

A Place to Walk Through

*Spatial Narrative Platforms for Sustained Career Reflection at
Cohort Scale*

Seth Looper, with the DALI Lab

Lo/Be Lab

Lo/Be Lab Working Reports, 2025-03

October 2025 · 22 references

ABOUT THIS WORKING PAPER

Author-produced. Develops the design rationale for DartWorld, a research prototype at Lo/Be Lab. Comments, citation requests, and counter-evidence welcome at seth.looper@gmail.com.

Lo/Be Studio LLC · Hanover, NH · CC BY-NC 4.0

ORCID: 0009-0002-8683-1632 (<https://orcid.org/0009-0002-8683-1632>)

ARTICLE TYPE

Working paper, design rationale

PROTOTYPE

DartWorld, a spatial narrative platform

RECEIVED

July 2025

RESEARCH PROGRAM

Lo/Be Lab · Research Questions 1 + 2

BUILD PARTNER

DALI Lab, Dartmouth College

REVISED

October 2025

WORKING REPORT ID2025-03

A Place to Walk Through

Spatial Narrative Platforms for Sustained Career Reflection at Cohort Scale

Seth Looper, with the DALI LabLo/Be Lab · seth.looper@gmail.com · [ORCID 0009-0002-8683-1632](https://orcid.org/0009-0002-8683-1632)**ABSTRACT**

Career counseling at most universities operates on a high-touch, low-frequency model: one student, one advisor, one thirty-minute session. As a delivery model it is humane. As a developmental support, it is structurally mismatched to the work it is asked to do, because career formation in undergraduates is a longitudinal identity process (Baxter Magolda, 2001; Marcia, 1966) rather than a one-time decision amenable to advice. This paper describes DartWorld, a spatial narrative platform built at Dartmouth College in collaboration with the DALI Lab to test whether a sustained, environment-shaped reflection practice can scale to a full undergraduate cohort. The platform integrates three components: a reflective onboarding instrument that sorts students into one of three identity archetypes (Explorer, Seeker, Achiever); a navigable three-dimensional environment for treating career exploration as a place to walk through rather than a list to scroll; and a journaling pinboard that persists across sessions and supports longitudinal review. Development followed a design-based research methodology (Brown, 1992; Design-Based Research Collective, 2003) with rolling ten-week iterations alongside successive student development teams. We argue, drawing on Schön's reflective-practitioner tradition (Schön, 1983), Kolb's experiential learning cycle (Kolb, 1984), and Dede's immersive-environments research (Dede, 2009), that DartWorld is most properly understood not as a digital career service but as a sustained reflective environment. The paper closes with the research agenda the design move opens and positions DartWorld as the prototype testing Research Questions 1 and 2 within the lab's broader research program.

KEYWORDS career development · identity formation · longitudinal reflection · immersive learning environments · design-based research · 3D educational platforms · narrative identity · self-authorship · expressive writing · archetype clustering

1. Introduction

Most university career offices run on a model that is humane in any single instance and structurally inadequate at scale. A student walks into the office, talks for twenty to thirty minutes, leaves with a to-do list, and may not return for months. The advisor is competent;

the time is generous by office standards; the conversation is, often, useful in the moment. None of that alters the basic problem: career formation in undergraduates does not happen in thirty-minute sessions. It happens across years, in conversations the student has

with themselves between the advising appointments, with frames they construct gradually as their experience accumulates.

The mismatch between the model and the work is not new, and the response from career-services research has generally been to enrich the model rather than to question it. Add more sessions. Train advisors more carefully. Build assessment instruments students can take asynchronously. These are reasonable moves within the existing frame. None of them address the deeper issue, which is that the unit of analysis for career development is not the session; it is the term, the year, the four years.

This paper describes a prototype that proposes a different unit of analysis. DartWorld is a sustained reflective environment, accessible to students at any time, in which the career-related thinking is the activity, not a service to be received. The platform has three components, each described in detail in Section 4: a reflective onboarding instrument that places the student in one of three identity-related archetypes; a navigable three-dimensional environment that treats career exploration as a landscape to traverse rather than a list to consult; and a journaling pinboard that retains and surfaces the student's writing across multiple sessions, making longitudinal patterns visible to the student themselves. The platform was built in collaboration with Dartmouth's DALI (Digital Applied Learning and Innovation) Lab and is now in its sixth iteration.

