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## **RIVANY Inc.**

### *Holographic Immersive Learning — An Instructional Systems Design Process Model*

#### **Introduction**

This paper proposes a customized instructional systems design (ISD) process model for RIVANY Inc., an educational technology startup headquartered in Rwanda that delivers professional development courses through holographic immersive technology. By bringing together emerging holographic technology, international institutional partnerships, and cross-cultural professional education, RIVANY occupies an instructional design space that no single existing ISD model fully anticipates. The synchronous holographic classroom experience between universities in North America and learning centers in Rwanda creates a set of design challenges, cultural adaptation, faculty preparation, platform-specific pedagogy, and partnership coordination that demand an ISD approach more deliberate than generic frameworks can offer.

The paper has three objectives. First, it reviews current instructional design practice at RIVANY and identifies the performance gaps in the existing ad hoc approach. Second, it proposes a structured ISD process model that builds on the ADDIE framework (Analysis, Design, Development, Implementation, Evaluation) while introducing four targeted innovations specific to RIVANY's organizational and technological context. Third, it outlines practical implementation guidance, including the staffing, structural, and operational adjustments necessary for RIVANY to adopt the proposed model successfully.

The paper is organized into four sections. Section 1 establishes the organizational context of RIVANY Inc.: its mission, partnership structure, technology platform, and current production methods. Section 2 analyzes the limitations of RIVANY's current approach to instructional design and articulates the specific performance gaps that justify a more systematic model. Section 3 presents the proposed ISD process model in depth, with phase-by-phase descriptions grounded in the relevant instructional design literature and clear implications for organizational

structure. Section 4 discusses the anticipated benefits and implementation challenges, and offers recommendations for successful adoption within RIVANY's specific operating context.

## **Section 1: Organizational Context**

### **RIVANY Inc.: Mission and Strategic Position**

RIVANY Inc. is an educational technology startup headquartered in Rwanda that specializes in delivering professional development courses through holographic immersive technology. The organization functions in two interrelated capacities: as a technology platform provider and as an educational broker, facilitating partnerships between universities in North America and institutions of higher learning in Rwanda. Unlike traditional distance education providers, RIVANY creates synchronous learning experiences in which instructors appear as life-sized holographic projections in physical classroom spaces, allowing for real-time interaction and presence that goes beyond what conventional video conferencing or asynchronous online learning can offer.

The company's mission centers on democratizing access to world-class professional education in emerging markets while leveraging Rwanda's growing technological infrastructure and the country's stated commitment to becoming a regional education and innovation hub in East Africa. RIVANY operates within Rwanda's broader national strategy of positioning the country as a center for technology-driven development, and its work intersects with national priorities in higher education, workforce development, and digital transformation.

### **Current Training Production and Delivery**

RIVANY currently produces and delivers professional development courses in three primary domains. The first is business administration, including strategy, finance, marketing, and operations management. The second is leadership development, encompassing organizational behavior, change management, and executive decision-making. The third is professional ethics, with particular attention to corporate governance, ethical leadership, and cross-cultural business ethics. These courses are non-credit-bearing but lead to certificates of completion issued by the partnering North American institution, which gives them recognized value in regional professional contexts.

Course formats typically span six to twelve weeks, with synchronous holographic sessions occurring two to three times per week in 90-minute blocks. Between synchronous sessions,

learners engage with supplementary materials, complete assignments, and participate in moderated discussion forums through a learning management system. The holographic technology allows instructors in North America to appear life-sized in dedicated classroom facilities at the University of Rwanda and, potentially, in other Rwandan cities. The result is an immersive presence that approaches the experiential richness of physical co-location while maintaining the logistical and economic efficiency of remote delivery.

### **Organizational Structure and Workflow**

RIVANY's instructional development team consists of seven staff members distributed across several functional areas. The team includes two instructional designers responsible for course structure, learning objectives, and assessment design; two content developers who work directly with subject matter experts to translate disciplinary knowledge into learning materials suitable for the holographic platform; two technology specialists who manage the integration of content with the holographic system and troubleshoot platform-specific challenges; and one project manager who coordinates across these functions and maintains communication with university partners.

This structure reflects RIVANY's startup status and corresponding resource constraints. The team operates with a relatively flat hierarchy, and roles often overlap by necessity. The instructional designers report to the Chief Academic Officer, while the technology specialists report to the Chief Technology Officer, creating a matrix structure in which course development projects require continuous coordination across reporting lines. The team also interfaces regularly with business development staff who negotiate partnerships, with operations staff who manage the physical learning centers, and with customer success staff who support enrolled learners.

