

World Immersive Learning Labs Community Report 2025

From Individual
Innovation to
Collective Impact in
XR Education



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Executive Summary

This book documents a field-level experiment in collaborative knowledge building for XR in education shaped by more than 40 core presenters and hundreds of active participants across linked events and working sessions. Through unconferencing, shared storytelling, and structured group synthesis, educators, researchers, developers, students, and administrators worked together to surface common challenges, examine real implementation constraints, and compare approaches across contexts. Contributions reflect wide geographic variety, including Asia, Europe, North America, and the Global South, with cases drawn from rural schools, urban universities, open universities, community labs, and national-scale deployments. Rather than advancing a single expert position, the work shows how collective analysis shaped understanding of technological, pedagogical, accessibility, and infrastructure issues as they are experienced in practice. The overall findings suggest that sustainable XR integration depends less on hardware or platforms than on institutional coordination, teacher agency, and shared design practices. The book is valuable because it captures how a field is actively being formed through dialogue, experimentation, and negotiated understanding rather than through theory alone.

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Additional faculty, students, developers, technicians, and institutional partners from participating universities, public schools, community labs, NGOs, and industry collaborators across Asia, Europe, and North America also contributed through unconferencing sessions, working groups, and case documentation.



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From Isolated Experiments to Shared Inquiry

Across the last decade, extended reality moved from research labs into classrooms, community spaces, and vocational training centers. What did not arrive with the hardware was a shared understanding of how these tools should be used, supported, evaluated, or sustained. Early adopters worked in isolation, often solving the same problems repeatedly with little visibility into how others were navigating similar constraints. What emerged through collective gatherings was a recognition that the greatest barrier was not technical novelty, but fragmentation of knowledge.

A shift occurred when educators, developers, and researchers chose to replace presentation-driven conferences with collaborative working sessions grounded in narrative inquiry. Participants were not asked to promote projects or defend results. They were asked to describe what actually happened during implementation. What failed. What surprised them. What students resisted. What institutions blocked. What unexpectedly worked.

These accounts revealed a consistent pattern. Technical success did not predict educational success. High-end hardware often stalled without training and support. Simple tools sometimes produced stronger learning outcomes when embedded in coherent pedagogy. XR systems that impressed visitors occasionally collapsed under daily classroom realities. The work began to trace how immersive learning lives inside human systems, not outside them.

Participants ranged from faculty at national universities to K–12 teachers, developers, system administrators, NGO partners, and students. Contributions reflected daily practice rather than ideal scenarios. Small pilots, full district deployments, mobile VR labs, low-bandwidth systems, and open-source AR experiments were placed side by side for comparison. The emphasis was not on scale as a metric of success, but on understanding conditions of viability.

This early synthesis established the foundation for a sustained, community-driven inquiry into what it actually takes to make immersive learning usable, equitable, and durable.

Four Domains of Constraint

As individual cases accumulated, a shared analytical structure emerged through collaborative mapping sessions. The challenges consistently clustered into four interconnected domains.

The technological domain included hardware reliability, device management, platform longevity, motion sickness, interface bias, and network dependency. Participants repeatedly documented how platform ecosystems shifted faster than institutions could adapt. Schools struggled with discontinued software, orphaned devices, and incompatible updates. Device management at scale emerged as a critical but under-recognized barrier. The pedagogical domain surfaced deeper instructional uncertainty. Initial enthusiasm often faded when faculty could not connect immersive experiences to assessment, curriculum sequencing, or long-term learning objectives. The question was not whether XR was engaging, but whether it meaningfully supported sustained learning. Cases showed that immersive media succeeded when it altered instructional design, not when it merely replaced existing content delivery. The accessibility and inclusivity domain exposed structural inequities. Participants documented barriers tied to disability access, sensory differences, hairstyle bias in headset design, gender representation in content, linguistic exclusion, and economic access. In several cases, students themselves led redesign efforts when hardware failed to accommodate them. Accessibility was reframed as a design condition, not an accommodation.

The infrastructure and logistics domain addressed the least visible but most decisive factors. Power supply, charging systems, secure storage, sanitation protocols, technician support, budget cycles, procurement rules, and administrative approval determined whether XR survived beyond pilot phases. Many promising projects stalled not because they failed pedagogically, but because institutions could not absorb their operational demands. These four domains did not act independently. Each failure cascaded into the others. Technical instability eroded faculty confidence. Infrastructure gaps undermined accessibility. Pedagogical uncertainty limited institutional trust. The collective analysis revealed that progress required coordinated movement across all four domains rather than isolated solutions.

Unconferencing as a Research Method

Rather than publishing position papers or issuing best-practice lists, participants used unconferencing as a formal research mechanism. Sessions were structured for co-analysis. Working groups formed dynamically around shared constraints. Discussion protocols guided participants from storytelling to pattern recognition, and from pattern recognition to proposed interventions.

