

FROM IMPOSED TO EMERGENT BEHAVIOR: SYSTEMS THINKING FRAMEWORK FOR ORGANIZATIONAL LEARNING DESIGN

Dyti Dawn
dawndyti@gmail.com

Abstract

Organizational learning design has reached a structural limit. Despite advances in instructional design and outcome-aligned learning pathways, the field continues to impose behavior through individual-level training and reinforcement.

Organizations consequently experience transient, compliance-driven change that reverts under pressure, erodes trust, and withdraws sponsorship. What requires examination is not the quality of interventions but the boundary of the system being designed.

Learning design is often framed as a linear process with limited scope, even when approached systemically. Consequently, learning systems are narrowly bounded, with limited attention to interactions among actors, structures, and feedback loops.

Observable behavior gaps reflect a misalignment between the declared and operational purpose of the system. These patterns are shaped by structural conditions such as risk distribution, delays, mental models, capacity, incentives, and feedback dynamics, which remain underexplored.

The central question must therefore shift—from identifying interventions that impose behavior to examining the structural conditions that enable behavior to emerge. Learning supports capability development, while sustained behavioral change depends on system-level alignment.

This paper adopts a systems-informed diagnostic approach, framing behavior as an outcome of system structure rather than intervention. It integrates three elements:

Learning stocks: salient (e.g., attention, confidence) and latent (e.g., perceived risk, psychological safety)

Signals, incentives, and constraints (SICs): conditions defining what behaviors are rational

Feedback loops: reinforcing and balancing dynamics that sustain or counteract behavioral patterns

The framework is applied across contexts such as frontline attrition, change adoption, and cross-functional collaboration.

Sustained behavioral change cannot be achieved through interventions targeting individuals alone; it emerges when system structures align incentives, signals, and constraints. By expanding system boundaries and diagnosing feedback dynamics, practitioners can identify structural leverage points for durable change. This work reframes learning design as system diagnosis rather than intervention design.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

Keywords

systems thinking, emergent behavior, organizational learning systems, feedback dynamics, structural alignment

1 | Introduction

I have practiced organizational learning design for over a decade across varied contexts, including automotive, consulting, retail, manufacturing, and services. Over this time, my approach to instructional and learning design has matured alongside the field itself, moving from ad hoc programs in response to manager requests, to sound instructional design, and eventually to interventions anchored in business outcomes and workplace performance.

Organizational learning design today is increasingly outcome-oriented, data-informed, learner-centered, and supported by technology. With the emergence of AI, several aspects of instructional design can now be sharpened, iterated, personalized, and scaled more quickly than before. Yet one challenge has remained persistent: sustained behavioral change and enduring shifts in outcomes across contexts remain inconsistent. It is often difficult to pinpoint why the needle did not move, and equally difficult to explain why it did. This paper argues that learning design has reached a maturity ceiling when it seeks sustained behavior change without examining the wider system conditions that shape behavior.

Over time, I began noticing patterns across contexts. Some were visible, while others were subtle, easily missed, or excluded from the usual diagnostic boundaries of learning design. For instance, a manager who had experienced deep personal value through coaching showed extraordinary support for the team's learning goals, encouraging more practice, reflection, and feedback. The manager's prior learning experience is rarely considered a part of the team's learning needs.

In another case, an intervention designed to strengthen collaboration through conflict management skills showed only short-term results. Further reflection revealed that unprotected work time and competing operational priorities made collaboration costly and difficult to sustain. In that context, collaboration was not simply a competency issue; it was not a rational choice within the system.

Learning practitioners often stop at this point with familiar explanations: "We tried our best," "This was the best design possible," "Managers did not support the intervention," or "It is difficult to replicate all the realities of the workplace in the training." While these explanations may be partly true, they are also unsatisfying. As a learning practitioner, it is difficult to accept that the limits of learning design must end where the workplace system begins. The more important question is: what are we missing?

My engagement with systems thinking created an important shift in how I understood this problem. Behavior that appears to be an individual choice is often an outcome of system structure. Learning practitioners use the craft of learning design to build individual awareness, capability, and confidence. However, learning builds capability; system conditions determine whether capability becomes sustained behavior. If training attempts to impose behavior while the surrounding system reinforces an alternative rational behavior, the change lasts only as long as the system allows. Eventually, the system pushes back.

This paper proposes a Systems Thinking-Informed Learning Design framework to help learning practitioners expand the boundary of diagnosis beyond the learner and the intervention. The framework enables practitioners to examine the tension between declared and operational purpose, identify salient and latent stocks, analyze signals, incentives, and constraints, map feedback loops, and locate structural leverage points that influence whether desired behavior can emerge and sustain.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

I have begun applying this framework to organizational problems including frontline workforce retention, collaboration, change adoption and talent pipeline development. The framework brings to the surface systemic factors that may remain invisible within a purely instructional design approach. It is generative in nature: as the practitioner moves through the framework, the system continues to reveal itself and point toward leverage points that can support sustained behavioral shifts.

While this framework is still in its early stage of conceptualization and requires further application across industries and organizational contexts, it offers a useful starting point for learning practitioners seeking to apply a systems lens to organizational learning. It does not reject existing instructional design strategies. Rather, it seeks to strengthen their impact by situating capability-building within the system conditions that shape sustained behavior.

