often utilized in an assessment capacity, as Christen et al. (2023) described in their study. These authors discuss the need for ongoing assessment toolkits to help faculty in the field for ongoing professional development. Ličen et al. (2023) developed a companion

evaluation toolkit that would help faculty assess eLearning platforms. In a similar study, Alammary (2022) developed a toolkit aimed at developing appropriate design and criteria for assessing blended course design. Beyond assessment, toolkits can also be used in higher education to design learning outcomes. Soares et al. (2020) designed a toolkit that would help educators formulate learning outcomes based on creative, innovative competencies.

Online Teaching Toolkits

One author described her method of designing online toolkits to organize large collections of activities and assignments for courses (Nurse-Clarke, 2023). Creating an online repository and embedding hyperlinks to easily locate material per course was timesaving for online instruction and reuse. In a similar article, researchers describe how to prepare an online teaching toolkit in the event of a future need to teach remotely (Brooks et al., 2020). In addition to being able to access resources, these authors describe how to navigate learning management systems, share resources, use social media, professional organizations, and practice self-care (Brooks et al., 2020). Other researchers have taken online toolkits one step further in the development of advanced planning toolkits. Edmonds and Pusch (2022) designed a toolkit for strategies for an adult asynchronous learning framework including instructional planning and learner support.

Healthcare Education

In healthcare education, toolkits can also be utilized for many of the same reasons. Luctkar-Flude et al. (2021) described how toolkits can be used in nursing education as a gaming virtual simulation teaching and learning strategy. Another model

of toolkit in healthcare education described by Grey et al. (2023) is that of a nursing clinical assessment toolkit, which enables transparency in the assessment process. Students in healthcare education also struggle with technological support and a lack of engagement. Lynch et al. (2023) explained toolkit resources to provide these resources for technology-based instruction Healthcare education is often supported by clinical education, and in the online arena that is supported by simulation.

Simulation Toolkits

Simulation had to be adopted rapidly during the pandemic, and educators were faced with a lack of time and ability to learn innovative technology, hence the need to develop simulation educator toolkits. These toolkits provide practical strategies and resources to embed in curriculum that contain relevant, evidence-based medicine and theory for any level of simulation user (Verkuyl et al., 2022). Some researchers utilized the Technology Acceptance Model for ease of use. Other toolkits can involve simulation experiences and a standardized patient in a controlled environment. Researchers Seldomridge and Kim (2022) developed a simulation toolkit using online learning modules in combination with simulation experience to help health career students develop communication and advocacy skills for improved patient care. Similarly, other researchers have developed simulation toolkits as patient scenarios to continue to be built upon and as reproducible content accessible to interdisciplinary health career programs (Webster, 2019). When content can be edited to suit the learners needs and give faculty a starting script, simulation can easily be added into curriculum through a toolkit.

Reflection and Improvement Processes

Reflection is a way to improve teaching practice, and novice teachers in any level of education can integrate this process into practice. Lefebvre et al. (2022) developed a reflective pedagogical toolkit to better understand the process and categories of reflection. In a similar fashion, researchers also want to look at the improvement process when reflecting. Colleagues Walston and Conley (2022) wanted to guide educators with a toolkit that would target areas where they wanted to continually improve. Another group of researchers used self-reflective practices along with facilitation strategies when assessing their museum educator's effectiveness (Kon & Zankowicz, 2022).

Student Engagement

As the online platform continues to evolve and become the new normal in college teaching, faculty and students need strategies for engagement and support for anxiety (Wang et al., 2022). These authors described a problem-solving toolkit designed at the university level with these goals in mind (Wang et al., 2022). Other researchers promote student engagement by using student toolkits. For example, Pecanac and Neuhauser (2022) designed student toolkits in an online course that require students to complete activities and engage with other students to promote active learning. In contrast to these, Lamitie and Harps (2021) described a student engagement toolkit for any learning platform. They described how to make connections between adult learning principles and engagement with their toolkit.

Faculty Development

Whether faculty require new training or continuing education, all faculty need guidance, want to feel engaged, and want supportive working environments. Researchers Hess and Austin (2022) developed a toolkit based on the experiences of early childhood educators to support their ongoing learning, power building, and engagement. Higher education faculty have similar needs. Christen et al. (2023) came together to determine what professionals were seeking to improve their skills and what professional development would be required to meet those needs. Even at the postdoctoral level, as these future faculty prepare to teach, toolkits are helpful in faculty development. Frey et al. (2020) also found that preparing a teaching development toolkit based around exposure to pedagogical approach, experiential learning, diversity and inclusion, future faculty were more prepared.

Project Description

Resources needed to complete this project include content development, curating resources, presentation and user experience, and additional resources. Existing supports include content development which involves subject matter expertise, learning objectives and standards, and instructional design knowledge. The toolkit will be aligned with established learning objectives and educational standards for the targeted audience. Curating resources involve sample curriculum materials, instructional activities, assessment plans, and OER integration. Potential barriers and solutions to these barriers include presentation and user experience and additional resources. Presentation and user experiences involve graphic design, editing, and technology resources. Internal

technology support will need to be consulted, as well as marketing, librarian support, and LMS support. Additional resources such as accessibility tools to ensure the toolkit is accessible to users with disabilities by including features like closed captions and alternative text descriptions. In addition, feedback mechanisms will need to be integrated as a means of quality improvement.

This toolkit is for community college faculty who teach in health careers. It is reserved for faculty who wish to implement OER in their curriculum at any capacity. The toolkit will assist them in inserting OER into any area, any course, and in any level of use. The toolkit will be housed in a Canvas site that has intellectual property at Lakewood Community College, and all faculty will have access to. It will be available for use by Fall of 2024. The OER toolkit will have nine modules that are self-paced, with intended completion in nine weeks; however, faculty have access as long as they remain employed and can review the material at any point for continued resources and support.

Project Evaluation Plan

The project evaluation plan that I will be using is the Program Evaluation Toolkit from the National Center for Education Evaluation and Regional Assistance. This evaluation tool provides support and tools for users to contribute evaluations to their own programs. It uses the framework of the toolkit, identifies key questions about goals and chooses the appropriate analytical method to address the questions. In the case of this toolkit, alignment of content, overall usability and design, and impact were the three categories that needed to be evaluated. This is the standard in the industry when identifying the value of OER programs.

Project Implications

Possible social change implications include the empowerment of the educators and promote openness and knowledge sharing. Overall, a toolkit for OERs can be a powerful tool for promoting educational equity, empowering educators, and fostering a more open and collaborative learning environment. This can contribute to broader social change by making education more accessible and creating a more knowledgeable and engaged citizenry. The toolkit equips local educators with the skills and resources to curate their own curriculum materials, fostering a sense of ownership and control over their teaching practice. The toolkit promotes the idea of knowledge as a shared resource, fostering a more open and collaborative learning environment.

In a broader context, OERs are often openly licensed, allowing them to be translated, adapted, and shared globally. This can improve access to quality education for students in developing countries where educational resources may be scarce. Additionally, the open nature of OERs allows them to be constantly updated and improved by educators around the world.

Section 4: Reflections and Conclusions

After interviewing these faculty, I learned that most of them wanted to provide some kind of opportunity for no to low-cost options and move away from textbooks. The analysis revealed interesting information and led me to the conclusion that project design of a toolkit to help these faculty, and other health career faculty in their journey to implement OER within their programs and curriculum would be necessary.

Project Strengths and Limitations

Strengths of the OER toolkit are quality, flexibility, accessibility, professional development, and sustainability. The toolkit can guide educators towards high-quality OERs that will be aligned with current industry standards and best practices. This ensures students are learning the most up-to-date information. The toolkit will empower educators to adapt and personalize OERs to fit their specific course needs and student population. This fosters a more engaging and relevant learning experience. The toolkit will promote OERs that are accessible to students with disabilities, ensuring a more inclusive learning environment. The toolkit can also serve as a valuable professional development resource for health career instructors, helping them integrate OERs into their teaching practice. By promoting the use of openly licensed resources, the toolkit contributes to a more sustainable educational system by reducing reliance on paper textbooks.

Limitations to the project include the time investment, quality, technical skills, and acceptance. Curating and adapting OERs can be time-consuming for instructors, especially those new to using OERs. The toolkit may need to offer time-saving strategies

and resources. The toolkit also needs to provide guidance on evaluating OERs for accuracy, currency, and bias. Some OERs may require technical skills to adapt or integrate into existing courses. The toolkit may need to offer resources or tutorials for educators who are not comfortable with technology. Finally, overcoming traditional reliance on commercial textbooks can be challenging. The toolkit may need to address potential concerns of instructors and provide them with success stories and best practices for using OERs. By understanding both the strengths and limitations of an OER toolkit, I will be able to create a resource that effectively supports instructors in integrating OERs into their teaching practice and ultimately improve the quality and accessibility of health career education for students.

