



Repository Systems for Creative and Immersive Scholarship in Open Knowledge

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Abstract. This presentation introduces Trust by Design, a framework actively developed by a practitioner-researcher with guidance from her doctorate dissertation chair who is also the co-presenter of this paper. The framework aims to guide ethical, inclusive decision-making in institutional repository (IR) management. It responds to real-world challenges faced by repository managers navigating the inclusion of immersive, AI-influenced, and non-traditional scholarly outputs. Virtual reality (VR) experiences, digital performances, student-produced media, and interactive exhibits often fall outside traditional metadata schemas, lack persistent identifiers like DOIs, and raise unresolved questions around ownership, access, and preservation. These works are academically significant but remain underrepresented in repositories originally designed for static, text-based formats. Drawing from doctoral research in educational leadership and digital librarianship, this session invites attendees to participate in a live, anonymous survey via QR code at the beginning of the session. Survey results will be interpreted in real time and discussed interactively with the audience to model collaborative stewardship. This presentation situates institutional repositories as open, immersive systems mirroring iLRN2026's theme "From Plato's Cave to Open Immersive Societies" and reframes them not as passive storage platforms but as dynamic infrastructures supporting equitable knowledge creation and preservation.

Keywords: Institutional Repository, Open-Access Infrastructure, TRUST Framework.

1 Introduction and Rationale

Institutional repositories are essential to the open access infrastructure but are facing increasing pressure to adapt to complex digital scholarship formats and AI-enabled systems. As scholarly communication expands beyond text-based outputs, repository systems must increasingly accommodate immersive, multimedia, and interactive forms of research. Common issues include metadata bias, increased exposure to scraping, and uncertain sustainability costs, all of which affect how repositories are managed and valued within academic institutions [1, 2]. Immersive and multimedia scholarly outputs particularly virtual reality projects, interactive exhibits, digital performances, and student-produced media are gaining academic significance but remain underrepresented in repositories. Prior research shows that creative and non-traditional scholarly works are often excluded due to unclear policies, ownership concerns, and misalignment with existing repository workflows [3, 4]. These formats challenge traditional repository practices, raising new questions around inclusion, persistent identifiers, and long-term stewardship.

As repositories evolve, they are no longer just digital shelves; they are becoming open, immersive systems that support new forms of research and learning. This shift closely aligns with iLRN2026's theme, 'From Plato's Cave to Open Immersive Societies', where institutional repositories are reconceptualized as bridges between static knowledge containers and dynamic, participatory environments for exploration, preservation, and scholarly engagement. Kilcer et al. [5] emphasize that repositories are becoming crosslinked, interoperable platforms that support continuous visibility, interaction, and reuse qualities that mirror the open, immersive design principles emphasized in this session. By investigating how immersive and non-traditional works are or are not being included in repositories, this project connects the evolving role of repository managers and digital stewards to broader questions of faculty agency, student contribution, and equitable participation in the scholarly communication ecosystem.

1.1 Conceptual Framework

The *Trust by Design* model developed by researchers integrates three complementary frameworks: the TRUST Principles for digital repositories (Transparency, Responsibility, User Focus, Sustainability, Technology), Improvement Science, and Critical Constructivism to help examine ethical and practical decision-making in institutional repository management. Repository managers regularly make decisions about metadata standards, exposure levels, persistent identifiers, and long-term preservation strategies, often under significant institutional and technical constraints. The model provides one possible structure for reflecting on these decisions by connecting ethical considerations with practical repository design choices.

The TRUST principles offer an ethical reference point by emphasizing transparency, responsibility, user focus, sustainability, and technology in digital infrastructures [6]. Improvement Science contributes an iterative problem-solving perspective that acknowledges the realities of limited resources, evolving technologies, and institutional pressures commonly present in repository environments. It draws on traditions of organizational learning and iterative improvement methods such as Plan–Do–Study–Act cycles [7]. Critical Constructivism adds a reflexive dimension by recognizing that repository managers and librarians actively shape knowledge visibility through the systems they design, curate, and maintain, highlighting how knowledge infrastructures can reinforce or challenge existing power structures in information access and representation [8]. This perspective aligns with emerging scholarship examining how AI systems interact with cultural heritage collections and the ethical responsibilities of information professionals [9].

Taken together, these perspectives can help repository practitioners reflect on how repository design decisions may influence scholarly visibility, participation, and stewardship, particularly as repositories encounter emerging formats such as virtual reality experiences, interactive simulations, digital performances, and other non-traditional scholarly outputs. Rather than prescribing fixed solutions, the framework is intended as a lens for discussion about how repositories might respond to these evolving forms of scholarship and the technical and ethical questions they raise.