2 | The Maturity of Organizational Learning Design

A useful way to understand the evolution of organizational learning design is through the lens of increasing sophistication in how learning problems are framed and solved. Over the past several decades, learning design has evolved from a reactive training function to a strategic capability focused on improving performance and business outcomes. Each stage of this evolution has expanded the scope of diagnosis, design, and measurement. Yet despite these advances, organizations continue to struggle with sustained behavioral change. This raises an important question: if learning design has become progressively more sophisticated, why do many organizational behaviors remain resistant to change? Examining the maturity of learning design provides a useful starting point for exploring this challenge.

Exhibit 1 presents the maturity progression of organizational learning design, showing how the field has evolved from reactive training delivery to increasingly performance- and outcome-oriented approaches.

Exhibit 1. Organizational Learning Design Maturity Continuum



Level 1 – Ad Hoc Order Taking: Learning as Reaction

At its most basic stage, learning functions operate primarily as service providers responding to business requests. Learning is initiated when a stakeholder identifies a perceived deficiency and requests a training intervention. For example, a finance leader may request a workshop on presentation skills because team members are perceived to be ineffective when presenting to senior leadership. The role of Learning and Development (L&D) is to design and deliver the requested program, often covering broadly relevant topics such as confidence, slide design, and presentation techniques. Success is measured through attendance, completion rates, and participant satisfaction.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

While this approach can address immediate learning requests, it rarely questions the underlying nature of the problem. There is little exploration of why the capability gap exists, what organizational outcome is being affected, or whether training is the most appropriate response. The dominant mental model is straightforward: if the business asks for training, training is the solution. Learning may prove useful, but its impact is often accidental and difficult to connect to business performance.

Level 2 – Objective-Based Learning Design: Learning as Instruction

As the field matured, the focus shifted from delivering training to designing instruction around clearly defined learning objectives. Rather than accepting training requests at face value, learning designers began asking a more disciplined question: What should participants be able to do differently as a result of this intervention?

In the presentation-skills example, this results in specific objectives such as communicating data clearly, selecting appropriate visualizations, or constructing persuasive business narratives. Learning activities become more targeted, opportunities for practice and feedback become more deliberate, and assessments become aligned to desired skill acquisition. Learning effectiveness is no longer judged solely by participant satisfaction but also by evidence that learners have acquired the intended capability.

While this represents a significant advancement in learning design, the focus remains fundamentally instructional. Objectives are internally coherent and instructionally sound, but they remain largely disconnected from organizational outcomes. The underlying assumption persists: if the right skills are taught effectively, performance improvement will naturally follow.

Level 3 – Performance-Oriented Learning Design: Learning as Performance Diagnosis

A further maturity shift occurred when practitioners began challenging the assumption that every performance problem was a training problem. This perspective is reflected in the work of Mager and Pipe (1970), who argued that before prescribing a training intervention, organizations should determine whether a lack of knowledge or skill is the cause of the performance gap. The central question therefore changes from ‘What training is needed?’ to ‘What is preventing successful performance?’

This shift was expanded further through the work of Gilbert (1978), whose research emphasized that performance is often influenced as much by workplace conditions as by individual capability. Gilbert argued that information, resources, consequences, incentives, managerial support, and environmental barriers can significantly influence whether a desired behavior occurs. From this perspective, employees may possess the necessary knowledge and skills yet still fail to perform because the surrounding environment does not support the behavior.

Returning to the presentation-skills example, the diagnosis expands beyond instructional objectives. Questions now include: Are managerial expectations regarding presentations clear? Is useful feedback provided after presentations? Do competing priorities leave sufficient time for preparation? Have previous presentations been adequately reviewed and coached? Are presenters supported before high-stakes meetings? Learning remains an important intervention, but it is considered alongside other performance-improvement mechanisms.

This stage represents an important expansion in maturity because the unit of analysis shifts from the learner to the performance context. Learning is no longer assumed to be the default solution and becomes one potential intervention among many.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

Level 4 – Outcome-Based Learning Design: Learning as Performance Enablement

Building on these foundations, learning design evolved toward a stronger focus on business outcomes. The Action Mapping approach by Moore (2017) challenges designers to begin with the business goal rather than the training content. Rather than asking what people need to know, or do differently, Action Mapping begins with the business goal to be achieved, the actions people must take to achieve that goal, and the barriers that prevent those actions from occurring. Learning design then focuses on creating realistic practice scenarios in which learners make decisions, take specific actions, and examine the consequences of those choices in relation to the business outcome. This approach encourages learners to practice the most critical aspects of their jobs, while also identifying non-training supports, such as job aids, that aid performance. Unlike traditional approaches, Action Mapping focuses on the minimal information learners need to perform the required workplace actions.

Consider the example of a chemicals manufacturing plant seeking to reduce safety incidents in its operations. Using an Action Mapping approach, the learning design would not focus primarily on presenting information about hazardous chemicals or categories of personal protective equipment. Instead, it would begin with the business goal of reducing safety incidents and identify the critical workplace actions required to achieve that goal. The design would then create realistic practice scenarios in which learners decide which PPE to use in specific operational contexts, follow critical steps in equipment-related SOPs, and evaluate how their decisions affect the safety of the operation. In this way, the learning experience focuses on practicing high-consequence decisions and actions, supported only by the information learners need to perform those tasks effectively.