Randomized group assignments ensured cross-disciplinary mixing. Faculty sat beside developers. Students worked alongside administrators. Language educators collaborated with engineers. These interactions disrupted role-based silos that often shape implementation decisions. Participants were required to translate their concerns into language understandable across professional boundaries.

The co-creation process generated working frameworks rather than finished prescriptions. Shared resource templates emerged for device management, faculty onboarding, accessibility audits, and institutional policy language. These artifacts were not fixed standards. They were living documents revised through subsequent cycles of practice.

The methodology also surfaced disagreement as productive data rather than conflict to be suppressed. Debates over AI integration in immersive language learning, content automation, biometric tracking, and surveillance risk exposed diverging institutional values. Instead of resolving these tensions prematurely, they were documented as decision zones requiring local negotiation.

Through this process, authority shifted. Credibility came not from titles or publication records, but from clarity of implementation experience and willingness to expose failure. This reshaped how participants understood expertise within the evolving XR education ecosystem.





What the Collective Evidence Shows

Across more than 40 formal presentations and hundreds of working-session contributions, several consistent findings emerged.

- First, immersive learning becomes sustainable only when institutions design for continuity rather than novelty. Pilots succeed easily. Year-three maintenance determines survival. Programs that built internal support capacity outperformed those that depended on single champions.
- Second, teacher agency consistently predicted learning quality. Systems that treated faculty as co-designers rather than content consumers produced deeper student engagement and more resilient instructional practices. turnkey content libraries rarely displaced the need for local adaptation.
- Third, accessibility cannot be retrofitted effectively. Projects that embedded inclusive design from the start avoided later equity breakdowns. Those that postponed accessibility encountered structural resistance that was difficult to reverse.
- Fourth, infrastructure decisions outweighed software selection in long-term impact. Reliable charging, secure storage, IT staffing, scheduling integration, and procurement alignment mattered more than headset brand or resolution.
- Fifth, XR success correlated more strongly with institutional coordination than with technological sophistication. Programs with modest equipment but strong administrative alignment outperformed high-end installations lacking policy integration.
- These findings reframed XR not as a disruptive tool that bypasses institutions, but as a system that demands deeper institutional coherence than many previous educational technologies.

Geographic Variation and Shared Conditions

Contributions reflected wide geographic diversity including Japan, the Philippines, the United States, Italy, Thailand, Kenya, Cambodia, and the United Kingdom. Contexts ranged from national universities and open learning systems to rural schools and workforce training centers. Infrastructure conditions varied from high-bandwidth urban labs to regions without consistent water access.

Despite these differences, the constraint patterns remained strikingly consistent. Implementation difficulty did not scale linearly with economic resources. Well-funded programs collapsed under coordination failures. Resource-limited initiatives succeeded through adaptive design and community integration. This convergence reinforced the premise that XR viability is governed more by human systems than by technical thresholds.

What remains beyond this preview includes deeper case walkthroughs, unconferencing transcripts, solution frameworks, cross-case synthesis tables, and shared policy templates. The record also tracks how collective debate shaped evolving positions on AI integration, automation in immersive learning, digital twins, metaverse platforms, and agentic systems.

Taken together, the assembled evidence shows that immersive education is not waiting for a future technology breakthrough. Its viability is being negotiated now through collective experimentation under real conditions. The value of this work lies in how it preserves those negotiations as active knowledge rather than polished outcomes. What emerges is not a promise of easy transformation, but a practical account of how institutions, educators, and learners are steadily working through the structural requirements of immersive learning at scale.



ABOUT THE AUTHOR

ERIC HAWKINSON

Eric is a learning futurist, tinkering with and designing technologies that may better inform the future of teaching and learning. Eric's projects have included augmented tourism rallies, AR community art exhibitions, mixed reality escape rooms, and other experiments in immersive technology.



Roles

Professor - Kyoto University of Foreign Studies
Research Coordinator - MAVR Research Group
Founder - Together Learning
Developer - Reality Labo
Community Leader - Team Teachers
Chair - World Learning Labs

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- Privacy by Design - Business models are increasing moving toward supporting revenue by collecting, curating, and trading behavioral surplus through technology. These models should be tempered with safety, ethics, and privacy concerns and designed as such.
- Digital Literacy for All - An informed public about the use of technology is key for a responsible and engaged digital society.

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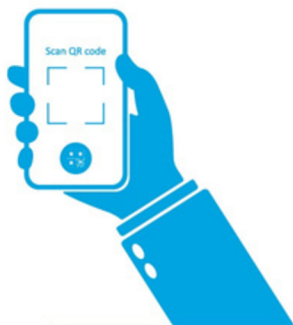
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