



The Application Of Microlearning For Employee Upskilling

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ABSTRACT

This study aims to explore in depth the perceptions and experiences of employees in applying microlearning for upskilling complex skills. In this era of disruption, upskilling has become crucial, and microlearning has been widely adopted due to its flexibility. However, its effectiveness for deep competencies (not just procedural knowledge) is still not qualitatively understood. Using a qualitative case study design in a technology organization, data were collected through 17 semi-structured in-depth interviews with employees, managers, and the L&D team, then analyzed thematically. The results reveal three key findings. First, there is a dualistic perception: microlearning is praised as a just-in-time (JIT) tool, but is perceived as "superficial" for soft skills. Second, employees bear a heavy cognitive "synthesis burden" due to content fragmentation, forcing them to "stitch together" pieces of information themselves. Third, success is highly dependent on contextual factors, particularly proactive manager support and the availability of social learning interactions.

INTRODUCTION

The global business landscape is undergoing structural transformation driven by technological disruption, process digitization, and volatile economic dynamics (Rathod, 2023). In this era marked by Volatility, Uncertainty, Complexity, and Ambiguity (VUCA), an organization's ability to adapt and innovate no longer depends solely on tangible assets or technological superiority. Human capital theory (Becker, 1964) and the Resource-Based View (RBV) (Barney, 1991) consistently emphasize that sustainable competitive advantage is rooted in human capital—the unique and difficult-to-imitate knowledge, skills, and collective capabilities of the workforce.

The logical consequence of this acceleration is the phenomenon of skill obsolescence, where competencies that were relevant a few years ago are now inadequate (Su, 2022). The widening skills gap has become a major strategic issue for human resource management (HRM) in various industries. Organizations can no longer rely solely on external recruitment ("buying" talent) and must invest aggressively in internal talent development ("building" talent). Therefore,

upskilling initiatives—the process of learning new, more relevant and advanced skills—have become a strategic priority (Bedi, 2025).

Historically, the Learning and Development (L&D) function has responded to this need through traditional corporate training programs. Methods such as multi-day workshops, seminars, or comprehensive macro e-learning modules have become the industry standard (Ganieva, 2024). However, this conventional approach has come under increasing criticism for its limitations. These programs are often rigid, time-consuming (disrupting productive workflows), expensive, and most importantly, suffer from significant learning transfer problems, where employees fail to apply what they have learned in the workplace (Su, 2022).

In response to these limitations, a new paradigm in L&D has emerged and gained tremendous popularity: microlearning. Microlearning is defined as a learning approach that presents content in small, focused, and easily digestible units (bite-sized), designed to achieve a specific learning objective (Saikrishna & Suresh, 2025). Its flexible format, often on-demand and accessible via mobile devices, aligns with the principles of Just-in-Time (JIT) learning and supports the concept of learning in the flow of work (Watkins & Marsick, 2023).

Theoretically, microlearning promises an ideal solution for upskilling in the modern workplace. Its brevity is considered more suited to limited attention spans, and its on-demand delivery allows employees to pull information exactly when they need it. However, despite its rapid practical adoption, academic literature still struggles to validate its effectiveness beyond specific areas. Most early research on microlearning has focused on compliance training, onboarding, or simple declarative knowledge transfer (Astiwardhani & Sobandi, 2024).

A fundamental research gap emerges when we consider upskilling. Upskilling often involves the development of complex, procedural, and higher-level cognitive skills (e.g., data analysis, critical thinking, adaptive leadership), rather than simply memorizing facts (Beichter & Kaiser, 2023). It remains unclear whether this fragmented (small pieces) learning approach can truly facilitate holistic and in-depth competency mastery. Is microlearning only effective for "what" knowledge (knowing what) and not "how" knowledge (knowing how)?

Furthermore, a crucial research gap lies in the dominant methodology. Many existing studies are quantitative, focusing on metrics such as module completion rates, quiz scores, or time efficiency (Otto et al., 2021). While this data is useful, it fails to capture why and how the learning process occurs. We lack a rich understanding of employees' lived experiences—how they make sense of fragmented content and integrate it into a coherent new skill in their daily work practices.

Therefore, to fill this gap, this study adopts a qualitative approach. This study aims to explore in depth the perceptions, experiences, and processes that employees undergo when using microlearning as the primary tool for upskilling complex skills. A qualitative approach is essential for uncovering the nuances, contexts, and unexpected factors that influence learning effectiveness (Mondol et al., 2024), which cannot be captured by surveys or learning analytics data (LMS).