The relationship with external partners is central to RIVANY's operations. Course development requires close collaboration with faculty members at North American partner universities who serve as subject matter experts and, ultimately, as the instructors appearing holographically in RIVANY's Rwandan classrooms. RIVANY does not employ these instructors directly but rather facilitates contractual arrangements through institutional partnerships. This partnership model creates significant dependencies and coordination challenges that the instructional design process must address explicitly. Faculty members often lack familiarity with both the holographic technology and the Rwandan learner context, and they typically arrive at RIVANY's platform with pedagogical approaches developed in entirely different institutional and cultural environments.

## **Current Approach to Design and Development**

RIVANY's current approach to instructional design is largely ad hoc. It is characterized by informal processes that vary from project to project based on who is leading the development effort and the specific demands of the partnering institution. Rather than following a systematic ISD model, the organization has developed courses reactively, often beginning with content provided by North American faculty members and adapting it for the holographic platform without comprehensive front-end analysis or systematic design planning.

In practice, this means that the analysis phase, typically the foundation of any rigorous ISD process, is often skipped entirely or compressed into informal conversations. Learner needs, cultural context, prior knowledge, and the specific demands of the holographic platform are rarely subject to systematic study before course development begins. Design decisions are made on the fly, often by faculty members and content developers working independently rather than through a coordinated design team. Evaluation is similarly informal: at the end of each course, learner satisfaction surveys are administered, but there is no structured framework for evaluating learning outcomes, behavioral transfer, or institutional impact.

Rothwell and Kazanas (2008) caution that ad hoc instructional development characterized by reactive content adaptation without front-end analysis consistently produces performance gaps that are costly to remediate after deployment (p. 24). RIVANY's experience to date bears this out. Courses have been delivered with mixed reception. Some have generated strong learner engagement and positive partner feedback; others have suffered from cultural misalignment, pedagogical mismatch with the holographic medium, or insufficient faculty preparation for the Rwandan learner context. The variability is a direct consequence of the ad hoc design approach.

## **Section 2: Performance Gap Analysis**

The gaps between RIVANY's current instructional development process and a desired state of systematic, high-quality design can be summarized across five dimensions.

### **Design Systematization**

The current state involves ad hoc, inconsistent processes that vary by project, by personnel, and by partner institution. The desired state involves a systematic ISD process with defined phases, deliverables, and quality checkpoints applied consistently across all courses. Without

this systematization, RIVANY cannot ensure that quality outcomes are reliably reproducible across a growing portfolio of courses and partnerships.

### **Quality Consistency**

Course quality currently varies significantly depending on the specific faculty member, content developer, and design team composition involved. The desired state is consistent achievement of minimum quality standards across all courses, regardless of who is on the development team. This is essential to RIVANY's brand reputation and to the educational value experienced by learners.

### **Cultural Adaptation**

There is currently insufficient adaptation of North American content and pedagogy for the Rwandan learner context. The desired state is a systematic cultural analysis and adaptation process that results in courses that feel relevant, accessible, and respectful to Rwandan professionals. Edmundson (2007) argues that failing to systematically analyze and accommodate cultural variables in the design phase results in instructional materials that, while technically sound, create barriers to learning for non-Western audiences (p. 37). RIVANY's experience confirms this risk: courses that are simply ported from North American syllabi to the holographic platform, without cultural adaptation, consistently underperform.

### **Faculty Preparation**

The current state provides minimal instructor development, and what little there is focuses almost exclusively on technical orientation to the holographic platform. The desired state involves comprehensive faculty development that addresses pedagogy for the immersive holographic medium, cross-cultural competence for the Rwandan learner context, and holographic teaching strategies specifically. Caffarella and Daffron (2013) emphasize that effective cross-institutional program design requires deliberate attention to the development of instructors as culturally responsive practitioners, not merely as content deliverers (p. 148). RIVANY's reliance on faculty members whose home institutional context differs significantly from the Rwandan learner setting makes faculty preparation an especially critical gap to address.

### **Partnership Coordination**

Coordination with North American university partners is currently managed transactionally through individual project communications, ad hoc meetings, and informal alignment conversations. The desired state involves a structured partnership coordination process

embedded throughout the instructional design cycle, ensuring continuous alignment with partner expectations, capacities, and institutional requirements. The current ad hoc approach generates friction at multiple points: when partner faculty discover the holographic medium late in the design process, when curriculum decisions made by partner institutions conflict with the cultural adaptation needs identified by RIVANY designers, and when changes in partner staffing or priorities disrupt courses already in development.