Recommendations for Alternative Approaches

When I was designing this project, I looked at many approaches, including workshops, previously developed models, and repositories that housed a large number of open sources. I had exhausted my resources; that is where the gap in literature truly came in. There was no one true fit for health career programs, especially at the community college level, and for programs that were not nursing driven. There was just no road map for these programs and their faculty.

Scholarship, Project Development, and Leadership and Change

This project has helped me to grow as a scholar and a leader. I have gained project development skills in that I have been able to listen to the needs of other colleagues to hear each of their unique program designs and learning curricula. While student success is an overarching goal for all programs, curriculum needs are very

different in each facet of health career programs. I think that has been the missing component in the design of other open-source design and development. This toolkit combines a curated mix, with adaptability features, combined with simulation that makes this design unique. During project development I was also able to consider each program's accreditation needs.

Reflection on the Importance of the Work

There is incredible value in the OER toolkit project, both for faculty and for students. Faculty will be equipped with a more cost-effective learning tool they can adapt and personalize to meet student learning needs that are unique to their health care programs. They can also stay current with high quality material in an easy-to-use format, away from the limitations of publishing companies. For students, this is an affordable and accessible option that may allow even low-income students to pursue health careers. The toolkit encourages the use of a variety of OER formats like videos, simulations, and interactive modules, catering to different learning styles. This toolkit will also spark collaboration and innovation. In a broader sense, I feel the greater impact is social change. By making education more affordable and accessible, the toolkit contributes to social change by promoting educational equity and empowering individuals to participate more actively in their communities.

Implications, Applications, and Directions for Future Researcher

The widespread adoption of OER toolkits has the potential to significantly reduce the cost of health career education for students, making it more accessible to a wider range of individuals. Increased use of OERs can lead to more up-to-date and evidence-

based learning materials in health career programs, improving the quality of education for future healthcare professionals. Additionally, this OER toolkit will foster a culture of openness and collaboration among health career educators, leading to the development of more innovative and effective teaching practices. The OER toolkit model can be adapted to create similar resources for other disciplines beyond health careers. The toolkit can be integrated with professional development programs for health career educators to promote a wider adoption of OERs. For future researchers, my recommendations are to investigate the attitudes and perceptions of health career students and educators towards OERs, identifying factors that influence their adoption and integration. Additionally, explore the potential of artificial intelligence to personalize OER recommendations and support the creation of adaptive learning materials for health careers.

Conclusion

In conclusion, this research proved to be interesting and led to the conclusion that a design of a toolkit was appropriate to help community college faculty implement OER within their health career curriculum. This OER toolkit will act as a bridge, connecting educators with valuable resources and empowering them to create a more cost-effective, engaging, and equitable learning experience for their students. This can have a ripple effect, leading to positive changes within the education system and society. By exploring these research directions, educators can continue to refine and improve OER toolkits, maximizing their potential to transform health career education into a more affordable, accessible, and effective system for preparing future healthcare professionals.

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Appendix A: The Project

Toolkit for Health Career Educators: How to Design OER in Your Curriculum

Welcome,

This comprehensive toolkit consists of 9 Modules that will empower you as educators to create engaging and affordable learning experiences for students in health career programs.

This framework provides a starting point, and the specific modules can be adapted based on the needs of your program and the target health professions. Remember to consider including relevant case studies, real-world examples, and interactive activities within each module to enhance student engagement.

Purpose:

1. To empower instructors with the knowledge and resources they need to find, evaluate, and integrate OER into their classrooms.
2. To support the effective use of OER in healthcare education. The toolkit equips instructors with strategies for selecting appropriate OER that aligns with learning objectives and adheres to healthcare standards. It also offers guidance on integrating OER into lesson plans, utilizing technology effectively, and ensuring accessibility for all students.

Overall, the toolkit aims to bridge the gap between the availability of OER and its practical implementation within a healthcare curriculum. It fosters a culture of OER adoption within healthcare education, ultimately benefiting both instructors and students.

Level: Community College Health Careers

Learners: Community College Health Career Students

Goals:

Here are the specific goals this toolkit aims to achieve:

For Instructors:

1. **Reduced Cost:** The toolkit should guide instructors on finding and using high-quality OER, minimizing reliance on expensive textbooks.
2. **Increased Flexibility**: The toolkit should provide strategies for adapting and customizing OER to fit the specific needs and learning objectives of their course.
3. **Enhanced Teaching:** The toolkit should offer resources and techniques for effectively integrating OER into various learning activities, leading to a more engaging and interactive classroom experience.
4. **Improved Curriculum Design:** The toolkit should provide clear steps and resources for finding, evaluating, and integrating OER, saving instructors valuable time and effort.

For Students:

1. **Improved Accessibility:** The toolkit should help instructors find OER that is freely available online, reducing financial barriers to accessing course materials.
2. **Diverse Learning Resources:** The toolkit should guide instructors on using a variety of OER formats (text, audio, video) to cater to different learning styles.
3. **Enhanced Engagement:** The toolkit should promote the use of multimedia OER (simulations, case studies) for a more active and engaging learning experience.

4. **Up-to-date Information:** The toolkit should encourage instructors to utilize OER that is evidence-based and reflects current healthcare practices.

For the Institution:

1. **Cost Savings**: Increased use of OER can lead to significant cost savings for both the institution and students.
2. **Improved Program Quality**: The toolkit can help ensure that instructors have access to high-quality resources to support effective teaching and student learning.
3. **Open Educational Practices:** The toolkit can contribute to a culture of open educational practices within the institution, promoting collaboration and knowledge sharing among educators.

Modules:

Module 1: Introduction to Open Education Resources
Module 2: Building a Health Care Curriculum with OER's
Module 3: Copyright and Fair Use for Health Care Educators
Module 4: Technology Tools for OER Development and Delivery
Module 5: OER Development for Specific Health Careers
Module 6: Engaging Students in OER Use in the Health Care Curriculum
Module 7: Assessment and Evaluation
Module 8: Sharing and Collaboration in Health Career Education
Module 9: Sustainability and Continuous Improvement

Module 1:

Introduction to Open Educational Resources (OER)

Learning Objectives:

1. Define and explain the benefits of OERs for students and instructors
2. Explain the various types of OERs (textbooks, simulations, video lectures)
3. Locate and evaluate quality OER

OER can be defined as any teaching, learning, and research materials that are freely available for anyone to use. Here are some key characteristics of OER:

1. **Free Access:** OER reside in the public domain or are licensed in a way that allows users to access them for free.
2. **Open Use:** OER can be used for any educational purpose, including teaching, learning, and research.
3. **Adaptability:** In most cases, OER can be modified and customized to fit the specific needs of a course or individual learner.
4. **Sharing:** OER can be freely shared with others, promoting collaboration and knowledge sharing in education.

OER come in a variety of formats, including:

- Textbooks – both online adaptations, online versions, and online components
- Course modules – many supported by existing Learning Management Systems (LMS) by your institution.
- Lesson plans – can be implemented, designed, and supported by the instructor. May also be designed and adapted to fit any curriculum.

- Articles – can be read only versions, or full versions as needed and supported by the institution's library. Can also be linked to the LMS.
- Simulations – provide virtual patients, real-time decision making in safe virtual environments and customized by instructors to reflect specific healthcare scenarios. Simulation is particularly valuable in healthcare where students can learn in a mistake free environment and enhance their critical thinking skills to improve their confidence and overall patient care.
- Videos – videos are helpful for the visual learner and are especially beneficial in demonstrating medical procedures and visualizing anatomic structures.
- Podcasts – these provide in-depth discussions and interviews with health care professionals, providing unique insight and perspective.

By using OER, educators can create cost-effective and accessible learning experiences for their students.

How to locate and evaluate quality OER:

Open Educational Resources Repositories: These online platforms house a vast collection of OER across various disciplines.

Popular options include:

- OER Commons (https://www.oercommons.org/)
- MERLOT (https://merlot.org/)

- Open Textbook Library (https://open.umn.edu/opentextbooks)

Professional Organizations: Many healthcare professional organizations develop and share OER specific to their field. Look for resources on the websites of relevant associations or societies.

Educational Institutions: Universities and medical schools often create openly licensed educational materials like lectures, videos, or simulations. Explore their websites or OER repositories they might participate in.

YouTube Channels: While not all content is OER, there are reputable YouTube channels dedicated to healthcare education, with some offering openly licensed content. Look for channels affiliated with educational institutions or healthcare organizations.

