

Towards the Scholarship of Sensei-ing: Building Dynamic Capabilities with the Toyota Production System

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Abstract. This conceptual paper proposes the Scholarship of Sensei-ing as a distinct scholarly discipline grounded in the Scholarship of Teaching and Learning, threshold concepts, and problem-based learning. Drawing on the lean system of learning systems, the paper also argues that the Toyota Production System can function as an integrated learning architecture that develops organizational sensing, seizing, and transforming capabilities - the dynamic capabilities associated with competitive advantage. It is proposed that, through sensei-facilitated learning, organizations may develop learning-to-learn capability that enables continuous improvement and adaptation. Two illustrative cases, analyzed from published secondary sources, show how the framework can be used to interpret executive engagement with sensei. Limitations concerning source bias, case selection and generalizability are discussed.

Keywords: Lean, Sensei, Learning, Threshold Concepts, Problem-Based Learning, Dynamic Capabilities.

1 Introduction

Organizations facing uncertain, rapidly changing markets require more than operational efficiency. They require dynamic capabilities: the organizational capacity to sense emerging opportunities and threats, seize them quickly, and transform processes and business models accordingly [1]. Yet many lean transformations focus primarily on operational excellence through tool implementation, and may fail to develop the dynamic capabilities that distinguish market leaders from laggards.

Engaging with a lean sensei represents a different approach. Rather than deploying lean tools to achieve today's output more efficiently, the sensei facilitates learning that develops organizational capacity to continuously improve, adapt and evolve [2]. When a sensei takes an executive to Gemba (the actual place where value is created) and asks "How well are we satisfying every customer?" or "Where are we passing on defects?" the sensei is not diagnosing operational problems. The sensei is surfacing threshold concepts - transformative understandings about how the business works - that enable executives to sense problems others miss, seize improvement opportunities others overlook, and transform their organization's capability.

This conceptual paper proposes the Scholarship of Sensei-ing as a scholarly discipline grounded in four integrated theoretical frames: the Scholarship of Teaching and Learning (SoTL) as the pedagogical foundation; threshold concepts and problem-based learning (PBL) as mechanisms of deep learning; the lean system of learning systems (L-SoLS) for understanding the Toyota Production System (TPS) as a learning architecture; and Teece's dynamic capabilities theory for explaining sustained competitive advantage. The framework draws on published research documenting sensei practices and is illustrated using two contemporary cases of sensei engagement with chief executive officers (CEOs), analyzed from secondary sources. The cases serve to show the interpretive value of the framework, not to test or validate it. The paper therefore addresses the following questions: how can sensei practice be framed as a scholarly discipline, and through which mechanisms might it contribute to the development of dynamic capabilities? Section 2 presents the theoretical background; Section 3 develops the proposed discipline and its boundaries; Section 4 describes the research approach, the illustrative cases and their limitations; and Section 5 draws conclusions to the work.

2 Theoretical Background

2.1 The Scholarship of Teaching and Learning as a Model for Professional Practice

The Scholarship of Teaching and Learning (SoTL) has its origins in Boyer's reconceptualization of academic scholarship, which set the scholarship of discovery alongside those of integration, application, and teaching, and argued that the last had been unjustly excluded from what the academy counts as scholarly work [3]. The later shift from "scholarship of teaching" to "scholarship of teaching and learning" was not cosmetic: it moved the object of inquiry from the inputs of teaching to the outputs of student learning [4]. Teaching, long treated as a craft acquired through experience and imitation of experienced colleagues, was thereby reframed as an intellectual practice deserving systematic, theoretically grounded investigation.

What distinguishes SoTL simply from good teaching is not the quality of the teaching itself, but what is done with it. [5] draws a deliberate line between scholarly teaching, which is well grounded in the sources and methods of a field, and a scholarship of teaching, which arises only when that work is made public, peer-reviewed, and exchanged with the professional community so that others can build on it. For example, excellent clinical practice in a teaching hospital is indispensable, but it does not become scholarship until it is subjected to systematic reflective analysis and rendered community property [5]. The obligation follows from professional role: every academic belongs to two professions, the discipline and the practice of educating, and in both the scholar is obliged not to keep what they learn to themselves.