This represents a substantial advancement in the maturity of learning design: learning is no longer treated as an isolated educational activity, but as a lever for organizational outcomes. Yet even at this stage, an important limitation remains.

Consider a program designed to help finance professionals communicate insights more effectively using insight-led slide titles. Rather than using neutral headings such as Q4 Revenue Analysis, participants learn to use titles that communicate conclusions, such as Revenue Growth Slowed Due to Customer Acquisition Delays. Throughout the program they demonstrate the desired behavior successfully. Their presentations become clearer, recommendations become more explicit, and communication becomes more aligned to recognized best practice.

However, once participants return to the workplace, many revert to short, neutral slide titles. The capability has been developed, but the behavior is not sustained.

The hidden blocker lies beyond the boundary of the learning intervention itself. Embedded within the organization is an unexamined leadership mental model: “Good slides should have short titles. Long titles are cluttered, academic, and signal poor thinking.” This assumption is rarely articulated explicitly. Instead, it is reinforced through presentation reviews, informal comments, slide revisions, and leadership preferences accumulated over time.

Employees quickly learn which communication styles are accepted and which are quietly discouraged. No formal policy enforces this preference, yet it continues to shape behavior. These forces are particularly difficult to identify because they exist as tacit norms, informal signals, and shared assumptions rather than visible performance barriers. They often remain hidden even from those who reinforce them.

The intervention itself did not fail; participants learned and demonstrated the desired behavior. The behavior was not sustained because the system continued to reinforce an alternative pattern.

This illustrates the structural ceiling of outcome-based learning design.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

Learning practitioners can successfully identify business outcomes, define critical actions, diagnose performance barriers, and build capability. However, durable behavioral change remains elusive when the deeper conditions shaping behavior remain unseen. These conditions often exist as mental models, informal norms, risk perceptions, incentives, and feedback dynamics embedded within the broader organizational system. Having established the structural ceiling of current learning design maturity, the next section explores its observable consequences and the systemic factors that produce them.

3 | Why A Linear Learning Design Produces Recurring Symptoms

Having established the structural ceiling of current learning design maturity, this section examines the observable consequences of that ceiling and the systemic factors that explain them. A linear approach to learning design assumes that visible behavior gaps can be addressed by improving individual capability or by strengthening immediate performance supports such as resources, tools, and job aids. While useful, this assumption often overlooks the often-invisible facets of the wider system conditions. In such cases, training may improve awareness, capability, or even decision making, but the system continues to reproduce the same behavior.

In *The Fifth Discipline*, Senge (1990) argues that systems thinking requires seeing interrelationships rather than isolated events, and patterns of change rather than static snapshots. Several of his laws are especially relevant here: “cause and effect are not closely related in time and space,” “the harder you push, the harder the system pushes back,” “the easy way out usually leads back in,” “the cure can be worse than the disease,” and “there is no blame.”

Let us look at some of the fallouts of a linear approach to learning design in the following sections.

3.1 Short-Termism Dominates Learning Decisions

One recurring symptom of linear learning design is the pressure to demonstrate immediate visible impact. Learning practitioners are often expected to prove that a program has generated return on investment soon after delivery. This pressure is understandable: learning investments require sponsorship, budgets need justification, and stakeholders want to see evidence of progress.

From a systems perspective, this reflects Senge’s (1990) insight that cause and effect are often separated in time and space. The impact of learning unfolds through delayed micro-actions: a manager gives feedback slightly differently, a team member asks a better question, or a learner experiments with a new behavior in a low-risk context. The impact may also appear in parts of the system that were not originally measured. These changes may not be visible to stakeholders who evaluate learning impact within monthly or quarterly review cycles. Early judgment can therefore lead to premature conclusion, correction or increased control.

Moreover, the target behavior must emerge rationally as a response to the system structure. If the surrounding conditions suppress the new behavior, early measurement may wrongly conclude that training has failed. For example, a leadership program may show strong classroom participation and positive post-program intent. Yet if participants return to a culture where speed is rewarded over experimentation and reflection, the learned behavior may not appear in visible performance metrics for months.

There is another blind spot for learning practitioners. To continue securing sponsorship, practitioners may inadvertently design impact metrics around short-term, visible indicators. While these indicators may be useful, they can create an addictive loop in which every learning intervention is expected to show immediate and measurable impact.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

3.2 Over-Attribution to Training

A second consequence is over-attribution to training. When business outcomes or behaviors do not change, the conclusion is often that training was inadequate, learners were not motivated, or managers did not reinforce the program. This keeps diagnosis inside the learning intervention and ignores the system conditions that determine whether behavior is rational.

Senge's (1990) law that "the easy way out usually leads back in" helps explain this pattern. Training is often the easiest visible solution: familiar, measurable, and professionally accepted. However, if behavior is produced by incentives, constraints, risk, or workload pressure, training alone returns the organization to the same problem.

For example, employees in a chemical manufacturing plant may be trained to report near misses. Yet if low reported incidents are praised and higher reports invite scrutiny, the system quietly rewards under-reporting.

3.3 Escalation of Control Mechanisms

When training does not produce sustained behavior change, organizations often increase control. Programs become mandatory, assessments are tracked more closely, completion is escalated, and compliance requirements become stricter.