Evaluating OER for Quality:

Alignment with Learning Objectives: Does the OER address the specific learning objectives and curriculum requirements of your course?

Accuracy and Credibility: Ensure the information presented is current, evidence-based, and comes from reputable sources. Look for author credentials and affiliations.

Accessibility: Is the OER accessible to all students? Consider factors like language, disability accommodations (captions, transcripts), and file formats.

Quality of Content: Consider the overall quality of the OER. Is it well-organized, engaging, and presented in a clear and understandable manner? Are there multimedia elements (images, videos) that enhance learning?

By following these steps, you can effectively locate and evaluate high-quality OER to enrich your healthcare curriculum, promoting a more accessible and engaging learning experience for your students.

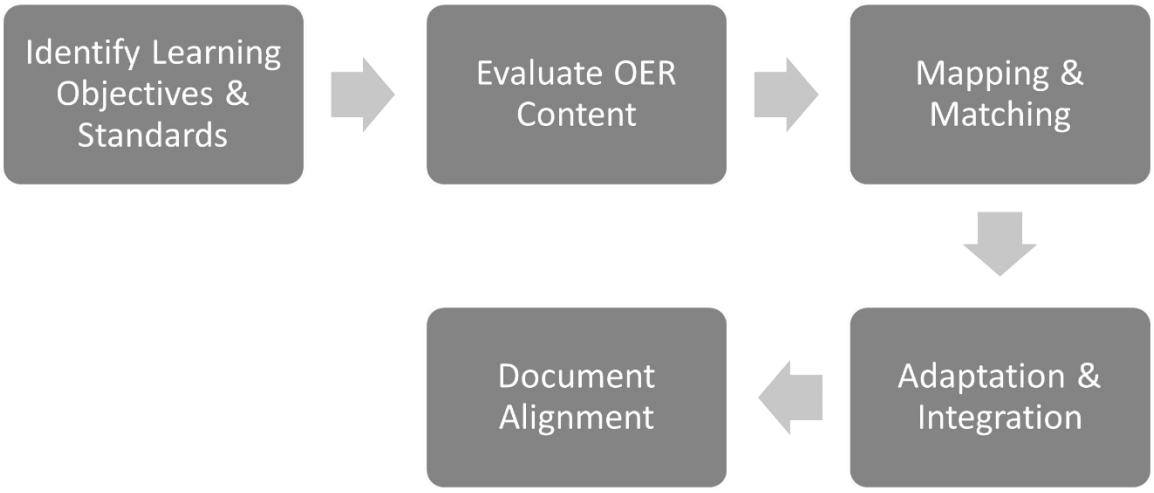
Module 2:

Building a Health Care Curriculum with OER's

Learning Objectives:

1. Align OERs with learning objectives and program standards
2. Outline strategies for integrating OERs into existing courses
3. Create custom learning activities using OERs

Aligning OER with learning objectives and standards is crucial for ensuring your healthcare curriculum is effective and meets the required educational benchmarks. Here's a breakdown of the process:



Step 1: Identify Learning Objectives and Standards

Course Objectives: Clearly define the specific knowledge, skills, and attitudes your students should acquire by the end of the course.

Program Standards: Familiarize yourself with the accreditation standards or national frameworks relevant to your health careers program. These standards outline the essential knowledge and skills expected of graduates.

Step 2: Evaluate OER Content

Content Analysis: Thoroughly examine the OER content (textbook, video, simulation, etc.). Identify the key concepts, skills, or topics that the resource covers.

Learning Activities: Consider if the OER suggests or incorporates activities that align with your learning objectives. Do they encourage critical thinking, problem-solving, or application of knowledge?

Step 3: Mapping and Matching

Create a Table: Develop a table with learning objectives on one side and potential OER on the other.

Match and Analyze: For each learning objective, analyze how well the OER content aligns with it. Can the OER effectively address the specific knowledge or skill you want students to develop?

Step 4: Adaptation and Integration

Adapting OER: If there are minor gaps, consider adapting the OER by adding supplementary materials, creating discussion prompts, or developing quizzes that directly target the learning objective.

Integration Strategies: Plan how you will integrate the OER into your instruction. Will it be the primary resource, a supplement, or used for specific learning activities? What other resources will you need for effective instruction?

Step 5: Document Alignment:

Create a Mapping Tool: Develop a chart or table that maps each learning objective to the specific OER sections or activities that address it.

Justify Adaptations: If you adapt the OER, document the rationale for the changes and how they improve alignment with learning objectives. This will help you move forward with OER use in the future, and to use OER in other courses.

By following these steps, you can leverage OER effectively to deliver a well-structured and standards-aligned healthcare curriculum that prepares students for success. Remember, aligning OER is an ongoing process. As you gain experience and gather feedback, you can refine your selection and adaptation strategies for optimal learning outcomes.

Strategies for Integrating OER into Existing Courses:

Here are some strategies for integrating OER into your existing healthcare courses:

Planning and Selection:

1. Identify Learning Gaps: Before seeking OER, pinpoint areas in your current course where additional resources or a different approach might benefit students.
2. Align with Learning Objectives: Ensure the chosen OER directly addresses the specific learning objectives and curriculum standards of your course.
3. Consider Adaptability: Prioritize OER with open licenses that allow for modification to best suit your teaching style and student needs.

Integration Strategies:

1. Supplementary Materials: Use OER alongside your existing textbook or lectures. For example, incorporate OER articles, simulations, or videos to provide students with diverse learning perspectives.
2. Flipped Classroom Approach: Assign OER readings or video lectures for students to explore independently before class discussions or activities.
3. Activity-based Learning: Utilize OER case studies, simulations, or problem sets to create engaging activities that promote deeper understanding and application of knowledge.
4. Group Work and Projects: Incorporate OER into group projects where students research a specific topic using various OER sources, fostering collaboration and critical thinking.

By following these strategies and utilizing available resources, you can seamlessly integrate OER into your existing healthcare courses, enriching the learning experience for your students while promoting cost-effective and adaptable education. Remember, integration is an ongoing process. As you gain experience, you can refine your approach and make OER an essential part of your teaching toolkit.

Creating Custom Learning Activities:

Remember, the best custom learning activities are tailored to the specific OER format, learning objectives, and student needs. By incorporating these strategies, you can transform OER from static resources into engaging experiences that promote active learning and deeper understanding in your healthcare curriculum. Here are some strategies for creating custom learning activities specifically designed to leverage OER in your health career curriculum.

1. Textbooks and Articles:

Critical Analysis: Develop prompts that challenge students to critically analyze the information presented in the OER text. Ask them to identify the author's perspective, evaluate the evidence provided, and consider alternative viewpoints.

Debate or Discussion: Pose a debatable question related to the OER content and have students research opposing viewpoints using the OER as a primary source. Facilitate a structured debate or class discussion to encourage critical thinking and communication skills.

Concept Mapping: Ask students to create concept maps that visually represent the key concepts and relationships within the OER text. This activity promotes knowledge organization and identification of important connections.

2. Videos and Simulations:

Pre- and Post-Activity Questions: Develop questions for students to answer before and after viewing a video or completing a simulation. Pre-activity questions activate prior knowledge and set the stage for learning, while post-activity questions assess comprehension and encourage reflection.

Observation and Analysis: Design activities where students observe specific details or actions within a video or simulation. Ask them to analyze their observations and answer questions that require close attention to the OER content.

Role-playing and Scenario Building: Use OER simulations or video case studies as a springboard for role-playing activities. Students can enact scenarios, practice communication skills, and apply their learning to real-world situations.

3. Podcasts and Audio Resources:

Listening Guides: Create listening guides with prompts and questions to direct student focus while listening to an OER podcast. This helps them identify key points, analyze arguments, and connect the audio content to learning objectives.

Summarization and Reflection: Ask students to summarize the main points of an OER podcast or audio resource in their own words. Encourage them to reflect on the information presented and its relevance to their learning.

Podcast Debates: Select a podcast episode that presents opposing viewpoints on a healthcare topic. Divide students into groups to research and defend each perspective, fostering critical thinking and communication skills.

4. Enhancing Active Learning:

Problem-solving Scenarios: Develop case studies or problem scenarios based on the OER content. Challenge students to work in groups to apply their knowledge and skills to reach a solution or make a decision.

Collaborative Research Projects: Assign group projects where students use the OER as a starting point to research a specific healthcare topic in greater depth. Encourage them to explore additional resources and present their findings to the class.

Peer Teaching and Review: Have students prepare short presentations or reviews based on specific sections of the OER. This activity promotes deeper engagement with the material and allows students to learn from each other.

5. Technology Integration:

Online Quizzes and Polls: Create online quizzes or polls using the OER content to assess student understanding and identify areas that might need reinforcement.