SoTL is nonetheless a situated activity rather than educational research in the traditional sense. [6] characterizes SoTL as evidence-based critical reflection on practice aimed at improving practice, distinguishing it from research, local evaluation, and literature review precisely to keep the focus on improving the learning of one's own

students. Its value lies in the interplay between the generic and the contextual: generic research identifies powerful ways of thinking, but their meaning must be worked out within a particular discipline and practice, because a deep approach to learning takes different forms across different disciplines, and academics must give generic findings meaning within their own teaching contexts.

The leverage of SoTL is therefore collective rather than individual. [7] argues that its real value lies in cultivating a culture of continuous improvement and raising an institution's aggregated capacity to support learning, driven by peer review among practitioners and enabled by leaders who can alter the structures constraining individual action [6]. Their central observation is that practitioners already hold serious convictions about teaching, but voice them backstage within small networks of trusted peers, where they never reach the wider culture; the work of SoTL is to bring those conversations into the open, theoretically informed and documented.

That such a scholarly discipline rooted in practice should express itself as a culture of continuous improvement, sustained by peer scrutiny and leadership attention to the conditions of work will be familiar to any lean educator. As such, the Scholarship of Sensei-ing intends to apply this SoTL framework to organizational learning and business transformation. Just as SoTL emerged from recognition that teaching is an intellectual and pedagogical practice deserving systematic study, the Scholarship of Sensei-ing emerges from recognition that sensei-facilitated business transformation rests on sophisticated pedagogical principles grounded in learning theory. Just as SoTL scholars investigate how teachers facilitate deep learning in students, the Scholarship of Sensei-ing investigates how sensei facilitate deep learning in executives for sustainable organizational transformation. And just as SoTL positions teachers as scholar-practitioners grounded in both disciplinary expertise and educational theory, the Scholarship of Sensei-ing positions sensei as scholar-practitioners grounded in mastery of TPS and an understanding of foundational learning theories.

2.2 Threshold Concepts and Problem-Based Learning: The Mechanisms of Deep Learning

Understanding how sensei facilitate deep organizational learning requires grounding in contemporary educational theory about threshold concepts and problem-based learning (PBL). Threshold concept theory, developed through research into how students grasp difficult ideas in various disciplines, identifies concepts that once genuinely grasped fundamentally transform how people understand a domain [8]. These threshold experiences are not merely additions to existing knowledge. Rather, they involve cognitive restructuring where learners reorganize their mental models to accommodate new understanding that contradicts previous assumptions.

Threshold concepts often involve what [8] calls troublesome knowledge - knowledge that contradicts learners' mental models. Grasping threshold concepts require genuine cognitive restructuring, not simple information supplementation. TPS embodies a set of interrelated threshold concepts that challenge conventional organizational and manufacturing thinking [9]. The concept that customer value, not internal process efficiency, should determine product and process design contradicts the

conventional wisdom that internal optimization produces competitive advantage. The concept that producing only what is needed when it is needed (Just-in-Time, JIT) actually reduces lead-time and cost compared to large-batch production challenges deeply ingrained beliefs about economies of scale and resource utilization. And the concept that stopping production at every defect (Jidoka) is actually more productive than running continuously and fixing problems later violates intuitive sense about productivity and throughput.

These concepts, along with others embedded in TPS such as Kaizen (continuous improvement), Heijunka (load leveling), and 5S (visually organized workplaces with team ownership) constitute profound troublesome knowledge for organizations accustomed to conventional operational thinking. They are not simply additional techniques to add to existing practice. They require fundamental reorganization of how leaders think about work, productivity, quality, and organizational purpose.

The sensei's pedagogical role involves creating conditions where learners cannot remain in the comfortable surface mimicry of TPS tools without grasping the underlying threshold concepts. By taking learners to Gemba (the real place) and asking "What do you actually see?", the sensei creates cognitive dissonance between what learners observe and what they expected to see. The gap between observation and expectation becomes the learning opportunity. When a manager observes that stopping production to address a quality issue leads to faster overall throughput (contradicting the assumption that continuous running maximizes output), that manager encounters troublesome knowledge. The sensei's role is creating the conditions where this encounter becomes unavoidable and inescapable.