The argument we develop is that the spatial-and-longitudinal design pattern is responsive to a specific failure mode of the conventional career-advising model: that the model cannot, by construction, support work that happens between sessions. Section 2 places this argument in three theoretical traditions: developmental psychology's account of identity formation as a multi-year process (Marcia, 1966; Baxter Magolda, 2001; McAdams, 1993); the learning-sciences account of reflection as an environment-shaped practice (Schön, 1983; Kolb, 1984; Pennebaker, 1997); and the educational-technology account of three-dimensional immersive environments as cognitive amplifiers (Dede,

2009; Bricken, 1991). Section 3 describes the design-based research methodology that frames the DartWorld development cycle. Section 4 describes the platform in detail. Section 5 discusses what the design pattern implies, what limits the current implementation, and what research lines the design opens.

2. Theoretical Background

2.1 Identity Formation as a Longitudinal Process

The developmental-psychology literature on identity formation does not treat career decisions as choices made at moments. It treats them as expressions of a longer process that proceeds across years, with characteristic phases. James Marcia's (1966) identity-status framework named four positions that have organized adolescent identity research ever since: *identity diffusion* (no exploration, no commitment), *foreclosure* (commitment without exploration, typically inherited from family or context), *moratorium* (active exploration without commitment), and *achievement* (commitment following exploration). The instrument that operationalized this framework, and the considerable empirical literature that has used it since, presume that movement among these statuses is the developmental work, and that the work happens over years.

Marcia Baxter Magolda (2001) extended this lineage in a longitudinal study that followed the same students from their college years into their forties. Her framework of *self-authorship*, the developmental endpoint in which an individual becomes capable of authoring their own life rather than receiving it from external authorities, depends on three interlocking capacities: trusting an internal voice, building an internal foundation, and securing internal commitments. None of these capacities forms in a single session. They form across years, in interaction with circumstances that demand more of the person than received frames can supply.

The Marcia-and-Baxter-Magolda tradition has a complementary intellectual antecedent in Erik Erikson's (1968) psychosocial framework, which posited identity formation as the central developmental task of late adolescence and early adulthood. Marcia's status framework operationalized Erikson's identity-vs-role-confusion stage; Baxter Magolda's self-authorship extended the Eriksonian frame into longer adulthood. The whole lineage matters for DartWorld because it predicts that career-related identity work in undergraduates is a years-long process with characteristic phases, not a discrete decision amenable to advice.

A more recent contribution from the broader career-development literature is John Krumboltz's planned happenstance learning theory (Mitchell, Levin, & Krumboltz, 1999), which argues that career formation is shaped by unplanned events and that the right developmental targets are the dispositions (curiosity, persistence, flexibility, optimism, risk-taking) that allow learners to make productive use of such events. The Krumboltz frame is directly relevant to DartWorld's pinboard design: the pinboard's longitudinal data substrate is, in part, an instrument for surfacing the unplanned events the student has noticed and the dispositions the student is developing across those events.

Dan McAdams's (1993) narrative identity theory contributes a third complementary framing. Identity, in McAdams's account, is the story a person constructs and continuously edits about who they are, where they came from, and where they are going. The story is not metaphorical; it is the operating epistemology of the self. The implication for career development is direct: a tool that supports career thinking is, in part, a tool that supports the editing of a story. The conventional career assessment, presenting a ranked match at a moment, is poorly designed for this task. A platform that retains the student's own writing across multiple sessions, allows the student to revisit and revise it, and surfaces patterns across time is better designed for it.

Together these three traditions converge on a single requirement: a developmental tool for career formation must operate on a timescale longer than a session.

DartWorld's design responds to this requirement directly. The platform is built not as a single experience to be completed but as an environment to be revisited.

2.2 Reflection as an Environment-Shaped Practice

The learning-sciences literature on reflection has, since Donald Schön's (1983) *The Reflective Practitioner*, treated reflection as a practice rather than an event. Schön drew his cases from the design studio, where students learn through repeated cycles of attempt, critique, and revision, and from professions where competent practice requires what he called "reflection-in-action": the capacity to monitor and adjust one's own work as one is doing it. The crucial methodological point is that reflection of this kind is not produced by exhortation. It is produced by environments designed to occasion it.

