

Curriculum Vitae

Andrew Egbert

Nampa, Idaho

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Instructional Designer | AI/LLM Developer | Storyline Developer | E-Learning Developer

PROFILE:

Professional instructional designer and AI/LLM developer with an MS in Education and a Graduate Certificate in Instructional Design, currently pursuing a PhD in Instructional Design and Technology at Idaho State University. Creator of the Scaffolded LLM Tutoring Design Framework (SLTDF), a research-validated model for AI-based tutoring systems, developed through Design and Development Research (Richey & Klein) and validated by formative expert review (n=8). Designs and ships production LLM systems, including tutors, instructional consultants, and faculty-facing tools, grounded in learning science rather than prompt engineering alone. Independently built a WCAG 2.1 AA / PDF/UA-1 accessibility SaaS used by faculty to remediate PDFs without technical expertise. Fluent across the full instructional design lifecycle (ADDIE).

EDUCATION:

Institution	Degree	Dates
Idaho State University	PhD Instructional Design & Technology (In Progress)	2024–Present
University of Wisconsin-Stout	MS Education (4.0 GPA)	8/2021
University of Wisconsin-Stout	Graduate Certificate in Instructional Design	1/2018
Excelsior College	Bachelor of Science in History	9/2011

Doctoral Advisor: Dr. John H. Curry III

Technical Certifications

Type	Issuing Organization	Dates
Unity Certified Junior Programmer	Unity Technologies	8/2024
Unity Essentials	Unity Technologies	10/2023
VoiceThread Certified Educator	VoiceThread Corp.	2/2022
Human Subjects Research Certification	UW Stout IRB Board	11/2019
Certificate in Technical Writing	Dalhousie University, NS	6/2016

PROFESSIONAL EXPERIENCE:

College of Western Idaho

Nampa, ID

Instructional Designer

July 2020 – Present

- Design and build full courses and modular course content for community college instruction, partnering with subject-matter experts (SMEs) to translate disciplinary expertise into structured learning experiences. Apply institutional course design standards and ensure all content is aligned to course learning objectives and grounded in established learning theory throughout the design process.
- Built the CWI Math Tutor GPT (currently v4.4), an AI-based mathematics tutor commissioned by the CWI Math Solutions Center; underpinned by the Scaffolded LLM Tutoring Design Framework (SLTDF) and validated through formative expert review (n=8).
- Designed and shipped CTL Canvas Scholar, the institution's first dual-mode instructional assistant serving 600+ faculty as both Canvas LMS technician and instructional design consultant.

- Independently developed Applied Arts PDF Remediator, a WCAG 2.1 AA / PDF/UA-1 accessibility SaaS used by faculty to remediate PDFs without technical expertise.
- Drove course accessibility remediation across the Industry, Engineering, and Trades (IET) programs, bringing overall accessibility scores above 90%.
- Designed the Student Calculator Badge in Storyline 360, an interactive module teaching foundational calculator skills for STEM coursework with Mager/Bloom objective alignment and badge-based completion tracking; contributed to a 10% increase in overall math placement scores.
- Co-host Afternoons with AI, a recurring faculty development series where participants explore AI tools hands-on, apply them to their own teaching contexts, and share the resulting work with peers.
- Co-presented on AI-powered accessibility tools at Innovate Idaho 2026, the statewide higher education technology conference.

Forms & Printing Service, Inc.

Houston, TX

Graphic Designer / Prepress Technician

2008 – 2020 (12 years)

- Served as prepress liaison with customers, gathering job specifications, designing print products to spec, and translating client requirements into production-ready files.
- Designed and modified a high volume of artwork using Adobe Creative Suite and Quark XPress for offset and digital print production.
- Applied deep prepress expertise across layout, trim, bleeds, safety areas, trapping, bug placement for web presses, and RIP processing for offset and digital output.
- Developed high-security document features including void pantographs, microtype, complex patterning, and thermographic ink.
- Operated and troubleshoot RIPs (Presstek Momentum, Fiery EX-2000), platemakers (Presstek, Kodak), and industrial-scale digital printing equipment; performed platemaking for offset presses.
- Earned Graduate Certificate in Instructional Design (2018) during this tenure, building the foundation for a pivot into educational technology.