PBL provides the pedagogical mechanism through which sensei facilitate this transformative learning. PBL inverts the conventional sequence of education: rather than teaching content first and then applying it to problems, PBL begins with authentic, complex problems that drive learning [10]. Learners encounter a problem, identify what they already know, determine what they need to learn to address the problem, investigate independently, and test hypotheses against reality. This sequence parallels lean improvement processes built on the Plan-Do-Check-Act (PDCA) cycle, which also begins with observing current conditions, defining problems, testing hypotheses through experimentation, and reflecting on learning.

In PBL, the role of the facilitator shifts fundamentally from knowledge transmission to learning facilitation [11]. Rather than lecturing about how to solve problems, the facilitator creates conditions where learners must solve problems. Rather than providing answers, the facilitator asks questions that prompt deeper thinking. Rather than directing toward predetermined solutions, the facilitator helps learners discover solutions themselves. This approach requires more skill than lecturing, as the facilitator must understand the domain deeply enough to recognize productive learning paths. The facilitator must resist the temptation to solve problems for learners, recognizing that the struggle to solve problems is where learning happens.

Importantly, lean tools function within PBL frameworks not as solutions to implement but as scaffolds for problem identification and understanding. A value stream map is not primarily a process diagram; it is a device that makes work visible and prompts the question "Why is work organized this way?" Kanban is not primarily a scheduling

system; it is a device that makes problems immediately visible and prompts investigation into root-causes. 5S is not a housekeeping program; it is a device that reveals what is normal and what is abnormal. As such, when a practitioner says "This tool doesn't work here," the tool is actually functioning perfectly - precisely as it should. The tool is scaffolding the realization that the process cannot deliver what it should, and therefore deeper investigation is required. The sensei recognizes this scaffolding function and responds not by defending the tool or explaining its proper use, but by asking: "Good, you've discovered an important knowledge gap between current state and ideal state. What does that gap tell us about what we need to learn?"

The role of questioning is central to both PBL and sensei-ing. Rather than providing answers, the sensei asks insightful questions that prompt learners to think more deeply about their situation and their assumptions. Over time, this develops learning-to-learn capability that enables organizations to solve future problems independently. This contrasts with an expert mode of consulting, in which the helper analyzes problems and recommends solutions (see Section 3.2).

2.3 The Lean System of Learning Systems and the TPS as Learning Architecture

While threshold concepts and problem-based learning explain the pedagogical mechanisms of sensei-ing, understanding how sensei operate across different organizational levels requires us to consider lean as a system of learning systems. Constructing the L-SoLS framework, [12] reconceptualizes lean not as a collection of tools or techniques, and not as a cultural philosophy, but as a deliberately architected system of nested learning systems that ultimately generate evolutionary organizational learning capability. This reconceptualization has profound implications for understanding how lean organizations sustain competitive advantage.

L-SoLS comprises three nested but interdependent learning systems operating at different yet simultaneous and recursive levels of organizational abstraction. System 1, *Learning to Stabilize*, addresses executional deviation where actual performance diverges from defined standards. System 2, *Learning to Improve*, addresses process design limitations where persistent gaps between desired and actual performance cannot be resolved through adherence to existing standards. This system presupposes the stability of System 1. System 3, *Learning to Adapt*, addresses strategic or environmental misalignment where the fundamental direction of the organization requires revision due to changing markets, technologies, or societal conditions. This system presupposes the reflexivity of System 2. You cannot effectively reconfigure strategy if the organization cannot engage in the disciplined improvement of System 2.