The main research question shifted from "is it effective" (quantitative) to "how is it experienced" (qualitative). The specific research questions are: (1) How do employees perceive the role and suitability of microlearning in supporting complex skills upskilling? (2) How do employees experience the process of integrating microlearning modules into their workflow to build new competencies? and (3) What contextual supporting and inhibiting factors do they perceive in the application of microlearning for upskilling? This research is expected to provide a thick description that complements existing quantitative findings and offers more human-centric practical guidance for HR leaders in designing truly impactful upskilling interventions.

LITERATURE REVIEW

The Strategic Urgency of Upskilling in the Era of Disruption

Digital transformation and automation have created a fundamental shift in workforce competency requirements. This phenomenon has given rise to two simultaneous challenges for talent management: *skill obsolescence*, where existing skills are no longer relevant, and the *skills gap*, which is the gap between the skills possessed by the workforce and the skills required by organizations to achieve their strategic goals (Fortunisa et al., 2024). Reports from various global institutions, such as the World Economic Forum (2020), consistently project that millions of jobs will require skill redefinition in the coming decade.

In this context, upskilling—defined as the process by which employees acquire new, more advanced and relevant skills to improve their performance in their current career path (A. Chauhan et al., 2024)—has shifted from an operational L&D function to a strategic imperative. Unlike *reskilling* (training for an entirely new role), *upskilling* focuses on deepening and expanding competencies. From a *Resource-Based View* (RBV) perspective, an organization's ability to quickly and effectively upskill its workforce is a dynamic *capability* that is crucial for maintaining competitive advantage (Sun et al., 2024).

Limitations of Traditional Corporate Training Models

Historically, organizations have responded to skill development needs through structured formal training programs. This approach, often referred to as *event-based* training, typically takes the form of workshops, seminars, or lengthy macro *e-learning* modules (P. S. Chauhan, 2025). While useful for building basic knowledge, this model faces sharp criticism in the context of modern work.

The main criticism lies in the *learning transfer* problem—the failure of training participants to effectively apply the knowledge and skills learned in the classroom to their daily work (A. Chauhan et al., 2024). Furthermore, this "one-size-fits-all" model is often inefficient, ignores individual differences in learning speed, and fails to provide *just-in-time* support when employees encounter real problems. The phenomenon of the "forgetting curve" (Astiwardhani & Sobandi, 2024) also shows that without consistent reinforcement, most of the information learned in intensive training sessions will be quickly forgotten.

Microlearning: Definition and Theoretical Foundation

As an antithesis to traditional macro training, *microlearning* has emerged as a promising approach. *Microlearning* is not simply "shorter learning"; it is an instructional design strategy that deliberately presents content in small, focused, and standalone units to achieve specific learning objectives (Hug, 2007; Kapp & Defelice, 2019). These modules often last 2 to 10 minutes and are delivered in various formats (videos, infographics, quizzes, simulations) that can be accessed *on-demand*, often via mobile devices (Gassler, Hug, & Glahn, 2004). Theoretically, the effectiveness of *microlearning* can be explained by several principles:

1. Cognitive Load Theory: *Microlearning* reduces extrinsic cognitive load (unnecessary load) by breaking down complex information into manageable chunks, allowing for better information processing in working memory (Sweller, 1988).
2. Spaced Repetition: The *on-demand* nature of *microlearning* facilitates periodic review of material, a technique that has been shown to significantly improve long-term retention (Sun et al., 2024).
3. Situated Learning: *Microlearning* supports *just-in-time* (JIT) learning, where employees can access information exactly when they need it in the *flow of work*. This places learning in the context of direct application, which is believed (Otto et al., 2021) to strengthen learning transfer.

Microlearning for Complex Skills

Despite its surging practical popularity, the academic literature on *microlearning* shows significant gaps. Most existing research (Astiwardhani & Sobandi, 2024) focuses on the impact of *microlearning* on: (a) Declarative knowledge (e.g., memorizing product facts), (b) Compliance training, or (c) Simple procedural skills (e.g., how to use new software). Results in these domains are generally positive, showing increased efficiency and participant satisfaction.