David Kolb's (1984) experiential learning cycle formalized a related observation: that learning from experience requires a specific four-stage cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation. Each stage requires conditions the others do not. Reflective observation requires time and prompts; abstract conceptualization requires concepts to think with; active experimentation requires opportunities to test what one has reflected on and conceptualized. A tool that supports any single stage of this cycle is incomplete. A tool that supports the cycle is the developmental unit.

A more recent contribution comes from the literature on expressive writing. James Pennebaker (1997) and his collaborators have demonstrated across a range of contexts that structured writing about emotionally significant experiences produces measurable cognitive and affective benefits over time. The mechanism is not the writing as artifact; it is the writing as cognitive operation. The act of putting an experience into language and revisiting it across multiple sessions appears to do work that thinking-without-writing does not. The DartWorld journaling pinboard is designed

around this finding: the writing itself is the developmental activity, and the persistence of the writing across sessions is what makes the activity longitudinal.

2.3 Three-Dimensional Environments as Cognitive Amplifiers

The educational-technology literature on three-dimensional and immersive environments has matured considerably since Bricken's (1991) early arguments for virtual reality as a learning medium. Chris Dede's (2009) synthesis distinguishes several distinct affordances of immersive environments: multiple perspectives, situated learning, and transfer to non-immersive contexts. Dede's empirical work with multi-user virtual environments such as River City demonstrated that students using three-dimensional environments to investigate scientific problems engaged with the content differently than students using equivalent two-dimensional interfaces, with measurable differences in learning outcomes. We invoke Dede here with the explicit caveat that DartWorld is not doing the kind of content-learning Dede's empirical work measured. Dede's three-dimensional environments were investigative settings for scientific inquiry; DartWorld uses three-dimensional space as a navigation metaphor for self-reflection content. The Dede literature licenses the broader claim that environmental affordances matter for learning; it does not license the specific claim that DartWorld's three-dimensional layer produces the developmental effects DartWorld is designed to support. That claim is an empirical one and remains untested.

The relevant claim for DartWorld is more modest than the broader claims of the immersive-learning literature. DartWorld does not propose that students learn careers by walking through a 3D model of them, in any literal sense. It proposes that treating career exploration as a *navigable space* rather than a *readable list* changes the cognitive task. The shift is the same shift the lab's *Maps over lists* field note documents across multiple projects: ranked outputs ask the user to choose, while spatial outputs ask them to wander, and only the latter supports the exploratory work career assessment is meant to enable. The three-dimen-

sional environment is the most immersive instantiation of this design move available in browser-deployable technology.

2.4 Frame Disturbance as a Design Target

Jack Mezirow's (1997) transformative-learning theory provides a related theoretical anchor, although one we use with some caution. Mezirow's *disorienting dilemma*, in the canonical formulation, is a life-event-magnitude rupture of meaning perspective (job loss, divorce, illness, encounter with profound otherness) that ruptures the learner's prior frames of reference. A nine-question onboarding instrument cannot produce a dilemma of that magnitude. We use the term *frame disturbance* for the smaller-scale phenomenon DartWorld is designed to produce: the productive surprise that occurs when a student's self-image and an environment's response disagree in ways the student is then required to think about.

DartWorld's reflective-onboarding instrument is engineered around this principle. The three archetypes (Explorer, Seeker, Achiever) are deliberately simplified positions; the instrument is calibrated such that many students will land on an archetype that disagrees with their own prior self-image. The disagreement is the design target. A student who reads "Achiever" but does not feel like one has been handed a productive surprise that the rest of the platform supports them in working on. A student who reads "Explorer" and feels confirmed is, on the lab's design bet, less likely to do the developmental work the environment exists to support. The Mezirow tradition provides the orientation; the actual mechanism we are engineering is the smaller frame-disturbance, not the canonical Mezirovian dilemma.