[12] also suggests that TPS provides the concrete instantiation of how the L-SoLS learning architecture operates. Rather than treating TPS as a collection of operational techniques or best practices to implement, the framework reveals TPS as an integrated set of conditions that simultaneously address all three learning systems. The TPS conditions of customer satisfaction, JIT, Jidoka, and basic stability (standardized work / 5S) all serve as lenses through which sensei identify where organizational learning is needed. For example, when a sensei uses TPS conditions as diagnostic tools, pointing

to departures from these ideals, the sensei is surfacing learning opportunities at whichever system level is most relevant to the situation. Departures from standardized work might reveal a System 1 execution problem (the standard is not being followed / achieved) or a System 2 problem (the standard itself is outdated and requires improvement). Departures from JIT flexibility might reveal a System 2 process design limitation or a System 3 strategic misalignment with customer needs. The same TPS condition can reveal different learning needs depending on the organizational context. The sensei's skill lies in recognizing which system level requires attention and asking questions that develop understanding at that level.

2.4 Dynamic Capabilities: Explaining Sustained Competitive Advantage

In this section, Teece's dynamic capabilities framework [13] is presented as a means of understanding why sensei-facilitated learning may contribute to sustainable competitive advantage. Dynamic capabilities represent the organizational capacity to sense emerging opportunities and threats in the business environment, seize them quickly through appropriate resource allocation and strategic action, and transform business models and processes accordingly. [13] argues that in turbulent, rapidly changing markets, sustained competitive advantage flows not from current competitive position or static resources, but from the organization's capacity to dynamically reconfigure itself as circumstances change. It is proposed here that sensei help executives develop three interconnected organizational capabilities that operate across all three of the lean learning systems:

Sensing is the capacity to recognize emerging problems and opportunities before competitors do. Sensei develop sensing capabilities through Gemba observation and questioning that trains leaders to perceive gaps others miss. By asking "How well are we satisfying customers?" and "Where are we passing on defects?", sensei train leaders to use TPS conditions as diagnostic lenses at operational (System 1), process design (System 2), and strategic (System 3) levels. Over time, this becomes habitual, when leaders develop permanent capacity to sense emerging challenges across all organizational levels.

Seizing is the capacity to act rapidly on identified opportunities. Sensei develop seizing capability through PDCA training and structured problem-solving that compresses decision cycles. Rather than lengthy analysis, organizations with strong seizing capability test hypotheses quickly, learn from results, and adjust, whether addressing operational deviations (System 1), improving products and / or processes (System 2), or reconfiguring strategy (System 3).

Transforming is the capacity to reconfigure the organization as markets change. Sensei develop transforming capability by insisting that organizations periodically question their assumptions at all levels: operational standards (System 1), product and process design logic (System 2), and strategic direction (System 3). The learning-to-learn capability that emerges becomes permanent organizational capacity for evolution.

These three capabilities form a dynamic cycle operating recursively across all three lean learning systems. Sensing identifies gaps at any level; seizing addresses them; and transforming reconfigures understanding. Sensei-facilitated learning aims to

institutionalize this cycle as a permanent organizational characteristic. Organizations that develop these capabilities may build a competitive advantage that is difficult to replicate because it rests on the existence of learning systems and capability development, not on tools and practices that competitors can simply copy.

3 Towards the Scholarship of Sensei-ing: A Scholarly Discipline

The aim of this paper is to propose the Scholarship of Sensei-ing as a distinct scholarly discipline comparable to the Scholarship of Teaching and Learning. The discipline emerges from the recognition that facilitating organizational learning and capability development with the TPS need not remain an informal art or intuitive practice, but can become a theoretically grounded, empirically investigable, and systematically developable discipline.

3.1 What Do Lean Sensei Do?

While sensei-facilitated transformation traces its origins to Toyota's diffusion of TPS thinking across its supply chain and global operations [14], scholarly investigation of this role is still nascent [15], [16]. Paradoxically, practitioners report that sensei practice has shaped successful transformation in organizations for many years, even though academic literature has only recently begun to examine the phenomenon [2]. But what do lean sensei actually do?