Interactive Whiteboards or Annotations: Utilize interactive whiteboards or annotation tools to facilitate collaborative analysis of OER content like images, diagrams, or charts.

Digital Storytelling or Simulations: Challenge students to create digital stories or short simulations based on their learning from the OER. This allows them to synthesize information and communicate their understanding in creative ways.

Remember, the best custom learning activities are tailored to the specific OER format, learning objectives, and student needs. By incorporating these strategies, you can transform OER from static resources into engaging experiences that promote active learning and deeper understanding in your healthcare curriculum.

Module 3:

Copyright and Fair Use for Health Career Educators

Learning Objectives:

1. Explain copyright laws and limitations
2. Define fair use guidelines for using copyrighted materials in teaching
3. Identify permissions for using copyrighted content

Copyright law can be complex, but understanding its role in OER is crucial. Here's a breakdown of copyright and fair use considerations for using OER in your healthcare curriculum:

Copyright Basics:

- Copyright protects original works of authorship, including written text, images, videos, and other creative content.
- Copyright owners have exclusive rights to reproduce, distribute, adapt, and publicly display their work.

Fair Use:

- Fair use is a legal doctrine that allows limited use of copyrighted material without permission from the copyright holder, for purposes such as criticism, commentary, education, and news reporting.

Four factors determine fair use:

1. **Purpose and character of the use:** Non-commercial educational use is generally favored under fair use.
2. **Nature of the copyrighted work:** Using factual content is more likely to be considered fair use than creative works.

3. **Amount and substantiality of the portion used:** Using a small, non-essential portion of the work is more likely to be fair use.
4. **Effect of the use on the market:** The use should not significantly harm the potential market for the copyrighted work.

Using OER and Fair Use:

Many OER are created with open licenses, which allow for specific uses without infringing on copyright. Look for the license information associated with the OER to understand permitted uses.

Even with openly licensed OER, fair use principles can still apply. For example, you might use a small excerpt from a copyrighted textbook within a larger OER you're creating for your course, as long as it adheres to fair use factors.

Best Practices:

Always cite your sources, even for OER materials. This acknowledges the original creator and promotes responsible scholarship.

Be mindful of the amount you use: Avoid using substantial portions of copyrighted material without permission, even for educational purposes.

Consider transformative use: When possible, use OER in a way that transforms the original work and creates something new, which strengthens a fair use argument.

Seeking Permissions for Specific Use:

If you find a copyrighted resource that perfectly complements your curriculum but lacks an open license, consider seeking permission from the copyright holder. Here's how:

1. Identify the Copyright Holder: This might be the author, publisher, or organization listed in the copyright notice.
2. Contact Information: Look for contact information on the website, book, or resource itself. You can also try searching online directories or contacting relevant professional organizations.
3. Permission Request: Clearly state your intent to use the copyrighted material in your OER for educational purposes. Be specific about the content you want to use, how you plan to use it, and how you will credit the source.
4. Negotiation: Be prepared to negotiate the terms of use, including attribution requirements and any limitations on adaptation or distribution.

Alternatives to Permission Requests:

Consider Fair Use: If obtaining permission is difficult, evaluate whether your intended use qualifies as fair use based on the four factors (purpose, nature of the work, amount used, market impact). However, fair use can be subjective, so proceed with caution.

Look for Similar OER: Search OER repositories or consult professional organizations for alternative resources that might be openly licensed and meet your needs.

Create Your Own OER: Consider developing your own OER content based on your specific learning objectives. This eliminates copyright concerns and allows for complete control over the material.

Benefits of Permissions:

Obtaining explicit permission provides several benefits:

Clear Copyright Compliance: You have a documented agreement with the copyright holder, eliminating uncertainty about fair use.

Adaptability: The permission might allow you to adapt the content to better suit your course needs.

Relationship Building: Contacting the copyright holder can foster relationships with creators and potentially lead to future collaborations.

Remember:

It's always best to prioritize using openly licensed OER to avoid copyright complications. Seeking permission can be time-consuming, so factor that into your planning. Document any permissions you receive for future reference. By understanding these approaches, you can make informed decisions about using copyrighted content in your OER while ensuring responsible and ethical use.

Module 4:

Technology Tools for OER Development and Delivery

Learning Objectives:

1. Identify online platforms for creating and sharing OERs (e.g., Google Docs, OER Commons)
2. Explain multimedia tools for enhancing OER content (e.g., audio/video editing, simulations)
3. Explain accessibility considerations for creating inclusive OERs

Here are some online platforms you can explore for creating and sharing Open

Educational **Resources & online platforms for OER in your healthcare curriculum:**

General

- OER Commons Builder
- MERLOT content builder
- Curriki
- Google Docs

Discipline Specific

- LibreTexts
- National Institutes of Health - Science Education Resources
- Institutional Repositories
- National organization

Multimedia tools for enhancing OER content:

Here's a breakdown of multimedia tools that can enhance your Open Educational

Resources (OER) for a more engaging and effective healthcare curriculum:

Visual Tools:

- Images and Illustrations: Use high-quality medical illustrations, photographs, and diagrams to represent anatomical structures, procedures, or disease states.
    - Tools: Consider free stock photo websites like Pexels (https://www.pexels.com/) or Unsplash (https://unsplash.com/) or explore Creative Commons licensed images on Flickr (https://www.flickr.com/)
    - Copyright Considerations: Ensure you have the rights to use any images, especially for medical illustrations where accuracy is crucial.
- Infographics and Data Visualization: Present complex medical data or processes in a clear and visually appealing way using infographics and data visualization tools.
    - Tools: Explore free and user-friendly options like Canva (https://www.canva.com/)

Audio and Video Tools:

- Podcasts and Audio Recordings: Record lectures, interviews with healthcare professionals, or patient case studies to provide students with alternative learning formats and diverse perspectives.

    Tools: Free audio editing software like Audacity (https://www.audacityteam.org/) can help with basic editing and production.

- Medical Simulations: Incorporate interactive simulations to provide students with safe practice environments for honing their skills and decision-making abilities.
    - Tools: Explore OER repositories or resources from healthcare professional organizations for pre-made simulations. Some free simulation creation tools are available but require more technical expertise.
- Explainer Videos and Animations: Use animation tools to create engaging explainer videos that break down complex medical concepts or procedures into easily digestible segments.
    - Tools: Consider user-friendly animation tools like Powtoon (https://www.powtoon.com/) or Animaker (https://www.animaker.com/) for creating basic animations.

Additional Considerations:

Accessibility: Ensure all multimedia elements are accessible to students with disabilities. Use alt text for images, provide transcripts for audio recordings, and consider closed captions for videos.

Technical Requirements: Be mindful of any software or hardware needed to access specific multimedia tools, particularly simulations or interactive components.

Integration with OER Content: Don't overload your OER with multimedia elements. Ensure they are strategically placed and complement the written content to enhance understanding.

By incorporating these multimedia tools effectively, you can transform your OER into engaging and interactive learning experiences, catering to diverse learning styles and promoting deeper knowledge retention for your healthcare students.

Accessibility considerations for creating inclusive OER:

Here is a list of accessibility considerations to ensure your Open Educational Resources (OER) are inclusive and usable by all students in your healthcare curriculum:

Following WCAG Guidelines:

- **Web Content Accessibility Guidelines (WCAG)** developed by the World Wide Web Consortium (W3C) provide a set of internationally recognized standards for making web content accessible to people with disabilities. Aim to follow these guidelines when creating or selecting OER, especially those delivered online.

Key Accessibility Features:

1. **Alternative Text (Alt Text):**

Provide clear and descriptive alt text for all images, charts, and diagrams. This allows screen readers to convey the image content to visually impaired students.

2. **Keyboard Accessibility:** Ensure your OER content, including any interactive elements, can be navigated and accessed using just a keyboard. This caters to students with motor impairments who might not be able to use a mouse.
3. **Color Contrast:** Maintain sufficient color contrast between text and background to ensure readability for students with visual impairments, including those with color blindness.

4. **Transcripts and Closed Captions**: Provide transcripts for audio recordings and closed captions for videos. This benefits students who are deaf or hard of hearing, as well as those who learn better through auditory channels.
5. **Logical Structure:** Use clear headings, subheadings, and bullet points to organize your OER content. This creates a predictable structure that aids navigation for users with cognitive disabilities.
6. **Font Size and Readability:** Choose easy-to-read fonts and maintain a comfortable font size to avoid straining students' eyes.