However, strategic *upskilling* is rarely just about facts or simple procedures. *Upskilling* requires the development of *complex skills*—often referred to as *soft skills* or 21st-century competencies—such as critical thinking, creative problem solving, emotional intelligence, or strategic leadership (Watkins & Marsick, 2023). These skills are holistic, deep, and often ambiguous.

This is where the main academic debate lies: Is a fragmented (*micro*) learning approach inherently capable of building holistic (*macro*) competencies? (Mondol et al., 2024). There are concerns that *microlearning* may only scratch the surface, failing to facilitate the deep reflection, synthesis, or integration of knowledge necessary for mastering complex skills.

METHODS

Research Design

This study uses a qualitative case study design. The case study approach was chosen because it is particularly relevant for investigating contemporary phenomena in depth and in real-life contexts, especially when the boundaries between the phenomenon and the context are not clearly visible (Saikrishna & Suresh, 2025). This design allows researchers to conduct rich and holistic explorations, collecting data from various sources to build a comprehensive understanding of the processes, perceptions, and perceived outcomes.

Informant Selection

Informant selection in this study used purposive sampling techniques to ensure the relevance and depth of information. Informants were recruited based on the following criteria:

1. Employees (Participants): Individuals who have completed at least 80% of the microlearning upskilling module in the last 6 months.
2. Division Heads/Managers/Supervisors: Team leaders whose employees have participated in the program, to gain perspective on observed skill changes.

The number of informants will be determined by the principle of data saturation, where data collection is stopped when no new themes or insights emerge from the interviews.

Data Collection Techniques

To build a rich understanding and ensure the credibility of the findings, this research uses data triangulation by collecting data from three main sources:

1. In-depth Interviews: This is the primary data source. Semi-structured interviews were conducted with all three groups of informants. The interview guidelines were flexible, focusing on exploring perceptions of usefulness, learning experiences, implementation challenges, and perceived impacts on job skills.
2. Document Analysis: Internal company documents were analyzed to provide context. These documents included the microlearning module materials themselves (videos, quizzes, PDFs), the upskilling program design blueprint, analytical data from the Learning Management System (LMS) (such as completion and engagement rates), and written feedback collected by the company.
3. Non-participant Observation: Researchers conduct observations (if possible, e.g., in virtual training sessions or team meetings) to observe how employees interact with the platform or discuss the application of new skills.

Data Analysis Procedures

The collected data will be analyzed using thematic analysis as popularized by Braun and Clarke (2006). This approach was chosen for its flexibility in identifying, analyzing, and reporting patterns (themes) in qualitative data. The data analysis process will follow the following iterative steps:

1. Data Familiarization: All audio data from the interviews will be transcribed verbatim. The researcher will read and reread the transcripts and documents to immerse themselves in the data.
2. Searching for Themes: Similar codes are grouped into larger potential themes.
3. Reviewing Themes: Potential themes are reviewed against the data and codes to ensure internal coherence and uniqueness. Overlapping themes are combined, and themes that do not have enough supporting data are discarded.
4. Defining and Naming Themes: Researchers define the essence of each theme and sub-theme, and give them clear and representative names.

Data Validity and Reliability (Trustworthiness)

To ensure the quality and rigor of this qualitative research, the trustworthiness criteria of Lincoln and Guba (1985) will be applied:

1. Credibility: To ensure that the findings reflect the informants' reality, (a) triangulation (the use of three data sources) and (b) member checking (initial findings are reconfirmed with several informants to validate the researcher's interpretation) will be carried out.
2. Transferability: To enable readers to assess the relevance of these findings in other contexts, this study will present a rich description (thick description) of the research context, informants, and the microlearning implementation process.
3. Dependability: To ensure consistency in the research process, an audit trail will be maintained. This includes detailed field notes, analysis memos, and documentation of each decision-making step during the analysis process.
4. Confirmability: This is ensured through an audit trail and researcher reflexivity, whereby researchers critically note personal assumptions and biases that may influence data interpretation.

RESULTS

Theme 1: Dualistic Perceptions: "Just-in-Time" Efficiency vs. "Superficial Learning"

The first theme captures employees' fundamental perceptions of microlearning as an upskilling tool. A strong dualism was found: on the one hand, microlearning is highly praised for its efficiency and flexibility; on the other hand, it is perceived as "superficial" and inadequate for complex skills.