Together, these five gaps justify the need for a customized ISD process model. They also clarify the specific dimensions along which any proposed model must perform: it must systematize design, ensure quality consistency, embed cultural adaptation as a structural design requirement, integrate faculty development throughout the design and delivery cycle, and treat partnership coordination as a core design function rather than as an external administrative task.

### **Section 3: The Proposed ISD Process Model**

#### **Theoretical Foundation**

The proposed model is built on the ADDIE framework, which Branch and Dousay (2015) describe as the most widely adopted meta-model for instructional design precisely because of its flexibility across diverse delivery contexts (p. 6). ADDIE provides a familiar architecture — Analysis, Design, Development, Implementation, Evaluation that is recognizable to instructional designers across institutional and national contexts. This recognizability is important for RIVANY, whose partnership-based delivery model requires that faculty members and partner administrators from different institutional traditions be able to engage with the design process easily.

However, generic ADDIE is not sufficient for RIVANY's specific context. The proposed model retains the five-phase ADDIE structure but introduces four innovations that address the gaps identified in Section 2: (1) an expanded analysis phase that incorporates systematic cultural analysis and partnership alignment activities; (2) a structured faculty development process integrated throughout the design and implementation phases; (3) holographic platform adaptation checkpoints distributed across the design and development phases; and (4) a partnership coordination layer that operates continuously alongside the five ADDIE phases.

The model also draws on additional bodies of instructional design scholarship to inform specific phases. Hofstede, Hofstede, and Minkov's (2010) cultural dimensions framework grounds the

cultural analysis component; the authors specifically identify power distance, collectivism, and uncertainty avoidance as variables of particular consequence for educational design in sub-Saharan African contexts (p. 57). Hall's (1976) high-context/low-context cultural distinction further informs how communication patterns should be analyzed and adapted across the North America–Rwanda partnership context. Clark and Mayer (2016) inform the design and development phases, although their multimedia learning principles developed for screen-based digital environments require meaningful interpretive work when applied to three-dimensional holographic presence (p. 95). Biggs and Tang's (2011) constructive alignment framework anchors the relationship between learning objectives, instructional activities, and assessment within each course. Kirkpatrick and Kirkpatrick's (2016) four-level evaluation model anchors the evaluation phase but is extended in this proposal to accommodate the partnership-based and equity-oriented dimensions of RIVANY's work.

### **Phase 1: Enhanced Analysis**

The analysis phase of the proposed model is significantly expanded from generic ADDIE. It comprises five distinct analytical activities, all of which must be completed before the design phase begins. First, a learner analysis examines the demographic profile, professional background, prior educational experience, and specific learning needs of the target learner population. Second, a contextual analysis examines the professional and economic context in which learners will apply the course content, including the regulatory, organizational, and labor-market conditions in Rwanda. Third, a cultural analysis applies the Hofstede et al. (2010) dimensions framework to identify how Rwandan cultural variables should inform pedagogical decisions, including patterns of interaction, hierarchy in classroom communication, and orientations toward individual versus collective learning. Fourth, a partnership alignment analysis specifies the institutional, regulatory, and pedagogical expectations of the North American partner institution and identifies any tensions that must be resolved before design begins. Fifth, a platform analysis evaluates the specific affordances and constraints of the holographic delivery system for the proposed course content, including which content types and pedagogical activities the platform supports well, and which it does not.

The expanded analysis phase directly addresses the cultural adaptation gap identified in Section 2 and lays the foundation for the platform-specific design decisions that follow. It also generates structured documentation using an Analysis Report that becomes the reference document for all subsequent design and development work. This report is shared formally with the partner institution and with partner faculty before the design phase begins, ensuring that all

parties have a common understanding of the learner, the context, and the design parameters that will shape the course.

## **Phase 2: Design**

The design phase translates the findings of the analysis phase into a complete instructional blueprint. Learning objectives are developed using Mager's (1997) framework for specifying observable, measurable performance outcomes (p. 36). Assessment strategies are designed before instructional activities, in alignment with Wiggins and McTighe's (2005) backward design principles, which ensure that what is taught is genuinely connected to what learners will be expected to demonstrate (p. 18). The instructional sequence is developed in accordance with Gagné, Wager, Golas, and Keller's (2005) nine events of instruction, adapted to account for the unique features of the holographic medium particularly the heightened sense of instructor presence, which changes how attention is gained and maintained across long synchronous sessions.