Module 5:

OER Development for Specific Health Careers

Learning Objectives:

1. Develop an OER for specific health professions (nursing, medical assisting, etc.)
2. Design resources tailored to the chosen career path
3. Promote strategies for collaborating with healthcare professionals to create relevant content

This guide helps to outline the steps involved in developing OER specific to each healthcare profession:

Step 1: Identify your profession or health career you want to develop the OER for

Step 2: Define your learning objectives and standards (see Module 2)

Step 3: Curating OER Content

- Open Educational Resources Repositories:
- Search OER repositories like OER Commons (https://www.oercommons.org/) or MERLOT (https://merlot.org/) for existing learning modules, textbooks, or simulations relevant to the health career.
- Professional Organizations: Many healthcare professional organizations develop educational resources for their members. Explore their websites or OER repositories for relevant content.
- Government Agencies and Public Health Institutions: Websites of government agencies like the Centers for Disease Control and Prevention (CDC) (https://www.cdc.gov/) or National Institutes of Health (NIH) (https://www.nih.gov/) often have valuable educational resources.

Step 4: Developing original content

- If you can't find enough suitable OER materials, consider creating original content to fill the gaps.

  This could include:

- Text modules on specific healthcare procedures or patient care protocols.
- Case studies relevant to the chosen health career.
- Interview videos with healthcare professionals in the field.

Step 5: Formatting and Organization:

- Structure your OER in a user-friendly and accessible way.
- Consider using a modular format with clear headings, bullet points, and concise language.
- Incorporate multimedia elements like images, diagrams, and videos to enhance understanding.

Step 6: Ensure resources are tailored to your health career:

- Foundational Knowledge: Include modules covering essential scientific principles relevant to the healthcare career, such as human anatomy, physiology, and medical terminology.
- Skills Development: Focus on practical skills and procedures specific to the chosen career. Provide clear instructions, demonstrations, and potentially incorporate simulations for safe practice.
- Professionalism and Communication: Integrate modules on ethical considerations, communication skills with patients and colleagues, and healthcare documentation practices.
- Case Studies and Real-World Applications: Incorporate real-world case studies, simulation or scenarios to help students apply their knowledge and skills to practical situations.

Step 7: Hosting and Sharing for Collaborating:

- Publish your OER on an online platform like OER Commons or your institution's repository.
- Consider sharing the OER with relevant professional organizations or online communities related to the chosen health career.

Additional Tips:

- Gather Feedback: Involve healthcare professionals in your field to review your OER and provide feedback on its accuracy and relevance.
- Pilot Test with Students: Pilot test your OER with a small group of students to assess its effectiveness and identify any areas for improvement.
- Maintain and Update: Healthcare practices and standards can evolve. Regularly update your OER to reflect the latest advancements in the field.

By following these steps and considerations, you can develop a valuable OER that effectively prepares students for their chosen health career path, promoting open access to education and empowering future healthcare professionals.

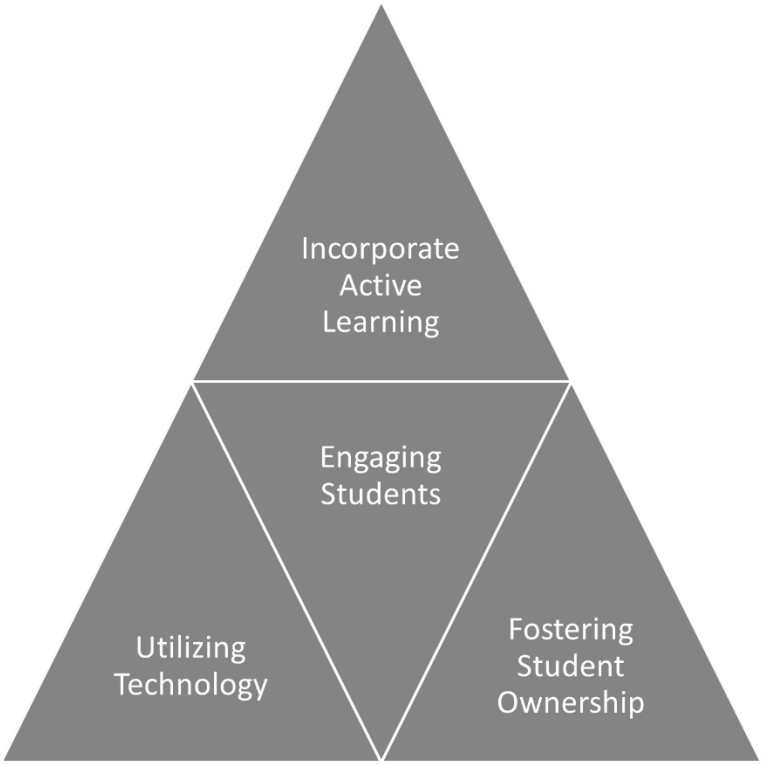
Module 6:

Engaging Students in OER Use in the Health Care Curriculum

Learning Objectives:

1. Incorporate strategies for student-created content into health careers courses.
2. Design collaborative OER projects (case studies, patient education materials, simulations).
3. Utilize OER creation to develop student skills in critical thinking, research, and communication

Integrating OER into your healthcare curriculum is a great way to promote cost-effective learning, but it's crucial to ensure students find the resources engaging and valuable. Here are some strategies to boost student engagement with OER:



Incorporating Active Learning:

- **Student-led Activities:** OER-based research projects where students explore specific topics and present their findings to the class. This fosters critical thinking, communication skills, and deeper understanding.
- **Collaborative Learning**: Divide students into groups and assign them different OER sections or case studies. Encourage them to collaborate, analyze the material, and present their combined learning to the class.
- **Interactive Discussions**: Pose open-ended questions based on the OER content to stimulate class discussions and debates. Encourage students to analyze information, present different perspectives, and support their arguments with evidence from the OER.

Utilizing Technology:

- **Online Quizzes and Polls:** Create online quizzes or polls using the OER content to assess student understanding in a fun and interactive way.
- **Annotation Tools and Discussion Boards:** Integrate annotation tools or discussion boards linked to your OER. This allows students to highlight key points, share questions, and discuss the material asynchronously.
- **Digital Storytelling and Simulations:** Challenge students to create digital stories or short simulations based on their learnings from the OER. This promotes creativity and a deeper grasp of complex healthcare concepts.

Fostering Student Ownership:

- **Student Feedback and Improvement:** Encourage students to provide feedback on the OER content, its usability, and how it could be improved. Consider incorporating their suggestions in future versions.
- **Peer Review and Collaboration:** Have students peer-review each other's work based on the OER content. This promotes critical thinking, self-reflection, and collaborative learning.
- **Student-Generated OER Contributions:** If your OER platform allows, consider incorporating opportunities for students to contribute additional content or case studies relevant to their learning experiences.

Additional Tips:

1. **Variety is Key:** Balance traditional lectures or presentations with engaging activities and interactive elements that leverage the OER content.
2. **Technical Support**: Ensure students have the necessary technical skills and access to any software or hardware required to use specific OER features.
3. **Develop Student OER Literacy:** Dedicate some time to guiding students on how to effectively navigate, analyze, and evaluate information within OER resources.

By implementing these strategies, you can transform OER from static resources into a springboard for active learning and student engagement. This fosters a more dynamic and ownership-driven learning environment, where students become active participants in their healthcare education journey.

Module 7:

Assessment and Evaluation

Learning Objectives:

1. Develop assessments aligned with OER learning objectives
2. Promote strategies for using open educational assessments (OEAs)
3. Utilize technology for online quizzes and feedback

Here's a breakdown of creating assessments aligned with the learning objectives of your Open Educational Resources (OER) for a healthcare curriculum:

1. **Analyze learning objectives:**

    - Starting Point: Begin by thoroughly analyzing the specific learning objectives outlined in your OER content. These objectives should define the knowledge, skills, and attitudes students should gain by the end of the learning module or course.
    - Categorize Objectives: Group the learning objectives into categories based on the type of knowledge or skill they represent. This will help you choose appropriate assessment formats (e.g., knowledge-based objectives might be best assessed with multiple-choice questions, while skills might require simulations or case studies).

2. Choosing the Right Assessment Type:

- Match Assessment to Objective: Align assessment types with the specific learning objectives they aim to measure. Here are some common examples:
    - Knowledge:
        - Multiple-choice questions
        - Matching exercises

- True/false quizzes
- Short answer questions

- Skills:
  - Case studies
  - Simulations
  - Role-playing activities
  - Performance-based assessments (e.g., demonstrating a healthcare procedure)
- Attitudes and Values:
  - Essays
  - Reflective writing prompts
  - Group discussions
  - Ethical dilemma scenarios

3. **Aligning Assessments with OER Content:**
   - Specificity is Key: Craft assessments directly linked to the content and learning activities within your OER. Avoid generic questions that don't specifically test the knowledge or skills students acquire through the OER materials.
   - Reference OER Material: Explicitly refer to specific sections, concepts, or activities within the OER when formulating assessment questions or instructions. This helps students understand the connection between the OER and the assessment.