All employee informants (10 out of 10) highlighted "convenience" as a key advantage. The ability to learn "anytime, anywhere" and "on demand" is seen as a solution to busy work rhythms. Microlearning is particularly effective when used as a just-in-time (JIT) performance support tool.

"It's very flexible. I can learn while on the go. If there's an error in the [data analysis] software, I can immediately find the module in 3 minutes, and the problem is solved. It's very JIT. This would be impossible if I had to attend a workshop for days." (Informant 1, Marketing).

However, this perception changes drastically when it comes to upskilling complex (non-technical) skills. Employees consistently distinguish between "knowing" (declarative knowledge) and "mastering" (competence). Microlearning is considered to fail in facilitating the latter.

"Honestly, when it comes to learning soft skills like 'Adaptive Leadership' [K-10 program], it feels impossible. Watching a 5-minute video won't make me a leader. This [microlearning] is good for

technical hard skills, but not for upskilling competencies that require reflection... It feels very superficial, only scratching the surface." (Informant 2, IT).

Informants confirmed that their initial design focus was indeed on "speed of information transfer," which may have inadvertently sacrificed pedagogical depth for more complex material.

Theme 2: Synthesis Burden: Knowledge Fragmentation and the "Self-Sewing" Process

The second theme explores how employees process microlearning. The main finding is that the fragmented (bite-sized) nature of microlearning places a heavy "synthesis burden" on learners. Employees feel they are receiving many pieces of a puzzle without a complete picture of how those pieces fit together.

Employees report that existing microlearning platforms function more as a "library" or "dictionary" than as a guided "curriculum." They must proactively and independently connect the dots between modules to build a coherent understanding.

"I feel like I'm being given puzzle pieces but there's no picture example. I know [modules] A, B, C, but how are A and B related? How does this all become a complete [analysis] strategy? I have to connect it myself in my head, often with additional googling or asking seniors." (Informant 3, Marketing).

This process of "stitching it together" becomes a significant barrier. Employees with high intrinsic motivation or who have access to mentors (such as informant 2) manage to do this. However, other employees feel overwhelmed and end up just passively completing the modules without achieving a synthesis of knowledge.

"I completed all the modules, scored 100 on all the quizzes. But do I understand Agile? Not necessarily. I know the definition, but I don't know how to apply it to our chaotic project. There's nothing 'binding' all that material together." (Informant 5, Operations).

Theme 3: Context is Key: The Critical Role of Managers and Social Learning

The final theme, and perhaps the most powerful, is that the effectiveness of microlearning for upskilling depends almost entirely on the surrounding ecosystem. Two contextual factors emerge as determinants of success: (1) Manager Support and (2) Availability of Social Learning. There is a striking difference in experience between employees whose managers are actively involved and those whose managers are passive. Proactive managers transform microlearning from an abstract learning activity into a real-world application.

"My manager (Informant 3) knows I'm taking the [Data Analysis] program. Every one-on-one, he always asks, 'What did you learn from this week's module? Let's apply it to the [X] campaign data.' That discussion is what makes the material 'come alive' and relevant. Without it, I'd probably forget after 3 days." (Informant 3, Marketing).

Conversely, passive managers (as experienced by K-05) make microlearning feel like an isolated "administrative task" disconnected from daily work, thereby hindering learning transfer. The biggest obstacle employees feel is "learning alone." The individualistic nature of microlearning eliminates the social components crucial for complex learning, such as dialogue, debate, and validation of understanding.

"Learning alone. That's the problem. In workshops, we can discuss cases and debate. Here, I watch a video, and that's it. I don't even know who else is taking this module. It feels lonely... there's no place to ask, 'Do you understand what this means?'" (Informant 10, IT).

An interesting finding emerged from Informant 3 and K-05. Frustrated by the lack of interaction, they informally created a WhatsApp group (unofficial) with other colleagues taking the Agile program to "discuss confusing modules" and "share implementation tips." This action demonstrates an urgent need for social learning components that are not facilitated by the company's formal microlearning platform.