While this may appear responsible, it often reflects a narrow system boundary. The diagnosis focuses on individual motivation while the wider system remains unexamined: What signals shaped the behavior? What informal norms or trade-offs made avoidance attractive?

Senge's (1990) law that "the harder you push, the harder the system pushes back" is relevant here. Increased training pressure may create visible compliance, but also resistance, cynicism, or surface-level participation if underlying conditions remain unchanged.

3.4 Cycles of Blame and Misattribution

Linear learning design also produces blame cycles. When post-program practice is not completed, L&D may blame managers, managers may blame learners, and learners may blame workload or irrelevant content. Each actor points outside themselves.

Senge's (1990) law that "there is no blame" is important here. In a system, actors both shape and are shaped by surrounding conditions. The solution rarely lies in identifying who failed; it lies in understanding the relationships that produced the failure. If post-program practice is not completed, the issue may involve workload design, manager expectations, low relevance, unclear accountability, or lack of protected time.

Instead of asking, "Who did not do their part?", the better question is, "What conditions made the intended behavior unlikely to occur?"

3.5 Transient and Unsustained Behavior Change

Another recurring symptom is transient behavior change. Participants demonstrate new behaviors during or shortly after training, but the same collapses under pressure. For example, managers may show improved communication after a 'respectful feedback' program, but aggressive patterns may resurface during delivery crises.

This reflects two systems dynamics. First, behavior is a product of structure, not intervention alone. Incentives, constraints, and risk shape what is rational. If the system rewards immediate delivery, tolerates

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

aggression under pressure, or signals that results matter more than conduct, training-induced behavior remains fragile.

Second, reinforcing loops can amplify the problem. Poor results lead to more control, more mandatory training, reduced ownership, and greater resentment, which then lead to poorer application. The system amplifies the problem while appearing to address it.

Senge's (1990) law that "behavior grows better before it grows worse" is relevant here. A learning intervention may initially improve behavior, but if structural pressures remain unchanged, the old pattern returns after a delay.

3.6 Erosion of Trust and Withdrawal of Leadership Sponsorship

Over time, repeated cycles of limited impact erode trust in the learning function. Stakeholders begin to perceive learning as disconnected from real business problems, or as an activity, event, or cost rather than a source of leverage. This erosion is not merely reputational; it weakens the learning system itself. Once stakeholders lose trust, they invest less attention, provide weaker sponsorship, and engage less seriously in diagnosis.

This dynamic aligns with Senge's (1990) law that today's problems often come from yesterday's solutions. Repeated training responses may have been well-intentioned, but when they fail to address structural causes, they create a legacy of skepticism. Leaders may then reduce investment, delegate learning downward, or treat it as an HR-owned activity. This creates a reinforcing cycle: weaker sponsorship reduces the learning function's ability to influence system conditions, which lowers impact further and deepens doubt about learning's relevance.

The issue is therefore not merely stakeholder management. It is a systemic consequence of repeatedly expecting learning interventions to produce outcomes that the wider organizational system does not support.

Re-examining the Boundaries of the Learning System

The consequences discussed above point to a deeper issue: learning practitioners often define the learning system too narrowly. The typical learning system includes the learner, trainer or facilitator, learning goals, content, materials, interventions, and evaluation. Its implicit mental model is:

If the learner understands and practices the right skills and is supported by the appropriate performance aids behavior will change.

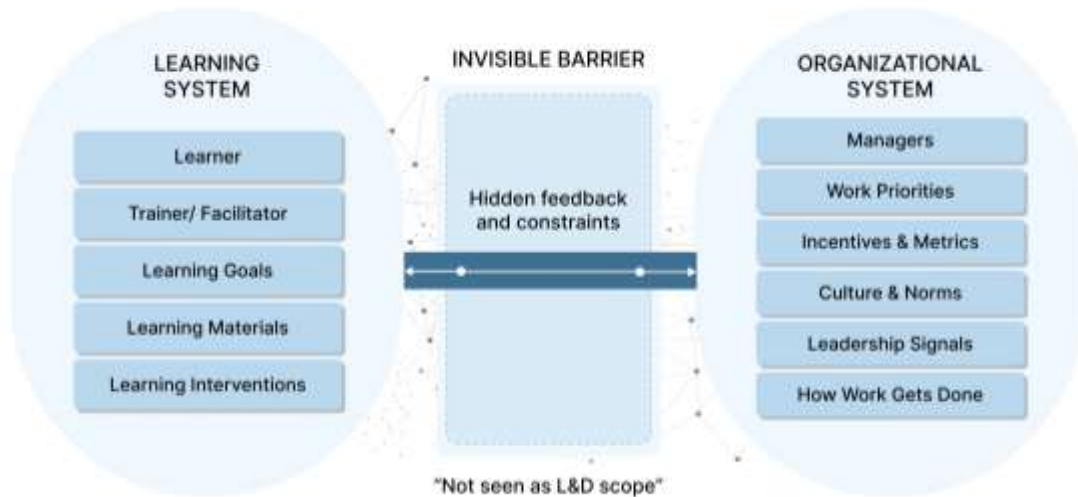
This model assumes that agency sits mainly with the learner, that transfer of learning is primarily instructional, and that barriers are individual, such as mindset, skill, awareness, confidence, or motivation. A more sophisticated learning ecosystem considers the broader performance environment, including resources, managerial support, information, technology, and other enablers that support workplace performance. However, the organizational system has far greater causal power over daily behavior. It includes work priorities, incentives, metrics, culture, norms, reinforced behaviors, managerial and leadership signals, operational constraints, and wider market forces. This system determines what behaviors are rewarded, ignored, punished, or made possible.