4. Craft Specific Assessment Questions/Tasks:

- Focus on OER Content: Ensure your assessment questions or tasks directly target the knowledge, skills, and abilities outlined in the OER. Avoid generic questions that don't require students to engage with the specific OER materials.
- Depth and Variety: Incorporate a variety of question formats within each assessment to cater to different learning styles and comprehensively evaluate understanding.

- Higher-order Thinking: Go beyond simple recall. Include questions that encourage critical thinking, analysis, and application of knowledge gleaned from the OER.
- Real-world Relevance: Whenever possible, frame your assessments within realistic healthcare scenarios relevant to the chosen healthcare career path.

5. Consider Open-ended Assessments:

- Promote Deeper Learning: Integrate open-ended questions, essays, or reflection prompts that encourage students to elaborate on their understanding, explain their reasoning, and demonstrate their ability to synthesize information from the OER.

6.Pilot Test and Refine

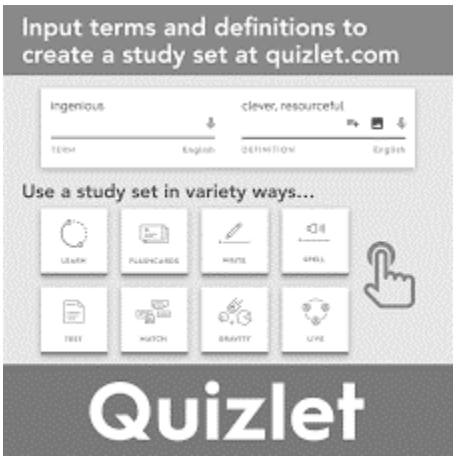
- Feedback Mechanism: Pilot test your assessments with a small group of students before widespread implementation. This helps identify any confusing wording, ambiguities, or areas where the assessments might not effectively measure learning objectives.
- Refine Based on Feedback: Gather feedback from students and instructors involved in the pilot test. Use this feedback to refine your assessments and ensure they are clear, concise, and accurately measure what students have learned from the OER.

By strategically using OER assessments, you can create a dynamic and effective learning environment that leverages the strengths of both open educational resources and formative assessment practices. This empowers students to take ownership of their learning journey and ultimately succeed in their healthcare curriculum.

Technology offers a multitude of tools to create engaging online quizzes and deliver effective feedback for your healthcare curriculum. Here's a breakdown of how you can leverage technology:

Creating Engaging Online Quizzes:

- Online Quiz Creation Platforms: Explore platforms like Quizlet (https://quizlet.com/), Kahoot (https://create.kahoot.it/), or Socrative (https://www.socrative.com/blog/ed-tech/top-formative-assessment-strategies/) to design interactive quizzes with various question formats (multiple choice, true/false, matching, open ended). Many offer free tiers or educator discounts.



- Multimedia Integration: Incorporate images, audio clips, or short video snippets into your quizzes to enhance engagement and cater to diverse learning styles. For example, use real-world medical images in anatomy quizzes or audio simulations for testing clinical skills.
- Gamification Elements: Platforms like Kahoot! incorporate game mechanics like points, leaderboards, and timers to add a fun and competitive element to online quizzes, boosting student motivation and participation.

- Question Randomization: Utilize features that shuffle question order and answer choices to prevent cheating and encourage students to focus on understanding the concepts rather than memorizing specific answers.

Providing Effective Feedback:

- Automated Feedback: Many online quiz platforms offer automated feedback for multiple-choice or true/false questions. This provides students with immediate confirmation of their answers and highlights areas where they might need to revisit the OER content.
- Personalized Feedback: For open-ended questions or essay prompts, consider providing written feedback that addresses specific strengths and weaknesses in student responses. Offer suggestions for improvement and point students towards relevant sections of the OER for further study.
- Peer Feedback Activities: Incorporate peer-review elements where students assess each other's work based on the quiz content and established criteria. This fosters critical thinking, communication skills, and self-reflection. You can leverage online forums or discussion boards to facilitate these interactions.
- Video Feedback Tools: Consider using screen casting tools to record brief video explanations alongside written feedback. This can be particularly helpful for complex concepts or when providing visual demonstrations for improvement.

Module 8:

Sharing and Collaboration in Health Career Education

Learning Objectives:

1. Identify benefits of collaboration among health educators for OER development
2. Develop online communities and platforms for sharing OERs
3. Share strategies for promoting and advocating for OER use in health education

There are numerous benefits to collaboration among healthcare educators when developing Open Educational Resources (OER) for their curriculum:

Enhanced Content Quality and Expertise:

- Diversity of Knowledge: Collaboration brings together educators with specialized knowledge and experience in different healthcare fields. This ensures the OER content is comprehensive, accurate, and reflects the latest advancements in various healthcare practices.
- Peer Review and Feedback: Collaborative development allows for peer review of the OER content throughout the creation process. Educators can identify

potential biases, suggest improvements in clarity, and ensure the materials align with current healthcare standards.

- Shared Workload and Efficiency: Distributing the workload across multiple educators streamlines the OER development process. This can save time and effort, allowing educators to focus on specific areas of expertise while benefiting from the contributions of others.

Increased efficiency and resource sharing:

- Reduced Workload: Sharing the workload of OER development across multiple educators makes the process more efficient and less time-consuming for each individual. This allows educators to focus on their core teaching responsibilities while still contributing to high-quality learning materials.
- Shared Resources and Expertise: Educators can share existing resources like lesson plans, simulations, or multimedia elements, reducing the need to develop everything from scratch. This leverages the existing expertise and materials within the healthcare education community.
- Sustainability and Maintenance: Collaboration fosters a shared responsibility for maintaining and updating the OER over time. This ensures the OER remains relevant and reflects the evolving healthcare field.

Increased innovation and creativity:

- Diverse Ideas and Approaches: Bringing together educators with different backgrounds encourages brainstorming and the exchange of fresh ideas. This can lead to more innovative approaches to presenting healthcare concepts and engaging students in the learning process.
- Multimedia and Interactivity: Collaboration can facilitate the creation of richer OER experiences by incorporating a wider range of multimedia elements like simulations, case studies, and interactive exercises. These enrich the learning experience for students and cater to diverse learning styles.

Improved learning outcomes:

- Diverse Teaching Approaches: Collaboration incorporates different teaching styles and perspectives into the OER design. This can cater to diverse learning styles among students, leading to a more engaging and effective learning experience.
- Standardized Learning Objectives: Working together allows educators to establish clear and consistent learning objectives across the OER. This ensures students gain the necessary knowledge and skills required for their chosen healthcare careers.
- Best Practices Sharing: Collaboration fosters the exchange of best practices in OER design and implementation within healthcare education. This can benefit all

educators involved and ultimately lead to improved learning outcomes for students.

Community building and networking:

- Collaboration fosters a sense of community and network among healthcare educators. This can lead to ongoing professional development opportunities and knowledge sharing within the healthcare education field.

Here are some online communities where healthcare educators and professionals can share and collaborate on Open Educational Resources (OER):

We have already learned about some of the repositories such as MERLOT and OER Commons, let's look at some more discipline specific OER communities.

Association of American Medical Colleges MedEd Portal (AAMC)	National League for Nursing & Center for Excellence in Nursing	Libre Texts
• platform for sharing and collaboring on medical education resources, case studies, and assessment tools relevant to medical education	• offers resources and promotes collaboration amoung nursing educators • relevant resources about open educational resources in nursing education	• platform for collaborative OER creation • educators can work together to build and edit learning materials • projects or communities focused on OER materials

Also consider social media platforms such as Twitter, Facebook to connect with other educators, share resources and ask questions. You may find chats or other open discussions where educators share OER and best practices.

How to promote and advocate for OER use in healthcare education:

1. **Highlight Cost Savings:** Emphasize the financial benefits of OER compared to traditional textbooks. Focus on how OER can significantly reduce the financial burden on students, especially in healthcare fields with already high tuition costs.
2. **Improved Learning Outcomes:** Showcase research and studies that demonstrate the positive impact of OER on student learning. OER can promote active learning, engagement, and deeper understanding compared to passive textbook reading.
3. **Accessibility and Equity**: Advocate for the benefits of OER in promoting educational equity. OER removes cost barriers and allows all students, regardless of financial background, to access high-quality learning materials.
4. **Identify your Target Audience:** present OER to administrators to show how OER can contribute to the institution's commitment to affordability and accessibility. Present to faculty and highlight the time-saving benefits of readily available online resources. Present to students and promote the financial benefits of OER and how it will enhance their learning experience.