Oceaneering, Inc.

Houston, TX

Contract Technical Writer, Manuals (3-month contract)

March 2008 – May 2008

- Created technical manuals and standard operating procedures (SOPs) for ROVs, blowout preventers, and a wide variety of subsea equipment at Oceaneering's Houston High Bay manufacturing facility, partnering with engineering SMEs and following company design guidelines.
- Produced supporting graphics and animations illustrating equipment operation; delivered final documentation across paper, CD, and thumb-drive distribution formats.

RESEARCH AND SCHOLARSHIP:

Scaffolded LLM Tutoring Design Framework (SLTDF)

Developed a novel instructional design framework for AI-based tutoring systems through a Type 1 Design and Development Research study (Richey & Klein). The SLTDF features 3 tiers, 10 operationalized learning science constructs (including Cognitive Load Theory, Vygotsky's ZPD, and Bloom's Mastery Learning), and 7 evidence-informed tutoring behaviors. Validated through formative expert review (n=8). Extracted 5 generalizable design principles for LLM tutor designers. IRB exempt determination from Idaho State University.

Conference Presentations

- Innovate Idaho 2026 (May 2026). Co-presented on AI-powered accessibility tools (Applied Arts PDF Remediator) at the statewide higher education technology conference.

Higher Education Projects

- Weimar University (October 2019). Co-developer of the professional graduate curriculum for clinical psychology.

TECHNICAL SKILLS:

- **AI/LLM Engineering:** Designing and implementing LLM-based systems (ChatGPT, Claude) for educational content generation, interactive learning activities, AI-based tutoring, automated feedback systems, desktop applications, and web application development. Creator of the Scaffolded LLM Tutoring Design Framework (SLTDF).
- **E-Learning Development:** Storyline, Captivate, Camtasia, Rise, H5P.
- **E-Learning Standards:** SCORM 1.2, SCORM 2004.
- **Learning Management Systems:** Blackboard Learn, Blackboard Ultra, Canvas.
- **Accessibility:** WCAG 2.1 AA compliance, PDF/UA-1, PDF remediation, Tesseract OCR, Poppler, veraPDF validation.
- **Research Methodology:** Design and Development Research (DDR), Richey & Klein Type 1, formative expert review, criterion-based purposive sampling.
- **Design:** Illustrator, InDesign, Photoshop, Quark XPress, CorelDRAW, Acrobat, Nitro Pro.
- **Video Editing:** Premiere Pro, Camtasia, HandBrake.
- **Frontier AI Models:** Claude Max (desktop application), ChatGPT Plus, Perplexity Pro (with Comet).
- **Survey Design:** Qualtrics.
- **Project Management:** MindManager, Microsoft Project, FreeMind, GanttProject.
- **Office and Citation:** Microsoft 365, OpenOffice, LibreOffice, WordPerfect, EndNote, APA 6 & 7.
- **Documentation:** Job aids, project charters, SOPs, user guides and manuals, step-by-step instruction guides, gap analysis, needs assessments, performance analysis, project management plans, design documents, storyboards, facilitator guides, blog posts, formally cited research, and electronic forms.

FEATURED PROJECTS:

LLM Applications (Education and Instructional Design)

- **CWI Math Tutor GPT (Educational).** AI-based mathematics tutor for community college students preparing for placement assessments at CWI. Built on ChatGPT with a custom system prompt (SUMMA). Commissioned by the CWI Math Solutions Center. Underpinned by the SLTDF. Formal expert review (n=8). Currently v4.4.
- **CTL Canvas Scholar (LMS Guide).** CWI's first dual-mode instructional assistant serving 600+ faculty. Functions as both Canvas LMS technician and instructional design consultant, ensuring alignment with institutional standards while providing seamless technology and pedagogy support.
- **Dr. Ausubel GPT (Instructional Design).** Master Educator GPT in Consultant Mode that helps users design effective learning experiences. Guides instructional planning step-by-step using evidence-based frameworks (Ausubel advance organizers, Gagné's Nine Events, Merrill's First Principles, Hattie's Visible Learning, Mager objectives, Dick & Carey, Kirkpatrick).
- **Discover LaTeX with Tex (Educational).** Specialized guide for LaTeX with a focus on math markup for academic papers and LMS materials (e.g., Blackboard). Converts plain-English descriptions into copy-paste-ready LaTeX and supports learners from beginner through advanced through a structured training component.