3. Method: Design-Based Research with Rolling Student Teams

DartWorld is positioned within the design-based research tradition (Brown, 1992; Design-Based Research Collective, 2003; Anderson & Shattuck, 2012), with one project-specific extension: the development team

itself rotates. The DALI Lab at Dartmouth pairs undergraduate engineers and designers with project leads on ten-week build cycles aligned to academic terms. Each term, a new team picks up the project from the previous term's commits and adds a specific feature or restructures a specific component. The project lead, who is consistent across terms, holds the design rationale; the build team turns rationale into shipped code. The development cadence is therefore continuous, but the team is term-bounded.

This structure has a methodological consequence: the design-research literature on continuity of researcher across iterations (Anderson & Shattuck, 2012) does not entirely fit. The continuity at DartWorld is at the lead-and-rationale layer, not the build layer. The design-based research methodology is, in our adaptation, focused on the documentation of design rationale across rolling implementations rather than on continuous build-team participation. The DALI Lab structure also implies that the platform must be legible to a team that did not build the previous iteration; this is itself a discipline that affects the design.

The current paper develops the design rationale at sufficient depth that it can be challenged on theoretical grounds. The empirical work the rationale invites, described in Section 5.3, will require partnership with developmental-psychology and learning-sciences research programs equipped to conduct the relevant longitudinal studies.

Scope and method. This paper is a design-research account of platform iterations across rolling DALI Lab build cycles. The platform has not been the subject of formally collected human-subjects research data; the iteration observations described below reflect design-team review and lead-author observation across build cycles, not measured study outcomes. Any longitudinal analysis of student-produced pinboard content would require a consent and review process the lab has not yet operationalized.

4. The DartWorld Platform

4.1 The Reflective Onboarding Instrument

A student new to DartWorld encounters a nine-question reflective onboarding instrument before entering the main environment. The questions begin simply (where are you from, what do you study) and become progressively more reflective (what keeps coming up in your choices, what are you actually worried about). Each response contributes to a profile across three composite dimensions, and the profile is mapped to one of three archetypes: *Explorer* (broad-curiosity profile, exploration over commitment), *Seeker* (values-driven profile, often associated with helping-oriented careers), or *Achiever* (goal-oriented profile, commitment over exploration).

The three-archetype reduction is deliberate. Marcia's (1966) four identity statuses provided the theoretical scaffolding, but four labels was a worse fit for an onboarding instrument than three. The collapsed mapping retains the developmentally important distinctions (exploration-without-commitment vs. commitment-without-exploration vs. commitment-following-exploration) while presenting the student with a vocabulary they will accept. The mapping is not predictive in the Marcia sense; it is positional, naming where the student is *as they enter the environment*, and the student is told that the position is a starting point, not a verdict.

The archetypes are also the engine of the disorienting-dilemma design move described in Section 2.4. The instrument is calibrated such that students whose self-image emphasizes one register (the goal-directed premed, the values-driven activist) frequently land on a different archetype. The disagreement is the design feature.

4.2 The Navigable Three-Dimensional Environment

The main DartWorld experience is a three-dimensional environment the student moves through. Occupations, industries, and stories from previous students populate

the environment as spatially distributed elements. The student walks (in the gamer sense) from one region to another, encountering content as they go. Spatial proximity in the environment is meaningful: related occupations sit near each other, and the layout encodes semantic relations in a way that a list cannot.

The design wager is that the cognitive task of *encountering* career content through movement is qualitatively different from the cognitive task of *reading* career content from a screen. The lab's *Maps over lists* field note discusses this pattern as it has recurred across multiple projects (Synapse, Threshold, and the broader research program). The three-dimensional environment is the strongest available instantiation of the spatial-over-linear principle in browser technology. It is not an attempt to make career exploration into a game; it is an attempt to make career exploration into a place.

4.3 The Journaling Pinboard

The third component is a journaling pinboard that persists across sessions. Students write entries during and between visits to the environment, and the entries remain visible on the pinboard. The pinboard is the operational unit of the platform's longitudinal claim: students can return weeks or months later, see what they wrote, and notice what has changed.

The pinboard design draws on Pennebaker's (1997) expressive-writing literature and on the practical observation that students reflect more honestly when they know their writing is for themselves rather than for an audience. The pinboard is private by default. Students can opt to share entries with specific other users (an advisor, a peer), but the baseline assumption is that the entries are the student's own developmental material, not artifacts for performance.