[16] suggests that in practice, a lean sensei takes learners to Gemba to see what is actually happening, rather than relying on spreadsheets and false impressions. The sensei discusses real problems in the context of strategic objectives, promotes awareness through concrete exercises based on visual management, promotes thoughtfulness by teaching PDCA, and cultivates a bad-news-first mindset that emphasizes continuous questioning. To maintain continuity, the sensei always pushes learners to take the next step, even when they cannot see it themselves. Sensei recognize that learners often stabilize at comfortable levels of understanding and achievement. Rather than accepting this plateau, the sensei continuously prompts deeper engagement: "What else do you need to understand? What's the next challenge? How could you take this further? Where else in the organization might this principle apply?" This practice prevents the comfortable plateau that organizations often reach and drives continuous development of capability.

These practices are sufficiently specific that they can be named, described, taught, and practiced, which suggests that sensei-ing can be studied systematically rather than treated as an informal art. Conceptually, the practices map onto the three dynamic capabilities identified by Teece. By showing practical examples and using Gemba observation, sensei develop sensing capability when the organization learns to recognize deviations, product and process design problems, and market opportunities others miss. By training PDCA and structured problem-solving, sensei develop seizing capability, and the organization learns to act quickly on identified opportunities. And by pushing to deeper levels of understanding and questioning strategic assumptions, sensei develop

transforming capability, in which the organization learns to reconfigure itself as circumstances change.

Beyond these five practices, sensei work by using TPS and its ideal conditions as diagnostic and pedagogical tools. Rather than treating TPS as a set of operational requirements to be implemented, sensei use TPS conditions as lenses through which to surface where organizational thinking needs deepening. When a sensei observes that an organization is not building quality in - that defects are escaping the process rather than being caught at source - the sensei is surfacing a threshold concept about quality philosophy. The gap between current practice (detecting and fixing defects downstream) and the TPS ideal (preventing defects from occurring upstream) becomes the learning opportunity. By asking "Why do you think defects escape?" and "What does that tell us about our current thinking?" the sensei prompts examination of underlying assumptions about quality, responsibility, and process design.

3.2 Sensei and Consultants: Modes of Intervention

A useful, though not absolute distinction can be drawn between the role of sensei and that of consultants. Schein [20] distinguishes expert modes of consultation, in which the consultant diagnoses and prescribes, from process consultation, in which the consultant builds the client's own capacity to diagnose and solve its own problems. The distinction drawn here therefore concerns the learning role, the relationship, and the mode of intervention, rather than the consulting profession as a whole.

On one hand, in expert-mode engagements, knowledge flows primarily from consultant to client through diagnosis, analysis and recommendations, which may leave the organization reliant on external expertise for the next problem. On the other hand, the sensei role sits much closer to Schein's process mode. Rather than beginning with diagnosis, the sensei takes the learner to Gemba to observe and discuss what they are actually seeing. Rather than providing analysis and recommendations, the sensei asks questions that prompt deeper thinking. Rather than positioning themselves as the expert with answers, the sensei positions the learner as capable of developing understanding through disciplined thinking and engagement with reality. The sensei-executive relationship is therefore based on mutual respect and trust in recognized expertise, not on service provision. The sensei's aim is to develop the learner's capability rather than to solve problems on the learner's behalf.

This distinction enables sensei to give direct, often controversial feedback that is harder to give within a service relationship. A sensei can tell an executive "Everything is no good" or "learn how to do your job properly" because the executive recognizes the sensei's mastery and believes the sensei is invested in the executive's growth. The relationship is sufficiently grounded in trust and mutual respect such that difficult feedback becomes a gift rather than an insult. In short, the emphasis shifts from delivering solutions to developing the organization's capacity to solve tomorrow's problems, independently.

Executives who have worked with sensei report fundamental changes in how they think about their business [2]. Whether such changes are more durable than those

following expert-mode consulting remains an open empirical question for the proposed discipline.