Exhibit 2 illustrates this relationship between the narrower learning system and the wider organizational system. The exhibit shows that the learning system is often treated as though it is self-contained, while the organizational system continues to govern the everyday conditions under which

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

behavior occurs. The “invisible barrier” between the two systems is not a real boundary; it is a professional and mental boundary created by assumptions about what is or is not within the scope of the ‘learning system.’

Exhibit 2. The Current View of the Learning System as Separate from the Wider Organizational System



These assumptions create an invisible barrier between the learning system and the wider organizational system. Examples include:

- “We can influence training, but not the system.”
- “Culture is outside L&D’s scope.”
- “We cannot change managerial priorities.”
- “Leaders and managers will not understand this.”
- “How employees apply learning is their responsibility.”
- “People need to take ownership rather than blame the system.”
- “We do not have the budget or authority to make this happen.”
- “Let us try a training first and see what happens.”

These assumptions make incentives, pressure, constraints, and leadership signals less visible to learning practitioners. They also create the illusion that learning failures are learning design failures, or individual learners’ failures, when in many cases they may be system-design failures. When learning practitioners treat the learning system as separate, they risk designing for one part of the system while the whole system continues to produce different behavior.

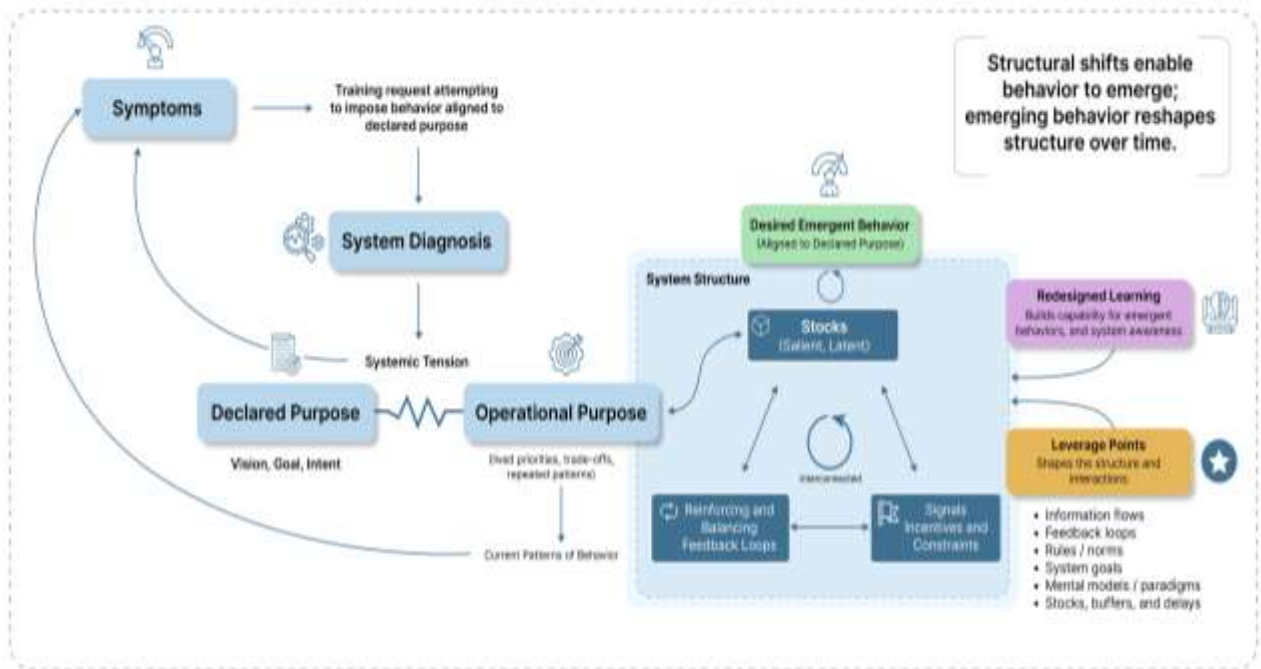
In the next section, we examine a systems thinking-informed learning design framework.

4 | Systems Thinking–Informed Learning Design Framework

Exhibit 3 describes the key elements of the Systems Thinking–Informed Learning Design framework. The exhibit serves as an anchor for understanding how the framework can be used to examine and navigate an organizational performance problem.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

Exhibit 3. Systems Thinking-Informed Learning Design Framework



The framework begins with a familiar organizational pattern: a visible symptom is translated into a training request. The symptom may be missed targets, high error rates, poor customer satisfaction, non-compliance, low motivation, attrition, or a desired behavioral shift that is not taking place. The suggested solution is often training because the dominant assumption is that the problem exists due to a lack of awareness, skill, mindset, or managerial capability. Beneath such requests is often an unstated expectation: *training should impose a desired behavior*.

A systems thinking lens reframes this request. Instead of asking only, “What must people learn, do differently, or achieve?”, the practitioner asks, “What system conditions are producing the current behavior, and what conditions would make the desired behavior rational?”

