# Immersive Learning Research: a proposed design for an open networked global community effort

Jonathon Richter[1]

[1] Immersive Learning Research Network & Salish Kootenai College, USA
jonathon_richter@skc.edu

Now entering its 4th year, The Immersive Learning Research Network (iLRN) continues to grow. The network is an international organization of developers, educators, and research professionals intent on collaborating to develop the scientific, technical, and applied potential of immersive learning, discovering "what works", and sharing it. With an annual worldwide conference featuring peer reviewed research papers from across Computer Science, Game Design, the Learning Sciences, and many other disciplines, iLRN is beginning to realize part of this mission – though it's really only a beginning if we are to be truly measured a success. There are a number of challenges before us – two of the most pressing being, "why should people collaborate and share their knowledge of what works?" and "how might that work in ways that benefit people – particularly those involved in doing the work?".

In this presentation, I'd like to engage you, the iLRN audience in the prospect of how and why you should work with iLRN to realize this vision of serving humanity by identifying what works, mapping it out, and providing people with clear access and understanding of how to contribute to and use immersive learning environments most effectively. iLRN, as an organization, recognizes that we need to better define what, indeed "immersive learning" really is, and we recognize that, because the contributions being made to emerging disciplinary areas come from a wide range of professional, scholarly, and other human dimensions of activity, we need to build meaningful "bridges" and techniques for working across these disciplines on common problems. The scope and impact of immersive learning environments is just beginning to be realized and iLRN is perhaps uniquely positioned as a mechanism for open access and scholarship. Innovation and effort, is of course, of paramount importance.

Our theme for this year's iLRN Conference is "*Grounded in Tradition, Immersed in the Future*". It's in deference to our fantastic location for the conference in Coimbra, Portugal, home of Universidade de Coimbra – a lovely place of learning, generally known as the 10th most venerable academic institution in the world – and our obvious connection to the fast-changing nature of learning because of these new innovative situated ecological learning capabilities.

Scholarship in the Middle Ages grew slowly from a conceptual framework that proposed a set of building blocks upon which the rest of rational thought could be constructed. The fact that it emerged and grew at all is quite remarkable. These scholars must have faced tremendous confusion, resistance, and political and financial obstacles. Yet they did it and they thrived by agreeing on a set of principles and collaborating over time to refine them.

The "Trivium" of logic, grammar, and rhetoric were the three basic building blocks for higher learning – the foundational three of the seven Liberal Arts. The Trivium's power rested on its consideration for how ideas entered, were processed, and exited the human mind. These "inputs, processes, and outputs" taught, essentially, critical thinking. When students had mastered the ability to that – taking information of

any kind and carefully considering it through those lense, that then led to the other four – the "Quadrivium", of arithmetic, geometry, music, and astronomy.

Similarly, iLRN proposes, as a means to bring together the disparate scholarly and professional fields together to work together on this shared problem set of "Immersive Learning" to use three foundational building blocks that scholars must seriously consider and understand for Immersive Learning Environments to "work", that is: (1) Computer Science, (2) Game Design, and (3) the Learning Sciences. These three areas of human scholarship and applied understanding, though not easily understood as input-process-output are all essential to creating, researching, and evaluating Immersive Learning experiences of all kinds. From this tripartite foundation, the applied areas of "what works" in Immersive Learning may be deliberated on. Drawing on sensory, actional, and symbolic factors, Immersive Learning Environments digitally replicate the experience of location. Research has conclusively demonstrated that Immersive Learning can (4) Provide multiple perspectives; (5) Enhance or highlight key features (invisible, abstract, obscure) of ecologically complex systems; (6) Situate the learner; and (7) Enable transfer of difficult-to-understand information (Dede, 2009). These are the areas of evidence for why we should invest in immersive learning – why the expenditure of great time, money, and expertise is worth it. These are the proposed four areas of the Immersive "Quadrivium".

To operationalize this foundational framework, iLRN is launching a dedicated set of tools and services for scholars, developers, and professionals around the world that will support and extend these ideas:

- Build a knowledge base
- Collaborate on complex problems
- Identify the Pattern Language of Immersive Learning
- Showcase applications in applied contexts

Finally, in addition to mapping the landscape of "what we know" and creating a scholarly interchange for immersive learning across the foundational and applied areas where immersive learning is illuminating key understandings and phenomena, iLRN also proposes to

- Monitor and integrate innovation and change across the emerging landscape

Our new Environmental Scanning project will provide focus and timeliness to our work – giving context to the research by showcasing how things are chaning through publication of our Annual State of Immersive Learning Report, beginning this year 2017. Join us and let's scan the horizon, map the territory, and create new worlds.