3.3 Establishing the Discipline: Theoretical Foundations, Empirical Questions, Developmental Pathways, and Communities of Practice

Drawing on the SoTL model, a scholarly discipline comprises: (1) coherent theoretical foundations, (2) identifiable empirical questions, (3) developmental pathways for practitioners, and (4) a community of practice. As such, the Scholarship of Sensei-ing establishes sensei-ing as a scholarly discipline as follows:

The theoretical foundations ground sensei practice not in intuition or experience alone but in established educational science and organizational theory about how humans learn complex concepts in organizational contexts. Threshold concepts explain why TPS ideas are difficult to grasp and why conventional tool-based approaches may fail to develop genuine understanding. Problem-based learning explains how sensei facilitate deep understanding through engagement with authentic problems at Gemba. The L-SoLS architecture explains how learning happens simultaneously at different organizational levels and how these levels interact recursively. Dynamic capabilities theory explains why this learning may create sustainable competitive advantage.

The discipline comprises identifiable empirical questions that distinguish it from informal practice. How does sensei-facilitation quality relate to organizational learning outcomes? How do sensei most effectively surface threshold concepts? What determines whether organizations develop learning-to-learn capability? How do sensei decisions to focus on specific TPS conditions relate to organizational readiness for learning at different system levels? How do sensei-facilitated organizations sustain capability development across leadership transitions? These questions orient research and investigation, moving sensei-ing from experience-based craft toward systematic inquiry grounded in evidence.

The discipline also establishes developmental pathways for practitioners. Theoretical study grounds sensei-ing in learning theories and an understanding of TPS as an integrated learning architecture rather than a collection of operational techniques. Supervised practice through apprenticeship with experienced sensei provides guided engagement with actual facilitation challenges, mentoring, and reflection. Empirical inquiry into one's own facilitation involves examining relationships between specific sensei interventions and organizational learning outcomes, investigating systematically what works, what doesn't, and why. Contribution to the scholarly discipline means sensei systematically record their learning, share insights with peers, and contribute to collective advancement of the field. New sensei entering the discipline thereby inherit theoretical foundations and empirical evidence from predecessors, rather than relying on experience alone.

3.4 Boundaries of the Proposed Discipline

The Scholarship of Sensei-ing overlaps with, but is distinct from, several established fields. Lean education research addresses how lean is taught in schools, universities and

learning factories [9]; the object here is the facilitation of learning by executives within their own organizations. Lean leadership research describes the behaviors and routines expected of lean leaders [2], [16]; the Scholarship of Sensei-ing instead focuses on the pedagogy through which such leaders are developed. Organizational learning theory, notably the distinction between single- and double-loop learning [21], explains how organizations learn and maps closely onto L-SoLS Systems 1-3, but does not specify the role of a learning facilitator. Coaching approaches such as the improvement- and coaching Kata [22] offer structured routines for developing scientific thinking, whereas the sensei uses TPS conditions as diagnostic lenses and deliberately surfaces troublesome knowledge. Finally, existing work on the lean sensei [2], [15], [16] describes what sensei do. The distinctive contribution of the proposed discipline is to treat sensei practice, by analogy with SoTL, as scholarship: evidence-based reflection on practice that is theorized, made public and peer-reviewed, so that it can be developed cumulatively by a community of practice.

4 Illustrative Cases: Sensei-CEO Relationships and Dynamic Capability Development

4.1 Research Approach

This is a conceptual paper, and two case studies, Theodo [17], [18] and AramisAuto [19], are used as illustrations that motivate and clarify the conceptual argument rather than as empirical tests of it [23]. They were selected purposively against three criteria: (i) a documented, sustained engagement between a CEO or executive team and a lean sensei; (ii) the availability of detailed, book-length accounts describing both practices and outcomes; and (iii) contexts that differ from the manufacturing settings in which TPS originated (a global technology and software engineering consultancy and a used-car e-commerce business). The data are secondary: [17] and [18] for Theodo, and [19] for AramisAuto. The sources were read in full, and passages describing sensei interventions and organizational responses were coded deductively against Teece's three dynamic capabilities [13], using the sensei practices described in Section 3.1 as a coding frame. Table 1 summarizes the result, separating what the sources report from the author's interpretation.