TRUST Principles (Transparency, Responsibility, User Focus, Sustainability, Technology). The TRUST principles serve as an ethical baseline for evaluating AI-mediated decisions in repositories and scholarly infrastructures. In this model, ethical principles are translated into practical design checkpoints, including:

- Transparency → Explainability
- User Focus → Human-in-the-loop review
- Sustainability → Long-term accountability and preservation

This conceptual integration aligns with iLRN’s interest in practice-oriented insights that connect technological development with responsible stewardship of immersive and emerging scholarly formats. The three complementary frameworks informing this model are briefly described below.

Improvement Science – Theoretical Framework. Within the *Trust by Design* model, Improvement Science is used to highlight how repository managers engage in iterative, practice-based problem solving while working under real-world constraints such as limited resources, evolving technologies, and institutional priorities. This perspective helps examine how repository decisions develop through continuous adjustment, learning, and practical experimentation within library technology environments.

Critical Constructivism – Paradigm. Critical Constructivism is used in the *Trust by Design* model to highlight the role of repository managers and information professionals in shaping both visible and invisible knowledge systems. This perspective emphasizes that decisions related to metadata design, access policies, and digital infrastructure influence which forms of knowledge become discoverable, preserved, and valued, particularly in environments where AI systems interact with repository metadata and digital collections.

2 Design and Educational Implications

Repositories have the potential to support immersive learning not only by storing VR content, but by shaping how all types of digital knowledge are discovered, experienced, and reused. Decisions about what to include, how to describe it, and how to assign credit affect how users interpret scholarship and how creators choose to share their work. Increasingly, institutional repositories are understood not only as preservation systems but also as

components of broader scholarly communication ecosystems that shape how research outputs are discovered, interpreted, and reused [10]. This framework can guide:

- AI literacy and evaluation skills for scholars and librarians
- Metadata practices that flag bias and embed provenance
- User engagement strategies for creative work inclusion
- Cross-departmental collaboration with XR labs or digital humanities centers

By grounding these practices in *Trust by Design*, libraries can position repositories as sites of inclusive digital pedagogy and innovation.

3 Next Steps/Data Collection

To explore how repository practitioners and immersive learning researchers perceive inclusion of non-traditional works, this session will begin with a short, anonymous live survey. Responses will be displayed and interpreted in real time, creating an opportunity for attendees to compare perspectives and reflect collaboratively. The survey focuses on practices, concerns, and expectations around preserving immersive formats such as VR projects, digital performances, and student-generated media within academic repositories.

iLRN conference participants are uniquely positioned for this dialogue, as many are actively developing or studying immersive, XR-based, and digitally augmented scholarship. Their insights as both creators and stewards of emerging formats are critical for informing a practitioner-grounded model like *Trust by Design*. Data collected will shape ongoing dissertation research and inform future iterations of the framework, with a focus on fostering equitable access, persistent identifier strategies, and ethical decision-making in institutional repository design.

3.1 Institutional Repository Definition Provided to Participants

An open access institutional repository is a digital platform managed by a university, library, or research organization to collect, preserve, and provide free public access to scholarly and creative works. These materials typically include traditional outputs such as these, dissertations, and journal articles, as well as increasingly non-traditional outputs such as digital projects, performances, and other creative works. Institutional repositories support transparency, long-term preservation, and equitable access within the broader ecosystem of scholarly communication.

4 Conclusions and Recommendations

This session opens an interactive space for exploring how institutional repositories can adapt to support immersive and non-traditional forms of scholarship. Through a live survey and real-time discussion, attendees will collaboratively surface current perspectives on inclusion, access, and stewardship of formats such as virtual reality, interactive exhibits, and digital performances. These insights will inform the ongoing development of the *Trust by Design* framework, which emphasizes transparency, adaptability, and ethical infrastructure in scholarly communication.

For iLRN's broad community of immersive learning researchers, technologists, educators, and digital creators, this discussion offers a timely opportunity to reflect on how evolving digital outputs intersect with long-term preservation and academic visibility. Rather than presenting fixed answers, the session invites a conversation about how institutional repositories might foster open ecosystems where nontraditional scholarship is not only accepted but meaningfully preserved and discoverable supporting a future of digital knowledge grounded in human understanding, collaboration, and care. Throughout this interactive conversational presentation the authors hope to spark interest towards how institutional repositories might be improved to include such items. As immersive and AI-influenced scholarship continues to expand, repository infrastructures may increasingly require ethical and adaptive design approaches that support both technological innovation and responsible stewardship. Taken together, these perspectives inform the *Trust by Design model*, which helps repository practitioners reflect on how repository design decisions may influence scholarly visibility, participation, and stewardship.

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