A critical design phase activity is the development of the holographic-specific pedagogy plan. This plan specifies how the unique affordances of the holographic platform, three-dimensional presence, life-sized projection, shared spatial reference will be used to support learning. It also identifies the constraints of the platform's limited capacity for spontaneous small-group breakout activity, no shared physical materials, asymmetry between the instructor's and learners' experiences of co-presence and plans pedagogical strategies that work around these constraints. The proposed model embeds this holographic pedagogy planning as a structural design phase activity rather than as a technical afterthought.

The first holographic platform adaptation checkpoint occurs at the close of the design phase. This checkpoint requires the design team to walk through the complete instructional blueprint with the technology specialists, confirming that every planned activity is technically feasible on the holographic platform and identifying any necessary modifications before development begins. This checkpoint directly addresses the historical problem of design decisions that look strong on paper but fail when integrated with the holographic delivery system.

The design phase concludes with the production of a Design Document that specifies learning objectives, assessment strategies, instructional sequence, holographic pedagogy plan, faculty development plan, and partnership coordination plan. The Design Document is reviewed and approved by both RIVANY's Chief Academic Officer and the partner institution before development begins.

### **Phase 3: Development**

The development phase produces the actual instructional materials: lecture content, learner workbooks, assignments, assessments, discussion prompts, multimedia assets, and platform-specific resources for the holographic delivery. Development proceeds in parallel tracks. Subject-matter content is developed by partner faculty in collaboration with RIVANY content developers. Cultural adaptation work is performed by RIVANY instructional designers, drawing on the Analysis Report and the cultural variables identified during the analysis phase. Platform integration is performed by technology specialists, ensuring that all materials are formatted appropriately for the holographic environment.

A central feature of the development phase is the integrated faculty development process. Faculty preparation does not happen as a one-time pre-launch event; it is distributed across the development phase as a structured activity. Faculty members participate in three faculty development modules during this phase. The first introduces the holographic platform and the specific affordances and constraints they will be working with. The second is a cultural orientation, drawing on the Analysis Report findings, that prepares faculty for the Rwandan learner context. The third is a holographic teaching strategies workshop, in which faculty practice specific pedagogical techniques on the platform pacing, use of three-dimensional space, eye contact across the holographic interface, integration of discussion and small-group activity — under the guidance of an experienced holographic instructor.

The second holographic platform adaptation checkpoint occurs at the close of the development phase. At this checkpoint, the complete course is run through a full technical rehearsal on the holographic platform, with a sample audience and full faculty participation. Issues identified are addressed before the course launches.

### **Phase 4: Implementation**

The implementation phase is the live delivery of the course. While much of the substantive design and development work has been completed by this point, implementation in the RIVANY context is not passive. Three implementation activities are structurally embedded in the proposed model.

The first is ongoing faculty support. Each course is assigned an instructional designer who serves as a real-time pedagogical partner to the faculty member during the live course, providing feedback after each session, identifying emerging issues, and suggesting in-flight

pedagogical adjustments. This addresses the historical problem of faculty being left to manage the holographic delivery alone after an initial orientation.

The second is partnership coordination. A standing weekly meeting between RIVANY's project manager and the partner institution's program coordinator maintains alignment throughout the course delivery, addresses emerging issues, and captures lessons that should inform future iterations.

The third is in-course formative evaluation. Rather than relying solely on end-of-course evaluation, the proposed model embeds structured mid-course feedback sessions — at weeks three and six in a twelve-week course that gather learner input and inform in-flight adjustments to both content and pedagogy.

### **Phase 5: Evaluation**

The evaluation phase is grounded in Kirkpatrick and Kirkpatrick's (2016) four-level framework: reaction (Did learners find the course satisfactory and relevant?), learning (Did learners acquire the intended knowledge and skills?), behavior (Did learners apply the learning in their professional context?), and results (Did the learning produce measurable organizational or community impact?). The proposed model retains this four-level structure but adds a fifth criterion specific to RIVANY's mission: equity outcomes. The equity criterion asks whether the course expanded access to professional education for learners who would not previously have been able to access it, and whether it did so in culturally resonant ways that produced long-term professional impact.

Evaluation is also extended structurally. Rather than treating evaluation as a terminal phase, the proposed model embeds evaluation activity throughout the cycle: in the analysis phase (baseline measurement), in the design phase (validation of design decisions against learner needs), in the implementation phase (formative feedback), and after course completion (full Kirkpatrick four-level evaluation plus equity assessment). This continuous evaluation model is aligned with the systematic ISD approaches articulated by Dick, Carey, and Carey (2015) and by Morrison, Ross, Kalman, and Kemp (2013), both of whom argue that evaluation must operate as a continuous design discipline rather than as a terminal review.