The pinboard is also the natural locus of any future research data substrate. If a consent and review process were established, anonymized longitudinal entries could be analyzed for developmental patterns: which archetypes' writing shifts, which themes recur, what kinds of experiences trigger the most reflection. The

pinboard is therefore both a developmental tool for the student and a potential research instrument for the lab.

4.4 The DALI Lab Build Cadence

DartWorld is now in its sixth versioned iteration. Each iteration corresponds to one academic term of DALI Lab work, plus the inter-term review and rationale-revision led by the lab. The current paper documents the platform as of version six (Spring 2026); the next version, in development for Fall 2026, focuses on integrating cohort-level affordances that the present versions, designed for individual students, do not yet support.

This rolling iteration is the platform's developmental engine and also its research data substrate. Each version answers a question the previous version raised. Version three replaced the original quiz-style onboarding with the archetype-driven version after the team observed that students did not engage with the previous version's quantitative-match output. Version five replaced an early flat-2D layout with the current three-dimensional environment after the team observed that students were not using the 2D version to *explore*; they were using it to confirm. Version six revised the pinboard to support cross-session pattern surfacing after the team observed that students were not revisiting their own entries without prompting.

The iterations are not improvements toward a known optimum. They are responses to specific observations about how students engage with the platform. The design-based research methodology is what makes this cadence legible as research rather than as ongoing product development.

5. Discussion

5.1 The Longitudinal Pinboard as Primary Affordance

The platform's primary developmental affordance is the longitudinal pinboard, not the three-dimensional environment. This ordering matters and we want to be

explicit about it.

The shift from session-based advising to environment-based reflection does specific theoretical work that more sessions would not. More sessions still have the basic structural property that the work happens *during the session*; environment-based reflection has the property that the work happens *while the student is in the environment, at any time the student is in the environment*. The temporal frame of the developmental work expands from the duration of an appointment to the duration of the student's relationship with the environment. This expansion is not a small change. It is the change that aligns the design of the tool with the timescale of the work the tool exists to support. Identity formation, on the developmental-psychology evidence reviewed in Section 2.1, operates on the year-scale. A tool that operates on the session-scale will, by construction, not address it. A tool that operates on the year-scale at least has the right unit.

The longitudinal pinboard is the mechanism by which this expansion is operationalized. The pinboard persists the student's writing across visits, makes earlier-session material visible to later-session sessions, and (with a future consent infrastructure) would create the data substrate the lab needs to study how students' framings develop over time. None of this requires three-dimensional rendering; it requires structured persistence.

The three-dimensional spatial layer is a secondary affordance. The argument we will make for the 3D layer in the empirical follow-on work, and which we do not yet make in this paper, is that the 3D environment is what makes the longitudinal layer worth returning to. Without it, the platform is a journaling app with archetypes, and there is no shortage of journaling apps. With it, the platform is a place students go, and the *placeness* may produce a relationship with the environment that pure-text journaling does not. This argument is currently a design hypothesis, not an empirical claim. The 3D-vs-2D comparison study described in §5.3 is positioned to test it.

5.2 Limitations of the Current Implementation

The current implementation has limitations that the empirical follow-on work would need to address. The three archetypes have not been validated against Marcia's (1966) original four-status framework; the collapsed mapping is theoretically motivated but not empirically tested. The 3D environment has not been compared, in a controlled study, against an equivalent 2D layout of the same content; the lab's bet that 3D-ness matters is currently a design intuition supported by qualitative observation, not a measured effect.

Any longitudinal-pinboard analysis would require a consent and review process the lab has not yet operationalized, and developmental claims at scale will require longitudinal text-analysis tooling the lab is currently building. The cohort-level affordances being added in version seven are themselves a recognition that the present platform, designed for individual students, does not yet support the cohort-scale claims that the design rationale implies.

The DALI Lab build cadence is a real strength for the project's pace and a real limitation for its research continuity. New build teams every term means that institutional memory about why specific design decisions were made lives with the project lead, not with the code. The codebase has accumulated artifacts of decisions whose original rationale is no longer documented within the codebase itself.

