

Summary: With IMLS National Leadership Grants for Libraries program Goal 3, Objective 3.1 and Goal 1, Objective 1.1 as its aims, VIVA, a state-funded consortium of 71 academic libraries in Virginia, in cooperation with Software Services by Scientist.com (SoftServ), a software development company with a proven record of contributing to open source software, and the Roy Rosenzweig Center for History and New Media (RRCHNM), the developers of Zotero and Omeka, requests \$248,235 for the next phase of development of an open source, learning management system (LMS)-integrated Open Educational Resources (OER) repository for assessment, homework, and test-bank resources. The first phase of this project, funded by an IMLS National Leadership Planning Grant, has resulted in the prototype of a discipline-agnostic, replicable tool that instructors can use to share and search course assessments, which can be integrated into a LMS. While the prototype will be tested by faculty, further refined by developers, and communicated widely during the final year of the planning grant, we seek funding for the next phase of development to expand the platform's functionality, increase available disciplines and question types, integrate with additional LMSes, create documentation and training materials, and finally, develop a business plan that ensures the long-term accessibility and sustainability of this platform.

Project Justification: The escalating cost of course materials is a well-documented challenge for students, significantly impacting their academic progress and success.¹ While OER provide a vital, freely available solution, a key challenge arises in the absence of integrated homework and testing platforms, which can reduce faculty workload and provide students with immediate feedback through interactive assessments. This absence often deters instructors from fully embracing otherwise effective, cost-free textbooks for their classes. COALA², an LMS-integrated homework repository prototype, developed from the IMLS National Leadership Planning Grant awarded to VIVA in 2022, demonstrates a viable homework platform alternative; highlighting the potential of an open-source tool to search, share, and assign assessments using existing workflows and practices.

VIVA is seeking funding before our previous grant concludes to capitalize on the project's current momentum, having surpassed initial project milestones and demonstrated the feasibility of the platform. Further, the educational landscape is evolving at an unprecedented pace, requiring that we continue active development to ensure the viability of this solution. COALA's importance is greater now than it was when the initial planning grant was submitted. In addition to strong feedback from focus groups affirming the broad disciplinary needs for this tool, COALA addresses two pivotal developments in higher-ed: the increasing adoption of inclusive and equitable access programs across the country and the integration of Artificial Intelligence (AI). Inclusive and equitable access programs, which lease and bundle expensive course materials and homework platforms, pose a significant challenge to the viability of OER. These programs can create barriers for students by dictating purchasing options and limit faculty's pedagogical choices. COALA counters this by offering a solution to integrate instructor-chosen open ancillaries into an LMS at no cost. Moreover, the surge of AI in higher education calls for forward-thinking strategies. COALA's design flexibility enable us to explore the utilization of AI to facilitate the development of supplementary materials with subject experts. Libraries continue to play a pivotal role in the advancement of OER, often leading institutional OER initiatives and supporting the use and creation of OER. Library consortia, five of which are represented on the project's Advisory Board, as organizations dedicated to developing collaborative and cost-effective solutions for higher ed, remain well-poised to support their members in this work. The success of libraries efforts relies on their ability to meet the needs of this moment by ensuring a mechanism exists for instructors to create and share ancillary materials that make OER an effective option. COALA answers this need, providing a platform to store and share open assessments while expanding the utility of OER. Further, this platform can be integrated into and advance other consortial library efforts, such as BTAA's investigation through their planning grant "Open Homework Systems: Planning and Piloting Library Support" of library-led support for open homework systems, ensuring greater impact for library OER initiatives, faculty, and students.

¹ The results of the 2021 VIVA Virginia Course Materials Survey (<https://vivalib.org/va/open/survey>) and the 2022 Florida Textbook and Instructional Materials Survey (<https://tinyurl.com/8fuvxhw>) highlight the consequences of course material costs.

² The open, LMS-integrated, Collection of Assignments and Learning Assessments (COALA) repository prototype.

Project Work Plan: At the end of 2023, users of the the COALA prototype will be able to upload assessments by the question or as complete assignments, search by keywords or by discipline, and integrate selected assessments into Canvas to be assigned to students. Early 2024 will be spent testing the prototype and determining additional development milestones for the next phase, detailed here.

The work of this grant will take place over two years, with four substantial activities. They include **(1)** further development of COALA, in partnership with SoftServ and RRHCNM, including compatibility with three additional LMSes, more robust search functionality, a more user-friendly upload procedure for new materials, the ability for users to rate content for integrated peer review, permissions development, and best practices for uploading and ingesting AI-generated problem sets. **(2)** Seeding the repository with content from 5-10 additional disciplines to ensure that new users can easily find material that they can use in the classroom. Expanding the breadth of question types available. This will include recruiting experts in ten fields to contribute a variety of questions and assessments. **(3)** Executing the outreach plan developed in the planning phase of the grant, including developing a webinar and training videos to ensure that interested instructors have materials to aid them in use of COALA, as well as a train the trainer workshop for librarians ensuring local experts in the technology. **(4)** Developing a business model for central hosting of COALA by SoftServ that is library and consortia-centered, while simultaneously developing documentation for open-source, free, locally-hosted instances.

COALA development will be completed in phased sprints in order to incorporate Advisory Board feedback on each enhancement. Planned sprints include: additional LMS compatibility; accessibility review; increased disciplines; question format expansion; search enhancements; form based upload; user permissions; and integrated content review. Recruitment of content experts will begin immediately. Led by an instructional designer, content experts will develop materials and best-practices on an iterative basis. Development of the business model will begin in year two and will reflect the importance of a platform that is no-cost to instructors and students, and affordable for consortia to offer to their libraries and member institutions, regardless of their ability to host a platform locally. A centrally hosted platform will allow content to be searched, integrated, and customized nationwide. Development of training materials and videos will also commence in year two, led by the instructional designer.

Diversity Plan: As increasing access to digital pedagogical tools is a central goal of this project, close attention will be given to accessibility and diversity of student and faculty needs and disciplines in the planning and execution of the project. Selection of participants will take into consideration institutional student need, and subject matter consultants will be committed to generating content for testing that is representative of a wide array of assessment types and communities in order to ensure a variety of backgrounds and learning needs are served.

Project Results: The grant team guiding this project has the ambitious intention to have an impact on the cost of course materials for college students nationwide. COALA has the pedagogical advantage of supporting faculty in providing assessments that align with their individual course goals, rather than relying on the static materials that are pre-packaged with existing commercial content. In addition, for institutions and consortia offering OER creation grants, the full development of an LMS-integrated assessment repository offers an opportunity to extend the reach of the work they fund by making developed ancillary materials widely available nationwide. Scalable, extensible, and able to flexibly respond to the changing demands of higher education classrooms, this project will continue the work of leveling the academic playing field by making OER a more viable classroom alternative by easing faculty adoption and integrating open ancillary materials into the learning management systems that faculty already use.

Budget Summary: This project will have a budget of \$248,235 over two years. VIVA will provide support by dedicating staff time to project management. To complete the outlined development of the tool, SoftServ will receive \$156,000. \$12,000 will be budgeted to pay an instructional designer to work with content experts to develop material for the repository and to develop training materials for the tool. RRCHNM will continue working with faculty groups to test the tool through these iterations for \$15,000. Ten faculty experts in a diverse group of subject areas will each be paid \$1,000 to seed the repository with content, and ten faculty members will be paid \$200 each to participate in beta testing of the refined tool. George Mason University will receive 27.3% in indirect costs.