### **The Partnership Coordination Layer**

In addition to the five ADDIE phases, the proposed model includes a partnership coordination layer that operates continuously across the entire process. This layer is staffed by RIVANY's

project manager and includes structured touchpoints with the partner institution at predetermined intervals during each phase. The partnership coordination layer ensures that institutional, regulatory, and pedagogical expectations are continuously aligned and that emerging issues are addressed before they become structural problems.

### **Implications for Organizational Structure and Staffing**

The proposed model has implications for RIVANY's current organizational structure. Three are particularly important. First, the matrix structure between the academic and technology functions should be formalized through a designated cross-functional course development team for each course, led by an instructional designer with the authority to coordinate across reporting lines. Second, the role of the project manager should be elevated, given the centrality of partnership coordination in the proposed model; this may require either additional project management staff or a redefinition of the current project manager role. Third, a faculty development specialist role should be added — either as a dedicated hire or as an expanded responsibility for one of the current instructional designers — to ensure that the integrated faculty development process is consistently executed across courses.

## **Section 4: Discussion and Recommendations**

### **Anticipated Benefits**

The proposed model is designed to address each of the five performance gaps identified in Section 2. By systematizing the design process through a defined phase structure with clear deliverables and checkpoints, the model addresses the design systematization gap. By embedding cultural analysis as a structural design requirement and by integrating faculty development into the design and development phases, the model addresses the cultural adaptation and faculty preparation gaps. By embedding partnership coordination as a continuous layer across all phases, the model addresses the partnership coordination gap. And by introducing quality checkpoints at multiple stages, the model addresses the quality consistency gap.

Beyond addressing these gaps, the proposed model is expected to produce several additional benefits. First, it should improve the scalability of RIVANY's course development capacity. A systematic process can be staffed, taught, and replicated; an ad hoc process cannot. Second, it should reduce the variability of course quality, which is critical to RIVANY's reputation as it grows. Third, it should improve faculty satisfaction, by reducing the friction faculty currently

experience when joining a course development process without adequate preparation. Fourth, it should improve learner outcomes, by ensuring that every course launches with cultural adaptation, holographic pedagogy planning, and faculty preparation already in place.

### **Implementation Challenges**

Adoption of the proposed model will encounter several challenges. The first is resource constraint. RIVANY is a startup with limited staff capacity, and the proposed model requires additional structural roles and process steps that the current team may not be able to absorb without additional hiring. The second is cultural change within the organization. The current ad hoc approach has its defenders, who value the flexibility it provides and who may resist what they may perceive as the bureaucratization of a more systematic process. The third is partner engagement. Some partner institutions may not be accustomed to the level of structured engagement the proposed model requires, particularly the embedded partnership coordination layer and the formal design document review process. The fourth is faculty time. The integrated faculty development process places additional time demands on partner faculty, who are typically engaged with RIVANY on top of their full institutional responsibilities.

### **Recommendations for Adoption**

To address these challenges, four recommendations are offered. First, RIVANY should adopt the proposed model in phases rather than all at once. The analysis phase enhancements and the partnership coordination layer can be adopted first, with the faculty development process and evaluation extensions phased in over the following two course cycles. This phased adoption allows the organization to absorb the operational changes incrementally. Second, RIVANY should invest in change management including internal training, documentation, and explicit leadership endorsement of the new process to address the cultural change challenge. Third, partnership coordination should be made an explicit element of new partnership negotiations, so that incoming partner institutions understand the level of structured engagement RIVANY's model requires. Fourth, the faculty development process should be designed to be efficient: modular, asynchronous where possible, and respectful of the limited time partner faculty have available.

### **Conclusion**

The proposed ISD process model addresses a specific organizational challenge: the need to design, develop, and deliver holographic immersive learning experiences that are pedagogically rigorous, culturally resonant, and operationally sustainable across institutional and national

contexts. By customizing ADDIE for RIVANY's specific operating environment — with an expanded analysis phase, integrated faculty development, holographic platform adaptation checkpoints, and a continuous partnership coordination layer the model offers a practical path from the current ad hoc approach to a systematic process capable of supporting RIVANY's growth and mission.

What the model also does, less visibly, is encode a set of design values: that cultural adaptation is a design requirement rather than an enhancement, that faculty are partners in instructional design rather than recipients of it, that partnership is structural rather than transactional, and that equity outcomes are part of how educational quality is measured. These values are not unique to RIVANY, but they are essential to the kind of cross-cultural, cross-institutional, technology-mediated educational work that RIVANY exists to do. The proposed ISD process model is, in this sense, both a practical operational tool and an expression of how design itself can become a form of leadership in an emerging field of educational practice.

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