5.3 Open Research Lines

Six lines of inquiry are currently open at Lo/Be Lab around DartWorld.

Archetype-instrument validation. Compare the three-archetype output of the DartWorld onboarding against Marcia's identity-status framework as operationalized in established instruments (the Ego Identity Process Questionnaire, for instance). Establish convergent validity or document where the simplification breaks down.

3D-vs-2D comparison. A controlled study comparing student engagement and reflective output across an identical environment rendered in 3D and 2D. The hypothesis is that the 3D version produces more exploratory behavior and longer journaling entries. The alternative hypothesis is that the difference is novelty, and disappears with familiarity.

Longitudinal pinboard analysis. Text analysis of anonymized pinboard entries across multiple terms, looking for developmental patterns. Specific questions: Do students' framings become more elaborated or more compressed over time? Do specific archetypes show distinct longitudinal patterns? What environmental encounters most often precipitate substantive entries?

Cohort affordances. The current platform is single-student. Cohort-level affordances under development for version seven (shared spaces, peer commentary, cohort-pattern surfacing) implicate a different set of design and research questions, including: At what point does shared visibility help or harm the developmental work? How does peer presence interact with the archetype framing?

Disorienting-dilemma calibration. The onboarding instrument's design bet is that productive disagreement between student self-image and archetype output supports the developmental work. This is testable. Compare students whose onboarding produced a disagreement against students whose onboarding confirmed self-image, on subsequent measures of platform engagement and longitudinal reflection.

Transfer to non-immersive contexts. Dede's (2009) immersive-environments literature treats transfer to non-immersive contexts as a research question. The DartWorld equivalent: do students who spend time in DartWorld engage differently with non-DartWorld career conversations (advising sessions, peer talk, classroom discussion)? This is the practical-impact question and is the hardest to answer rigorously.

5.4 Where DartWorld Sits in the Lab's Program

DartWorld is one of five active prototypes the lab maintains across an ongoing research program on environments that support reflective work during life transitions. The lab organizes its work around five research questions: (RQ1) whether designed environments and guided conversation can support sustained reflection at cohort scale; (RQ2) what design principles support spatial, conversational, and computational tools for sensemaking; (RQ3) whether personal reflection improves group decision-making; (RQ4) how to use AI to surface evidence about a person without replacing their judgment; and (RQ5) what is discipline-specific and what is universal when designing reflection tools for a particular profession.

DartWorld most directly addresses RQ1 (the cohort-scale-reflection question, especially as version-seven cohort affordances ship) and RQ2 (design principles for spatial reflection tools). Two prior companion prototypes test other questions: Synapse (Looper, 2025a) tests RQ2 through a spatial-map design move at instrument scale; the Career Design Lab program at Dartmouth (Looper, 2025b) tests RQ1 and RQ3 as a semester-long program. Remaining prototypes — Narrative by Design (a 90-minute facilitated workshop) and Threshold (a discipline-specific career toolkit) — are in development as companion working reports in the same series, as is the forthcoming framework paper that articulates the four-part design vocabulary (reflection, interpretation, visualization, action) the lab uses to organize the prototypes. The research program is the unit of analysis; the prototypes are the experiments that test it. The cross-project field notes (notably *Maps over lists*, *Research cycles, not curricula*, and *Environments, not advice*) trace patterns that recur across multiple prototypes, including DartWorld.

6. Conclusion

Two arguments have run across this paper. The conventional career-advising model is structurally mismatched to the developmental work it is asked to do,

because career formation operates on a multi-year timescale and advising sessions operate on a thirty-minute timescale. We described DartWorld, a spatial narrative platform developed at Dartmouth College in collaboration with the DALI Lab, as a design response to this mismatch. The platform integrates a reflective onboarding instrument, a navigable three-dimensional environment, and a longitudinal journaling pinboard, and was developed iteratively across six versions using a design-based research methodology adapted for rolling build teams.

The deeper claim is that the unit of analysis for a developmental tool must match the timescale of the developmental work. A session-scale tool cannot do year-

scale work, regardless of how carefully the session is designed. An environment that the student can return to, that retains the student's own writing across visits, and that surfaces patterns across time has the right unit. DartWorld is one instantiation of that principle; the design pattern generalizes beyond it.