- **Clara the Citation Assistant (Educational).** AI tool designed to assist faculty and students with the creation and verification of citations in APA, MLA, and Chicago styles. Provides detailed, style-specific support; allows users to upload Word documents for analysis.
- **Amateur Radio FCC Exam Tutor, Technician Class (Educational).** Didactic GPT that prepares learners for the FCC Technician Class licensing exam through personalized tutoring adapted to the learner's level. Uses spaced repetition, active recall, and targeted explanations to build conceptual understanding beyond rote memorization.

LLM Applications (Additional GPT Projects)

- **Daedalus (AI Utility).** AI innovation and workflow design specialist for educational, cognitive, and operational systems. Engineers prompt architectures, reasoning frameworks, and human-in-the-loop workflows.
- **Unity Engineer (Development).** Technical and architectural assistant for game developers and creators of VR/AR applications, blending advanced Unity techniques with design principles from leading game designers.
- **Learning Navigator (Instructional Design).** Experimental GPT that maps connections between learning theories and their associated activities using the following symbolic logic notation:

$$((A \wedge B) \vee (A \wedge C) \vee (B \wedge C) \vee (A \wedge B \wedge C)) \wedge \neg (A \oplus B \oplus C).$$
- **Symbollex (AI Utility).** Translates conventional language into symbollect, a symbolic language using emojis, quantum notation, symbolic logic, and mathematical symbols to encapsulate complex ideas.
- **Andrew's COMPRSSR (AI Utility).** Compresses instructions and conceptual content into compact symbolic form using logic notation, emojis, and scientific shorthand.
- **Muse, Summoner of Philosophers (Educational).** Orchestrates town-hall dialogues among history's great philosophers across branches of philosophy.
- **Mr. Stratagem (Business).** AI consultant for strategic business decision-making, leveraging the SRLM (Scale, Revise, Launch, Modify) model.

Web Applications

- **Applied Arts PDF Remediator.** Solo-built web SaaS helping faculty remediate PDFs for WCAG 2.1 AA / PDF/UA-1 accessibility without technical expertise. Python/Flask backend on Fly.io, SQLite, magic-link auth via Resend, bring-your-own Claude API key. Custom remediation engine uses a content-stream interpreter and geometric MCID matching to produce real structural tags (headings, tables, lists, links, form fields, language spans), validated with veraPDF.
- **VIRCEO.** AI-enhanced medical documentation platform that converts 300-page medical-device operator manuals into structured, instantly searchable, voice-enabled web editions that preserve the printed manual's page references and safety language. Features four-tier role-based access, text-anchored annotations, and a draft-review-publish workflow with an append-only audit trail; annotations and edits never mutate the source document. Conceived, designed, and shipped by directing end-to-end AI-assisted development; owned product vision, UX, information architecture, design system, and brand. Stack: vanilla JavaScript, Python with PyMuPDF extraction pipeline, client-side ranked search, Web Speech API. Deployed and live.
- **Applied Arts Portfolio Website.** Interactive portfolio website (appliedarts.us.com) showcasing professional projects through tile-based navigation. Features links to interactive web applications, e-learning projects, and AI tools. Designed, developed, and hosted independently.
- **Andrew's Dissertation Tracker.** Client-side progress management tool guiding PhD students through every dissertation stage. Per-stage task management, subtask due dates with overdue alerts, contextual tips, a wellness monitor, and printable progress reports with branded formatting.