Let us understand this framework through an illustrative example.

Illustrative Example: Attrition in Medical Devices Manufacturing Frontline

Consider a medical device manufacturing organization that operates under strict compliance standards, high audit risk, manual-heavy operations, and a competitive market for skilled operators. Over time, the organization experiences attrition rates in its manufacturing division, which is higher than industry norms. Exit interviews cite “better job opportunities” and “personal reasons,” while deeper discussions reveal sustained work pressure, aggressive supervisory behavior, and physical and emotional fatigue. Typical responses to reduce attrition have focused on manager training and periodic compensation adjustments, resulting in brief improvements followed by repeated setbacks.

Declared and Operational Purpose

The first element of the framework is the distinction between declared purpose and operational purpose. The declared purpose is the official intention of the system—what leaders, policies, and documents say the system is designed to do. The operational purpose is revealed through everyday behavior, priorities,

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

incentives, and trade-offs, especially under pressure. The real purpose of a system is not only what it declares, but what it repeatedly does. Let us look at the declared and operational purposes in the illustrative example –

Declared Purpose - Reduce attrition by improving managerial capability and employee experience.

Operational (Lived) Purpose - Produce compliant output at required volumes by any means necessary.

This does not imply malicious intent. It means the system is organized around production continuity, audit readiness, and compliance protection. The core structural tension is that production and compliance demands exceed sustainable human capacity. Supervisors translate system overload into urgency, control, and sometimes aggression.

Key Actors and Elements

Key actors and elements are the people, roles, structures, and conditions whose interactions produce the observable outcome. They answer the question: who and what is involved in producing attrition, intentionally or unintentionally?

In this case, easily recognized actors and elements include frontline manufacturing operators, supervisors, plant managers, HR, manual intensive operations, and tight delivery commitments. However, several less visible elements are equally influential: senior leadership behavior, regulatory bodies, high-precision SOPs, manual-intensive production processes, cost-containment priorities, competitive labor markets, and assumptions about younger employees' commitment.

Core Stocks

This framework draws on Meadows' (2008) systems thinking work, wherein stocks are understood as accumulations that build up or deplete over time and shape system behavior. Some stocks are salient and observable; others are latent, less visible, and often more powerful in shaping behavior.

In the illustrative case, the first important stock is the **throughput pressure gap**, or the gap between required production output and safe, sustainable human capacity. Production targets are visible, but sustainable capacity is often assumed rather than examined. This stock accumulates through demand peaks, constrained capacity, manual processes, and attrition; it drains through automation, staffing buffers, demand smoothing, and explicit trade-offs on output.

The second stock is **work burnout**, a latent stock that becomes visible only after delays through absenteeism, disengagement, errors, complaints, health issues, or attrition. It accumulates through chronic pressure, physical intensity, deadline-driven aggression, reduced recovery time, and attrition-driven workload increases. It drains through workload reduction, automation, predictable scheduling, recovery time, and supervisor empathy.

The third stock is **compliance fear**, a latent stock. In a regulated manufacturing environment, compliance pressure is legitimate. However, fear accumulates when SOP deviations, audit threats, and zero-tolerance framing combine with punitive responses to mistakes. It drains when processes are error-proofed, psychological safety increases, and leaders treat errors as learning opportunities.

The fourth stock is **psychological safety to ask questions or seek help**, also latent. It accumulates when managers respond constructively during pressure moments, support early error surfacing, and treat

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

questions as risk-prevention behavior. It erodes through public reprimands, punitive escalations, and aggression justified in the name of compliance.

The fifth stock is the **meaning of good leadership**, a latent cultural stock. It accumulates when leaders model calm, respect, and learning under pressure, and when aggression has visible consequences. It erodes when leaders behave aggressively during crises while espousing respect as a value.

The sixth stock is the **perceived benefit of staying**, a latent stock in the operator's mind. It accumulates through learning, respect, fair compensation, sustainable workload, and visible growth opportunities. It drains through burnout, better external opportunities, feeling disposable, and repeated exposure to pressure without support. Attrition becomes more likely when this stock falls below a threshold.

Signals, Incentives, and Constraints

Signals are messages sent through behavior, tone, reactions, and decisions, especially by leaders. In this case, senior leaders may speak about respect, while displaying aggression during crises. Compliance may be framed as “non-negotiable at any cost.” The unintended signal is that aggression is acceptable when stakes are high. Employees and supervisors learn not only from stated values, but from what leaders do under pressure.

Incentives are forces that make some behaviors more attractive than others. Supervisors may be rewarded for throughput and compliance but not held operationally accountable for retention, burnout, or psychological safety. This creates risk asymmetry: output and compliance risks are owned by operations, while attrition risk is externalized to HR. As a result, supervisors act rationally by protecting what they are measured on.

Constraints are real or perceived limits on action. In this case, automation investment is delayed, manual intensity cannot be reduced in the short term, trained manpower is limited, and regulatory demands are fixed. These constraints mean that training can improve supervisory capability but cannot by itself remove the pressure conditions under which poor behavior emerges.

Feedback Loops

The concepts of feedback loops and delays are grounded in Forrester's (1961) system dynamics tradition, which explains how system structure produces behavior over time through stocks, flows, feedback, and delays. A reinforcing loop amplifies a pattern; the more it happens, the more it keeps happening. A balancing loop attempts to stabilize the system around a goal, often by reducing immediate pressure. Senge's (1990) systems laws further explain why such loops create unintended consequences, especially when delays obscure long-term effects. Let us look at some of the feedback loops in our illustrative example.