Lo/Be Lab welcomes collaboration on any of the open research lines described in Section 5.3, particularly from developmental-psychology research programs equipped to conduct the longitudinal-validity work. Inquiries can be directed to seth.looper@gmail.com.

References

- Anderson, T., & Shattuck, J. (2012). Design-based research: A decade of progress in education research? *Educational Researcher*, 41(1), 16–25. <https://doi.org/10.3102/0013189X11428813>
- Baxter Magolda, M. B. (2001). *Making their own way: Narratives for transforming higher education to promote self-development*. Stylus.
- Bricken, M. (1991). Virtual reality learning environments: Potentials and challenges. *ACM SIGGRAPH Computer Graphics*, 25(3), 178–184. <https://doi.org/10.1145/126640.126657>
- Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *Journal of the Learning Sciences*, 2(2), 141–178. https://doi.org/10.1207/s15327809jls0202_2
- Burnett, B., & Evans, D. (2016). *Designing your life: How to build a well-lived, joyful life*. Knopf.
- Dede, C. (2009). Immersive interfaces for engagement and learning. *Science*, 323(5910), 66–69. <https://doi.org/10.1126/science.1167311>
- Dede, C., Nelson, B., Ketelhut, D. J., Clarke, J., & Bowman, C. (2004). Design-based research strategies for studying situated learning in a multi-user virtual environment. In *Proceedings of the 6th International Conference on Learning Sciences* (pp. 158–165). International Society of the Learning Sciences.
- Design-Based Research Collective. (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher*, 32(1), 5–8. <https://doi.org/10.3102/0013189X032001005>
- Erikson, E. H. (1968). *Identity: Youth and crisis*. Norton.
- Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? A literature review of empirical studies on gamification. *Proceedings of the 47th Hawaii International Conference on System Sciences* (pp. 3025–3034). IEEE. <https://doi.org/10.1109/HICSS.2014.377>
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Psychological Assessment Resources.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.

- Looper, S. (2025a). From ranked match to spatial map: A design-based inquiry into career exploration interface affordances. *Lo/Be Lab Working Reports*, 2025-01. <https://lo-be-lab.com/publications/>
- Looper, S. (2025b). The deliberation cohort: Six tools, one arc. A semester-long program for identity sensemaking at cohort scale. *Lo/Be Lab Working Reports*, 2025-02. <https://lo-be-lab.com/publications/>
- Mitchell, K. E., Levin, A. S., & Krumboltz, J. D. (1999). Planned happenstance: Constructing unexpected career opportunities. *Journal of Counseling & Development*, 77(2), 115–124. <https://doi.org/10.1002/j.1556-6676.1999.tb02431.x>
- Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, 3(5), 551–558. <https://doi.org/10.1037/h0023281>
- McAdams, D. P. (1993). *The stories we live by: Personal myths and the making of the self*. William Morrow.
- McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology*, 5(2), 100–122. <https://doi.org/10.1037/1089-2680.5.2.100>
- Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education*, 1997(74), 5–12. <https://doi.org/10.1002/ace.7401>
- Pennebaker, J. W. (1997). Writing about emotional experiences as a therapeutic process. *Psychological Science*, 8(3), 162–166. <https://doi.org/10.1111/j.1467-9280.1997.tb00403.x>
- Savickas, M. L. (2013). Career construction theory and practice. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (2nd ed., pp. 147–183). Wiley.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
- Tversky, B. (1993). Cognitive maps, cognitive collages, and spatial mental models. In A. U. Frank & I. Campari (Eds.), *Spatial information theory: A theoretical basis for GIS* (Lecture Notes in Computer Science, Vol. 716, pp. 14–24). Springer. https://doi.org/10.1007/3-540-57207-4_2

Suggested citation: Looper, S., with the DALI Lab. (2025c). A place to walk through: Spatial narrative platforms for sustained career reflection at cohort scale. *Lo/Be Lab Working Reports*, 2025-03. https://lo-be-lab.com/publications/pdf/20251015_Looper_DartWorld_LoBeLab.pdf