Two sources of potential bias must be acknowledged. First, the sources were written by participants in the transformations, including the sensei and the CEOs themselves, and are therefore likely to present these experiences favorably. Second, the author belongs to the same practitioner and research network and has co-authored with some of these practitioners [2], [16]. The cases were chosen because they are richly documented, not because they are representative, and no unsuccessful or less successful transformations are included. The cases should therefore be read as illustrations of the plausibility of the proposed mechanism, not as evidence of its effect.

4.2 Theodo: Learning to Scale with Lean

Theodo, a software technology consultancy, scaled from 10 people and \$1M revenue to 700 people and \$100M in just 10 years, while maintaining quality, autonomy, and customer focus. According to the published accounts, as the organization grew, it did not become more hierarchical, more controlling, or more dependent on expert decision-makers. Instead, it became more distributed, more autonomous, and more learning-oriented. Co-founders Benoît Charles-Lavauzelle and Fabrice Bernhard recognized that delivering what clients requested was insufficient - digital delivery needed to be re-framed as a learning system built on visibility, problem-solving, and shared responsibility - and lean sensei were engaged as learning facilitators (including Catherine Chabiron and later Michael Ballé, a lean sensei with over 40 years of experience in lean transformation). This critical shift involved making learning explicitly a leadership responsibility. Managers became accountable not for making decisions or solving problems, but for creating conditions where problems surface, coaching teams through them, and spreading insights across the organization.

Read through the lens of the proposed framework (Table 1), the accounts describe sensing developed through Gemba walks and daily problem-solving routines in which teams surfaced problems; seizing developed through structured, PDCA-based problem-solving and rapid experimentation; and transforming developed through dojos and regular reflection, which led teams to revisit their assumptions about how software should be developed and how clients should be served.

The sources attribute Theodo's ability to scale while preserving agility and quality largely to this learning system. Other factors, such as strong market demand for digital services, access to capital and the founders' own backgrounds, are likely to have contributed as well, and the sources do not allow the contribution of sensei facilitation to be isolated.

4.3 AramisAuto: Raising the Bar with Lean

AramisAuto, a used-car e-commerce platform, faced a troublesome paradox: steady growth but declining profitability. Founder and CEO Nicolas Chartier recognized that consultant-driven lean initiatives were not producing sustainable results and turned to lean sensei Michael Ballé, to learn why. According to the account in [19], the answer was direct: "You are not leading the lean transformation yourself. You can't delegate this to consultants, no more than you can delegate running the business."

This insight catalyzed fundamental transformation in how Nicolas approached leadership and organizational development. Rather than deploying lean tools through consultants, he committed to personal transformation as a lean leader. He articulated this responsibility explicitly: "When you're CEO, your primary responsibility is to learn." This shift from delegating improvement work to personally engaging in Gemba walks, problem-solving, and leadership development can be interpreted as the threshold concept that the Scholarship of Sensei-ing addresses: lean CEOs must become sensei to their organizations.

Nicolas engaged in systematic sensei development through study and apprenticeship under the challenge and guidance of Ballé-sensei. He studied other lean leaders including those from Amazon and Wiremold to understand what distinguished sensei-led transformation from consultant-driven approaches. He engaged directly with senior leaders in gemba observation and problem-solving. This commitment to learning as a leadership responsibility became institutional. At AramisAuto's Donzère plant, a lean system emerged built around flow, quality, and people development. Rather than using reports and recommendations, the organization created conditions where problems surfaced through Gemba observation, systematic problem-solving, and leadership coaching.

Interpreted through the dynamic capabilities framework (Table 1), sensing is associated with the CEO's regular presence at Gemba and continuous questioning of assumptions; seizing with systematized PDCA problem-solving in place of lengthy committee approvals; and transforming with System 3 learning, in which strategic assumptions were periodically questioned and the business direction reconfigured. AramisAuto later completed one of the largest Euronext IPOs since 2019. This outcome is consistent with, but cannot be attributed to, the sensei engagement, since market conditions, digital investment and financing decisions were also clearly important.

4.4 Cross-Case Synthesis and Limitations

Table 1. Illustrative mapping of case evidence to dynamic capabilities: what the sources report versus the author's interpretation.