5. **Advocacy Strategies:** advocate for institutional policies that encourage or incentivize OER adoption within healthcare education programs.
6. **Consider Collaboration and Transparency:** Connect with healthcare professional organizations that might support OER initiatives. Look for existing OER resources they may have developed or collaborate on creating OER specific to your healthcare field.

Module 9:

Sustainability and Continuous Improvement

Learning Objectives:

1. Maintain and update OER materials
2. Design strategies for engaging students and instructors in OER development
3. Explore grant opportunities or partnerships to support OER initiatives

Here's a comprehensive guide on keeping your healthcare focused OER materials fresh, accurate, and relevant:

Step 1: Establish a Maintenance Plan

- Define Update Frequency: Determine a realistic update schedule for your OER content. This could be based on yearly intervals, coinciding with new academic terms, current assessment guidelines, or triggered by significant advancements in healthcare practices.
- Identify Update Triggers: Establish specific criteria that would necessitate an OER update. This could include changes in healthcare regulations, guidelines, or the introduction of new technologies relevant to your chosen healthcare field.

Step 2: Monitoring Updates in Healthcare

- Professional Associations: Stay updated on the latest guidelines, protocols, and best practices issued by relevant healthcare professional associations. These updates might necessitate revisions to your OER content.

- Medical Journals and Research: Regularly review recent research publications in your healthcare field. Incorporate new findings or evidence-based practices into your OER to maintain its scientific accuracy.
- Government Agencies and Health Organizations: Monitor websites of government agencies like the Centers for Disease Control and Prevention (CDC) (https://www.cdc.gov/) or National Institutes of Health (NIH) (https://www.nih.gov/) for updates on public health recommendations or changes in healthcare regulations.

Step 3: Utilizing Feedback and User Engagement:

- Student Feedback Mechanisms: Integrate mechanisms for students to provide feedback on the OER content, its accuracy, and its effectiveness in promoting learning. This feedback can guide revisions and highlight areas needing updates.
- Peer Review: Incorporate a peer review process where healthcare professionals in your field can review your OER content periodically. Their feedback can ensure the OER remains current with industry standards and best practices.
- Community Forums: If your OER is hosted on a platform with community forums or discussion boards, actively participate in discussions and address any questions or concerns raised by users. This fosters collaboration and helps identify areas for improvement.

Step 4: Updating OER Content:

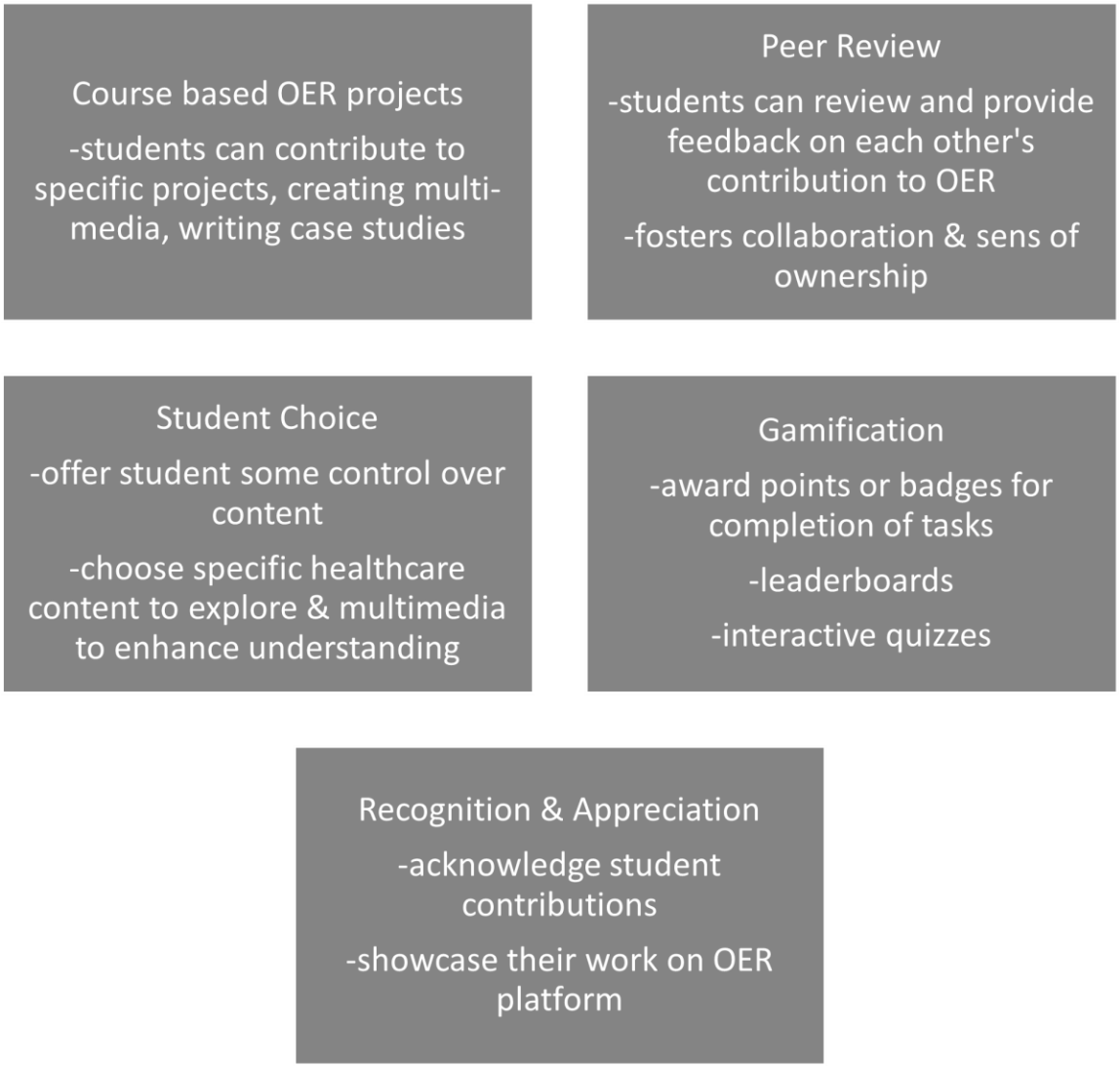
- Accuracy and Consistency: Ensure any updates to your OER content maintain accuracy, consistency, and alignment with current healthcare practices and evidence-based knowledge.
- Clarity and Conciseness: Maintain clear and concise language throughout your OER. Update terminology or explanations if necessary to avoid confusion for students.
- Multimedia Elements: Review and update any multimedia elements (images, videos, simulations) within your OER to reflect current practices or technologies relevant to the healthcare field.

Additionally:

- Versioning and Documentation: Clearly document any changes made to your OER, including the date, nature of the update, and rationale behind the revision.
- Dissemination Strategies: Inform students or colleagues who are using your OER about any updates. Consider offering revised versions or highlighting key changes within your existing platform.
- Accessibility Review: Regularly review your OER content for accessibility and ensure it remains usable for students with disabilities. Follow WCAG guidelines (refer to previous explanation) to maintain clear explanations, alternative text for images, transcripts for audio recordings, and closed captions for videos.

Here are some design strategies to engage students and faculty in the development of Open Educational Resources (OER) for healthcare education:

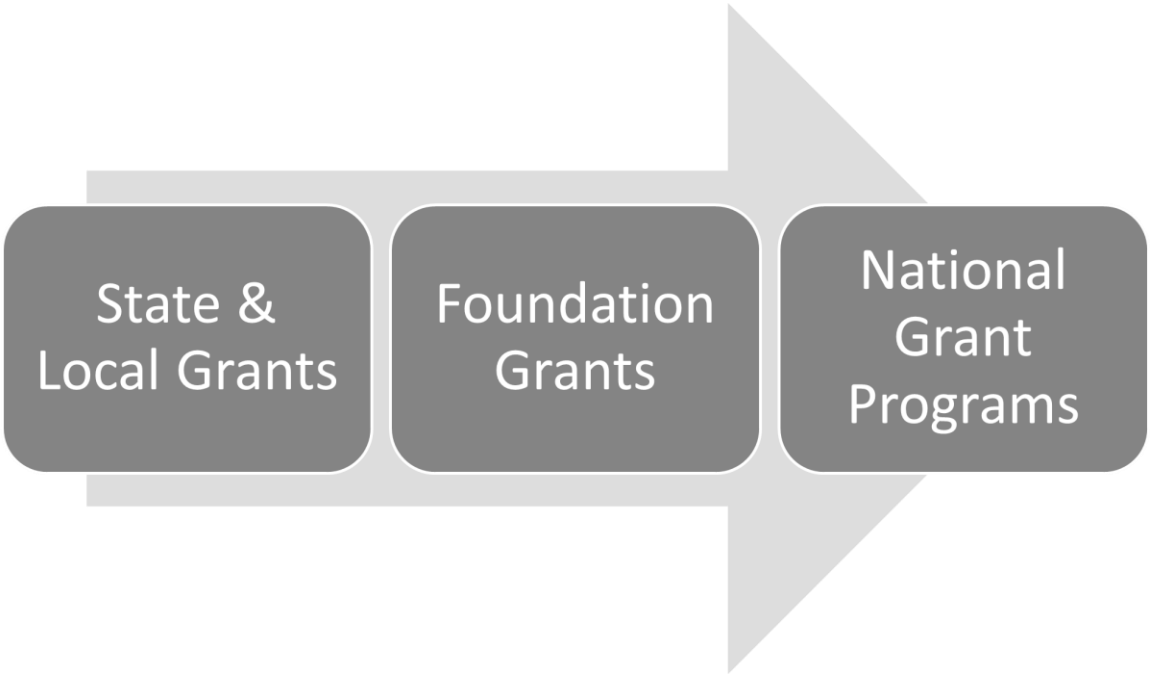
Design strategies for engagement of students:



Strategies for Engaging Faculty:

- **Faculty Development Workshops:** Organize workshops on OER development and integration into healthcare curricula. Provide training on open licensing, copyright considerations, and strategies for creating engaging OER materials.
- **Recognition and Incentives:** Offer incentives (e.g., course release time, professional development stipends) to faculty who actively participate in OER development projects.
- **Focus on Benefits:** Highlight the benefits of OER development for faculty, such as increased flexibility in course design, reduced reliance on expensive textbooks, and potential for wider dissemination of their expertise.
- **Collaboration and Community Building:** Foster a collaborative environment where faculty can share ideas, best practices, and resources related to OER development. Consider creating online forums or discussion groups for faculty to connect and support one another.
- **Pilot Programs and Support:** Offer support and guidance for faculty who are interested in piloting OER in their healthcare courses. Help them navigate the selection of existing OER or the adaptation of materials for their specific teaching needs.

Grant Opportunities to Support OER Initiatives:



National Grant Programs:

- **The Department of Education's Open Textbook Pilot Grant Program:** This program (subject to Congressional appropriation) offers grants to institutions of higher education for projects that create or expand the use of open textbooks to achieve student savings. (https://www2.ed.gov/programs/otp/index.html)
- **Institute of Education Sciences (IES):** The IES offers a variety of grants supporting educational improvement, and while not specifically focused on OER, some grants might be relevant to OER development projects with a strong research component. Explore funding opportunities on their website. (https://ies.ed.gov/)
- **National Institutes of Health (NIH):** The NIH funds various research projects related to healthcare. If your OER initiative has a strong research component

focused on improving healthcare education through OER, explore relevant funding opportunities on the NIH website. (https://www.nih.gov/grants-funding)

Foundation Grants:

- **The William and Flora Hewlett Foundation:** A leading supporter of open education initiatives. They offer grants for a variety of OER-related projects, including OER development in specific disciplines like healthcare. Review their grant programs and funding opportunities on their website. (https://hewlett.org/grants/)
- **The Mellon Foundation:** Another strong supporter of open education. While their grant opportunities might not be exclusively focused on OER development, they might fund projects that involve creating openly licensed educational materials relevant to healthcare education. Explore their grant programs on their website. (https://www.mellon.org/grant-programs)

State and Local Grants:

- **Check with your state's education department or higher education agency websites.** Many states offer grants to support educational innovation, and some might have specific programs dedicated to OER initiatives.
- **Explore grant opportunities offered by local foundations or educational institutions in your area.** Some might have funding programs that align with your OER development goals in healthcare education.

Additionally: Check with your institution for grant writing assistance. There are possibilities for internal funding within your healthcare education institution. Some

universities or colleges might have dedicated budgets or faculty development programs that could support OER initiatives.

By exploring these avenues and strategically pursuing grant opportunities, you can secure the necessary funding to bring your healthcare education OER project to fruition. Remember, well-developed OERs can significantly benefit students by reducing educational costs and offering high-quality learning materials, paving the way for a more accessible and successful learning experience.

Final thoughts:

By incorporating the elements within this toolkit, you can design a comprehensive and user-friendly OER that empowers you as healthcare educators to embrace the transformative potential of Open Educational Resources. Remember, a well-designed OER in a health care curriculum can be a catalyst for a more affordable, accessible, and future-proof healthcare education system.

Appendix B: Interview Protocol

Interview Protocol	
What you will do	**What you will say—script**
Introduce the interview and set the stage—often over a meal or coffee	Hi, thank you for agreeing to take the time to do this. I expect this will take no more than 40 minutes. If you have any questions please don't hesitate to interrupt me at any point.
• Watch for non-verbal queues • Paraphrase as needed • Ask follow-up probing questions to get more in depth	1. What health career do you currently teach in? How long have you taught in that area? 2. What is your experience with open education resources (OER)? 3. Have you noticed anything about textbook costs or changes in textbook use in your classroom recently? (possible follow-up: Has the pandemic changed this?) 4. Do you have any input on changes or adaptations to textbooks or resources selected for your courses in your program? 5.What are community college faculty perceptions about OER use in their health career curriculum? 6. What barriers do community college faculty experience with OER use? 7. How can community college faculty overcome barriers to use of OER in health career curriculum? 8. If you wanted to use OER more effectively, what supports would you like to see in place? 9. What would prevent you from using OER? 10. What additional experiences have you had that you want to share about OER or textbook use and your program?
Wrap up interview thanking participant	Thank you so much for taking the time to chat with me.
Schedule follow-up member checking interview	Within a week you will receive from me, by email, a one-page summary analysis of our conversation. You'll have the opportunity to add, clarify, or correct anything you see in that sheet.

Appendix C: Email Invitation

Subject line:
Interviewing health career faculty regarding OER use ($20 thank you gift)

Email message:
There is a new study about the experiences of health career faculty and the use of Open Educational Resources (OER) in their health career program that could help faculty better understand how to implement OER in their classrooms and help their students and their curriculum. For this study, you are invited to describe your experiences regarding OER use in your health career program.

About the study:

- One 30-60 minute interview that will be audio recorded (no video recording)
- You would receive a $20 Visa gift card as a thank you
- To protect your privacy, the published study will not share any names or details that identify you

Volunteers must meet these requirements:

- 18 years old or older
- Full-time faculty in a health career field, with the exception of the respiratory therapist program

This interview is part of the doctoral study for MaryBeth Cregger, an EdD. student at Walden University. Interviews will take place during November.

Please email [redacted] to let the researcher know of your interest.

Appendix D: Evaluation Tool

Evaluation Tool for OER Toolkit for Community College Health Career Faculty

This evaluation tool can help assess the effectiveness of your OER toolkit designed for community college health career instructors.

Instructions: Please rate each statement on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

I. Content & Resources:

- The toolkit provides clear and concise information on finding high-quality OERs. (1-5)
- The toolkit includes a variety of OER resources relevant to different health career fields. (1-5)
- The toolkit offers guidance on evaluating OERs for accuracy, currency, and accessibility. (1-5)
- The toolkit provides practical strategies for adapting and integrating OERs into existing curricula. (1-5)
- The toolkit offers suggestions for developing engaging learning activities to supplement OERs. (1-5)
- The toolkit includes guidance on creating assessments aligned with OER content. (1-5)

II. Usability & Design:

- The toolkit is well-organized and easy to navigate. (1-5)
- The information in the toolkit is presented in a clear and concise manner. (1-5)
- The visual design of the toolkit is appealing and user-friendly. (1-5)
- The toolkit is available in a format that is easily accessible to educators (e.g., online, printable). (1-5)

III. Impact & Value:

- The toolkit provides valuable information and resources for instructors interested in using OERs. (1-5)
- The toolkit is likely to help instructors save time and resources when developing their courses. (1-5)
- The toolkit has the potential to improve the quality of instruction in health career programs. (1-5)

- I would recommend this toolkit to other community college health career instructors. (1-5)

Optional: Open Ended Questions

- What are the most valuable aspects of this OER toolkit?
- How could this OER toolkit be improved?
- Are there any additional resources you would like to see included in the toolkit?

Additional Considerations:

- Consider including space for users to provide feedback on specific sections of the toolkit.
- You may also want to gather qualitative data through interviews or focus groups with educators who have used the toolkit.

By analyzing the results of this evaluation tool, you can gain valuable insights into the effectiveness of your OER toolkit and make data-driven decisions for improvement.