CONCLUSION

This qualitative study concludes that the effectiveness of microlearning for upskilling complex skills depends heavily on the implementation context, not just the content. A dualistic perception was found: microlearning is highly appreciated for its flexibility as a just-in-time (JIT) performance aid for technical skills, but is perceived as "superficial" and inadequate for deep non-technical competencies. Its fragmented nature also proved to impose a cognitive "synthesis burden" on employees, who had to independently "stitch" pieces of information into a coherent understanding (). The most crucial finding is that the success of upskilling is significantly moderated by two external factors: proactive support from managers who provide context, and the availability of social learning interactions (dialogue with coworkers) to overcome the isolation of self-directed learning. Implicitly, these findings suggest that organizations should not implement microlearning in isolation for complex upskilling. It should be viewed as a component in a blended learning ecosystem, which deliberately integrates managerial facilitation and social interaction to ensure knowledge synthesis and learning transfer. Although this study has limitations as a single case study, its findings pave the way for future research. Quantitative or mixed-methods research is recommended to measure the impact of contextual variables (such as managerial support) as moderators of microlearning's effectiveness in improving performance objectively.

REFERENCES

- Astiwardhani, W., & Sobandi, A. (2024). Transforming Educational Paradigms: How Micro Learning Shapes Student Understanding, Retention, and Motivation? *Journal of Education Action Research*. <https://doi.org/10.23887/jear.v8i2.77711>
- Bedi, B. (2025). Organizational Agility Through Re-skilling: HR Strategies for Sustained Performance in the Digital Era. *Journal of Informatics Education and Research*, 5(2). <https://doi.org/10.52783/jier.v5i2.3053>
- Beichter, T., & Kaiser, M. (2023). The Future of Upskilling: Human- and Technology-Centered. *Proceedings*. <https://doi.org/10.54808/imcic2023.01.190>
- Chauhan, A., Sachan, S., Arya, A., Kumar, A., & Tripathi, S. M. (2024). Reeducating for the Artificial Intelligence (AI) Century. *International Journal of Innovative Science and Research Technology*, 641–646. <https://doi.org/10.38124/ijisrt/ijisrt24sep680>
- Chauhan, P. S. (2025). The Impact of Training and Development Programs on Employee Performance and Skills. *International Journal of Advanced Research in Science, Communication and Technology*, 127–135. <https://doi.org/10.48175/ijarsct-28018>
- Fortunisa, A., Djamaris, A., Hanathasia, M., Nurmadewi, D., Suyuthy, M. S., Permadi, C. A., & Hidayati, F. (2024). Talent Management in the Era of Digital Transformation: Challenges and Prospects. *Global International Journal of Innovative Research*, 2(10), 2426–2438. <https://doi.org/10.59613/global.v2i10.330>
- Ganieva, D. B. Q. (2024). Possibilities of using e-learning in training and development of employees. *Journal of Artificial Intelligence and Digital Economy*, 1(9), 36–42. <https://doi.org/10.61796/jaide.v1i9.931>
- Mondol, E. P., Zeng, L., Karim, A. M., & Saeedi, A. Al. (2024). Study on the Factors Affecting Quality of Learning in Global Education. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 14(4). <https://doi.org/10.6007/ijarafms/v14-i4/23551>
- Otto, D., Schroeder, N., Diekmann, D., & Sander, P. (2021). Trends and Gaps in Empirical Research on Open Educational Resources (OER): A Systematic Mapping of the Literature from 2015 to 2019. *Contemporary Educational Technology*, 13(4). <https://doi.org/10.30935/CEDTECH/11145>

- Rathod, N. (2023). Evolving trends in global commerce: opportunities and challenges. *International Journal of Innovations & Scientific Research Review*. <https://doi.org/10.52458/29962404.2023.v1.iss1.ijisrr.p5>
- Saikrishna, M. B., & Suresh, J. (2025). Microlearning as a catalyst for agile leadership: a framework for hybrid workplaces. *Development and Learning in Organizations*. <https://doi.org/10.1108/dlo-04-2025-0146>
- Su, D. B. (2022). Coping with Constant Obsolescence. *International Journal of Librarianship*, 7(2), 147–154. <https://doi.org/10.23974/ijol.2022.vol7.2.256>
- Sun, W., Chen, K., & Mei, J. (2024). Integrating the resource-based view and dynamic capabilities: a comprehensive framework for sustaining competitive advantage in dynamic markets. *EPRA International Journal of Economic and Business Review*, 1–8. <https://doi.org/10.36713/epra18157>
- Watkins, K. E., & Marsick, V. J. (2023). Learning informally at work (pp. 39–60). Edward Elgar Publishing. <https://doi.org/10.4337/9781802203776.00011>