R1: Pressure–Attrition Loop. As the throughput gap increases, work pressure rises. Work pressure increases burnout, and after a delay, burnout contributes to attrition. Attrition reduces available capacity, which increases the throughput gap further.

Throughput gap ↑ → Work pressure ↑ → Burnout ↑ → Attrition ↑ → Available capacity ↓ →
Throughput gap ↑

R2: Compliance Fear–Aggression Loop. Pressure and deviations increase compliance fear. Compliance fear drives manager aggression. Aggression reduces psychological safety, causing employees to hide questions or errors. Hidden errors increase compliance risk, further intensifying fear.

Pressure / deviation ↑ → Compliance fear ↑ → Manager aggression ↑ → Psychological safety ↓

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

→ Hidden errors ↑ → Compliance risk ↑ → Compliance fear ↑ → Pressure / deviation ↑

R3: Attrition–Supervisor Overload Loop. Attrition increases supervisor span and reduces coaching time. Lower coaching time increases error rates and pressure, which contributes to further attrition.

Attrition ↑ → Supervisor span ↑ → Coaching time ↓ → Error rates ↑ → Pressure ↑ → Attrition ↑

B1: Symptomatic Manager Training Loop. Aggressive behavior triggers manager training. Training temporarily improves behavior, but pressure remains unchanged. Over time, aggression returns. This reflects Senge’s laws that behavior may grow better before it grows worse, and that the harder one pushes, the harder the system pushes back.

Aggression ↑ → Manager training → Temporary behavior improvement → Pressure unchanged

→ Aggression returns

B2: Compensation Fix Loop. Attrition risk triggers salary correction. Retention improves temporarily, but expectations reset. When expectations are unmet, resentment grows and attrition returns. This reflects Senge’s law that the cure can be worse than the disease when symptomatic solutions become addictive.

Attrition risk ↑ → Salary correction → Temporary retention → Expectation reset → Resentment when unmet → Attrition ↑

Typical Solutions and Why They Fail

Manager training can build capability. Supervisors may learn assertive communication, structured feedback, appreciation, and ways to work better with younger employees. However, if the throughput pressure gap remains high, compliance fear remains intense, automation remains limited, and senior leaders model aggression under pressure, triggers for harsh behavior remain active. Training improves skills, but the wider system drains managerial effectiveness. This reflects Senge’s (1990) law that behavior often grows better before it grows worse: early improvement may appear, but unchanged structural pressures pull behavior back toward the old pattern.

Compensation correction may reduce attrition briefly by improving the perceived benefit of staying, especially when employees feel their physical effort is not fairly rewarded. However, if compensation becomes the default response to attrition, it can become an addictive symptomatic solution. The organization may rely on periodic correction rather than addressing manual intensity, burnout, workload, respect, and growth. This aligns with Senge’s (1990) law that the cure can be worse than the disease when an intervention relieves pressure temporarily but weakens the system’s ability to address the underlying problem.

Training and compensation should not be avoided; they must be part of a broader intervention structure. Training develops capability, and compensation improves the attractiveness of staying, but neither can sustainably reduce attrition if the operating system continues to convert production and compliance pressure into human depletion.

Leverage Points

The concept of leverage points is drawn primarily from Meadows’ (1999) work on systems thinking, where leverage points are described as places within a complex system where small, well-placed interventions can produce significant shifts in system behavior. She also argues that not all interventions have equal leverage: changing numbers or targets is usually lower leverage, while shifting feedback loops, information flows, rules, goals, and mental models offers deeper influence. Let us look at some of the possible leverage points in our example.

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

Leverage Point 1: Redesign the production–capacity match.

Automation, staffing buffers, demand smoothing, and visible trade-offs reduce the throughput pressure gap. This matters because the pressure gap feeds multiple reinforcing loops: burnout, compliance fear, supervisor aggression, and attrition. However, automation should not be framed as the only answer. It is one structural intervention among several. Its value lies in reducing physical intensity, error-prone manual work, and the pressure that triggers harmful supervisory responses.

Leverage Point 2: Redistribute retention risk.

Currently, output and compliance risks are operationally visible, while attrition and burnout may be treated as HR concerns. Making attrition, burnout indicators, psychological safety, and supervisor span visible to line leaders changes the decision environment. This does not mean making attrition punitive. It means making workforce depletion an operational signal, not just a HR metric.

Leverage Point 3: Change the meaning of leadership under pressure.

This is a deeper leverage point because it acts on paradigms. If “good leadership” is implicitly understood as pushing harder until output is achieved, aggression becomes rational. If good leadership is redefined as delivering compliant output without depleting human capacity, the behavioral expectation changes. Senior leaders play a critical role here because their conduct under pressure becomes a signal for the entire system.

Leverage Point 4: Build manager capability in context.

Manager training remains important, but it should be redesigned as a systems-informed intervention. Instead of only teaching communication techniques, the program should help supervisors recognize pressure loops, compliance fear, burnout signals, and the delayed consequences of aggression. This moves training from behavior prescription to system awareness. In Meadows’ terms, this intervention works through information flows and mental models.