Capability	Theodo - reported in [17], [18]	AramisAuto - reported in [19]	Author's interpretation
Sensing	Gemba walks; daily problem-solving routines in which teams surface problems	CEO walks the Gemba regularly; asks questions prompting deeper observation; models questioning of assumptions	Sensei questioning at Gemba trains leaders to use TPS conditions as diagnostic lenses
Seizing	Structured problem-solving; rapid experimentation; learning from failure	PDCA-based problem-solving replaces lengthy committee approvals	PDCA training shortens the cycle from problem recognition to action
Transforming	Dojos; reflection on how software is developed and how clients are served	CEO redefines own role ("your primary responsibility is to learn"); lean system built around JIT, quality and people development; strategic assumptions questioned	Leaders repeatedly question assumptions and reconfigure the organization

Read together, the two cases show a consistent pattern: CEOs and executives engaged with sensei as learning partners rather than as providers of solutions, and the accounts describe the development of sensing, seizing and transforming capabilities. This supports the theoretical plausibility of the proposed mechanism.

5 Conclusion

This paper proposes the Scholarship of Sensei-ing as a distinct scholarly discipline grounded in the Scholarship of Teaching and Learning, threshold concepts, problem-based learning, and dynamic capabilities theory. The framework suggests how sensei facilitate organizational learning that develops the sensing, seizing, and transforming capabilities associated with sustained business transformation in uncertain, rapidly changing markets.

The main theoretical contribution is the argument that sensei-ing is not an informal practice or mysterious art, but a practice that can be grounded in established learning theory and management science and studied systematically. The framework offers a possible explanation of why some organizations develop lasting capability through lean transformation while others plateau after implementing tools, and it clarifies how the sensei's mode of intervention differs from expert-mode consulting. It bridges educational theory with organizational development and proposes that TPS can function as an integrated learning architecture for developing dynamic capabilities. These propositions are theoretically grounded but remain to be tested empirically.

Practically, this framework clarifies why sensei development deserves serious investment as central to lean transformation and business competitiveness. It suggests that sensei-ing should be grounded in learning theory and educational science, not merely in operational experience. It suggests developmental pathways for preparing the next generation of sensei-scholars grounded in both TPS mastery and learning theory. For organizational leaders, the framework clarifies that lean transformation is likely to depend on CEO engagement in learning facilitation, not delegation of improvement work to consultants or internal lean departments. The CEO's role becomes one of developing organizational capacity for continuous sensing, seizing, and adapting - not just making decisions or solving problems.

The work, however, has several limitations. Firstly, there are only two cases; both are successful, documented through secondary sources written by participants, and located in a French context in two specific sectors (a global technology and software engineering consultancy and a used-car e-commerce business). No failed or less successful sensei-facilitated transformations were examined, although such cases are likely to exist, for example where executive commitment was not sustained (this kind of counter-evidence is essential for identifying the conditions under which sensei facilitation does or does not contribute to capability development). The applicability of the scholarship of sensei-ing to other sectors, including healthcare and the public sector, also cannot be inferred from this paper. Finally, dynamic capabilities were not measured; the mapping in Table 1 is purely interpretive.

To address these limitations, future research should examine the framework using primary data, including longitudinal and comparative designs that include unsuccessful transformations. In particular, it should investigate the relationships between sensei-facilitation practices and organizational capability development. Do organizations with sensei engagement develop sensing, seizing, and transforming capabilities faster than those pursuing consultant-driven approaches? How do sensei-facilitated transformations sustain capability development across changes in leadership? What developmental pathways most effectively prepare sensei to work across different organizational types and industries? And how does sensei-ing translate from manufacturing to service, healthcare, and public sector contexts?

The Scholarship of Sensei-ing is ultimately about understanding how organizations develop the capacity to learn continuously, adapt to changing circumstances, and create sustained competitive advantage through human capital development. Rather than viewing business improvement as a series of discrete projects or initiatives, the discipline positions lean as a permanent organizational learning system grounded in the philosophy that developing people's capability to solve problems, thinking deeply about their work, and continuously questioning assumptions can create the foundation for sustained success.

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