- **Andrew's Literature Mapper.** Interactive visual canvas for researchers to map, organize, and discover relationships across scholarly sources. Drag-and-drop nodes, DOI metadata fetching, keyword auto-connections, multiple layout views, JSON save/load, PNG export, and CSV import.
- **Andrew's Knowledge Graph Generator.** D3.js-powered visualization tool that transforms simple markdown notation into interactive, force-directed knowledge graphs. Supports hierarchical topics, descriptions, cross-references, clickable URLs, and color-coded domains.
- **Statistics Navigator.** Single-file React application with three integrated modules: a guided Navigator that walks users to the right statistical test through branching questions, a searchable Encyclopedia of 167 cross-linked terms across 12 categories, and an interactive Tables & Calculators tab with live computation.
- **Trigonometry Explorer.** Interactive trigonometry learning tool featuring a real-time unit circle mapping sine, cosine, and tangent values to animated waveforms. Includes special angle presets, degree/radian display, triangle visualization, and Fourier waveform synthesis.
- **Sorting Algorithm Encyclopedia.** Interactive encyclopedia and visualizer featuring 80 sorting algorithms across 10 categories. Each algorithm includes animated bar visualizations, pseudocode, complexity analysis, and fun facts. Built with React.
- **VØLT Synthesizer.** Self-contained browser-based synthesizer built on the Web Audio API. 8-voice polyphonic engine with dual oscillators, analog drift modeling, complete subtractive signal chain, ADSR envelopes, routable LFO, 16/32-step sequencer, sample library, and preset management in a single HTML file.
- **3D Fractal Explorer.** Real-time 3D fractal renderer powered by WebGL ray marching shaders. Explore six fractal types with interactive camera controls, adjustable power parameters, dynamic color palettes, and smooth lighting.

E-Learning (SCORM)

- **Student Calculator Badge.** Storyline 360 educational module teaching foundational calculator skills for STEM coursework. Designed with Mager/Bloom objective alignment and badge-based completion tracking for student credentialing. SCORM-conformant with LMS grading.
- **Student Blackboard Basics.** Introduces new students to the functionality of the Blackboard LMS with many interactive elements. Students pass a quiz to earn a personalized, printable badge. Draws data from the Blackboard LMS using JavaScript coding within Storyline.
- **Fit-to-Print.** Complete e-learning course created to train publishing industry professionals in the basics of prepress knowledge, allowing them to understand basic software-based graphic design principles. Online SCORM project developed with Storyline.
- **Brain Explorer.** Fun interactive activity allowing the learner to explore the various anatomical functions of the human brain. Online SCORM project developed with Storyline.

Chrome Extensions and Desktop Apps

- **Checkbox Controller (Chrome / Edge).** Lightweight extension that selects or deselects all checkboxes on any webpage with a single click. Built to streamline repetitive LMS administration tasks, particularly bulk operations in Canvas. Published on the Chrome Web Store.
- **Canvas Course Files Auditor (Windows).** Browser automation application that performs comprehensive file audits across Canvas LMS courses. Retrieves all course files via API, cross-references deployment across modules, pages, assignments, and quizzes, then generates a structured audit report identifying unused, duplicate, and orphaned files.
- **Cascade Columns (Windows).** Commercial macOS-Finder-style file manager built in WPF/.NET, featuring Miller-column navigation, native shell integration, and built-in previews for documents, PDFs, and interactive 3D models. Sold on the Microsoft Store.

PROFESSIONAL SERVICE:

Institution	Organization	Dates
University of Wisconsin-Stout	MS Education Advisory Board	7/2021 – Present
AI Statewide Resources Alliance	Idaho Colleges and Universities	8/2022 – 8/2023

COURSEWORK APPENDIX:

Idaho State University, PhD in Instructional Design and Technology (4.0 GPA)

- EDLP 8800: Doctoral Seminar
- EDLT 7740: Instructional Systems Design I
- EDLP 7706: Change Strategies
- EDLT 7726: Learning Theories and the Design of Instruction
- EDLT 7742: Graphics in Instruction
- EDLT 7743: Audio and Video in Instruction
- EDLT 7745: Instructional Design for Distance Learning
- EDLT 7735: Evaluation of Educational Products and Programs
- EDLP 7706: Advanced Research Design II (Quantitative)
- EDLT 7733: Developmental Research

University of Wisconsin-Stout, MS in Education (4.0 GPA)

- EDUC 729: Introduction to Educational Research
- EDPSY 730: Advanced Psychology of Learning for Instruction
- EDUC 750: Curriculum Theory and Practice
- EDUC 760: E-Learning for Educators
- EDUC 765: Trends & Issues in Instructional Design
- EDUC 766: Instructional Strategies and Assessment Methods
- EDUC 767: Designing Computer-Based Training (CBT)