Leverage Point 5: Create real-time sensing of burnout and pressure.

This targets delays in the system. Attrition is often a late signal; by the time employees leave, burnout has already accumulated. Real-time indicators such as overtime, absenteeism, error clusters, grievance patterns, supervisor span, and repeated escalation can reduce the delay between system stress and management response. This strengthens the system’s ability to self-correct before attrition becomes visible.

To summarize, attrition in this system is not simply a morale problem, a pay problem, or a managerial capability problem. The system is absorbing production and compliance pressure through human capacity. Supervisors become the mechanism through which this pressure is converted into urgency, control, correction, and sometimes aggression. Frontline employees respond to this pressure through fatigue, disengagement, reduced psychological safety, and eventually exit.

The system will stabilize only when pressure is reduced structurally, risk is more evenly distributed, and respect is demonstrated precisely when it is hardest to demonstrate. Training and compensation can support change, but they cannot substitute for redesigning the conditions that produce attrition. This is the central shift from imposed behavior to emergent behavior: not merely telling managers how to behave, but shaping the system so that respectful, sustainable, and retention-supportive behavior becomes rational.

5 | Implications on the Practice of Learning Design

The framework has important implications for how learning design is practiced. Learning interventions are primarily positioned to build capability: knowledge, skills, confidence, and building expertise through practice and feedback. Performance aids can further support the environment in which the desired behaviors

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

and skills are expected to be demonstrated. However, the recurring symptoms discussed earlier, including short-termism, over-attribution to training, transient behavior change, erosion of trust, and withdrawal of sponsorship, suggest that capability alone does not ensure sustained behavior change. Desired behavior is more likely to sustain when the wider system makes that behavior rational, safe, reinforced, and thus emergent.

This does not mean that learning practitioners must become full systems theorists or own the entire organizational system. Rather, they need to use a systems lens to make visible how structure shapes behavior. This includes helping stakeholders examine the actors, incentives, constraints, risks, feedback loops, and operational priorities that may be sustaining the current behavior. Instead of accepting a training request at face value, practitioners can expand the boundary of diagnosis and ask what else in the system must shift for learning to translate into practice.

This also changes the nature of learning objectives and design. Learning objectives may need to move beyond “what participants need to do differently” towards helping learners understand the system they are part of, how they shape that system, and how the system shapes their own behavior. Learning design can then build both capability and system awareness.

The framework is generative because it helps practitioners notice parts of the system that may previously have remained invisible. When training fails, the question shifts from “who did not apply the learning?” to “where did the system fail to support the desired behavior?” This enables more precise use of leverage points such as information flows, feedback loops, rules, norms, incentives, and mental models. In this way, learning can be positioned not as an ad hoc response to symptoms, but as a systems enabler that supports durable, emergent behavior change.

6 | Conclusion

This paper argues that organizational learning design has matured significantly, moving from ad hoc training delivery to objective-based, performance-oriented, and outcome-based approaches. However, this maturity has reached a structural ceiling when sustained behavioral change is expected from learning interventions alone. This ceiling is visible in recurring symptoms such as transient behavioral shifts, shortcuts in impact assessment, erosion of trust in learning, and withdrawal of leadership sponsorship.

To move beyond this ceiling, learning practitioners need to shift from a linear view of learning design to a systems-thinking informed lens. The framework proposed in this paper supports this shift by helping practitioners examine the tension between declared and operational purpose, the interplay of signals, incentives, constraints, feedback loops, and the stocks that shape what becomes rational behavior in the system. It guides practitioners toward leverage points that are often invisible within conventional learning diagnosis, enabling actors to shape conditions from which desired behavior can emerge rather than be imposed.

Specifically, the framework helps practitioners examine:

- which parts of the system become visible and more salient through diagnosis
- how learning interventions can be designed alongside changes in information flows, incentives, and constraints
- how these shifts influence the feedback loops that sustain or counteract behavior
- which leverage points contribute to a sustained shift in the desired behavior

From Imposed to Emergent Behavior: Systems Thinking Framework for Organizational Learning Design

The framework does not undermine existing instructional design strategies; it strengthens their impact by situating capability-building within system conditions. The illustrative case demonstrates its usefulness, but further testing is required across industries and organizational problem contexts. Exhibit 4 therefore presents Systems Thinking–Informed Learning Design as the next maturity level in organizational learning design, positioned at the intersection of learning and organization development.

Exhibit 4. Organizational Learning Design Maturity Continuum: Moving Toward Systems Thinking-Informed Learning Design



References

- Forrester, J. W. (1961). *Industrial dynamics*. Cambridge, MA: MIT Press.
- Gilbert, T. F. (1978). *Human Competence: Engineering Worthy Performance*. New York: McGraw-Hill.
- Mager, R. F., & Pipe, P. (1970). *Analyzing Performance Problems: Or You Really Oughta Wanna*. Belmont: Lake Publishing Company.
- Meadows, D. H. (2008). *Thinking in Systems: A Primer*. White River Junction: Chelsea Green Publishing.
- Meadows, D. H. (1999). *Leverage Points: Places to Intervene in a System*. Hartland: The Sustainability Institute.
- Moore, C. (2017). *Map It: The Hands-On Guide to Strategic Training Design*. Alexandria: ATD Press.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday/Currency.