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**ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER**

## OPTIMISING EMPLOYEE DEVELOPMENT PROCESSES: PERCEPTIONS OF MICROLEARNING AS AN INNOVATIVE SOLUTION

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**Abstract:** *The author conducted a systematic literature review to emphasize the researched topic's current trends and related historical development of the key terms. To address the determined research gap, a quantitative approach was employed. The author primarily used a questionnaire survey to gather viewpoints from training participants. This study explores the integration of the microlearning trend into employee learning and development processes. It aims to better understand the attitudes towards microlearning utilization of the current training participants. Furthermore, it seeks to determine the practical pillars associated with microlearning adoption within organizations. The research confirmed that training participants have diverse associations with microlearning, which current businesses can leverage to structure succeeding learning content. These associational benefits can support current businesses with a microlearning formation and a better understanding of relevant implementation prerequisites. This study explores a rarely covered topic, that is addressing a research gap within the European context. The exploration of microlearning significance, its related aspects, and learners' feedback offer valuable understandings, that provides a number of outcomes to contribute to theoretical and empirical wisdom of this research.*

**Keywords:** *microlearning, development, learning, training, employee*

**JEL Classification:** *M53, M15, O33*

### INTRODUCTION

In nowadays rapidly changing competitive area, it is essential to have up-to-date employee knowledge. Hence, learning and development enable employees to adapt to industry changes and provide them with the skills to understand new technologies, regulations, and market trends (Canonic et al., 2018). Varma et al., 2022 notes that training activities can assist employees in maintaining employability by developing relevant skills. Employee development can support a staff with advancing their career

opportunities by offering professional prospects in the job market (Varma et al., 2022). Furthermore, employees can become more competitive by cultivating new skills and knowledge (Ostin, 2023). Employee learning and development is a long-term process, that usually delivered through various training programs (Trávníčková et al., 2023). The standard form of corporate development is on-the-job training (Ahadi & Jacobs, 2017). This form of the training is provided by mentors and is mainly tailored to the employee's specific requirements concerning their job activities (Alipour & Ghsemi, 2023).

A key term "training" is possible to characterize as a short-term activity, that contributes to the long-term development goals of the company (Maršíková & Šírová, 2015). Formal learning is an essential component to provide employees with the knowledge and skills needed to succeed in their occupations (Deutscher & Braunstein, 2023). Nevertheless, diverse global circumstances and current trends significantly affect definitive forms of on-the-job formal employee learning (Mazurchenko & Zelenka, 2022). As a result, employee learning and development forms, including the methods used, are becoming more technology-oriented and flexible (Razbornik & Todosijevic, 2024). Hence, different authors are identifying new technology-oriented training methods to enhance employee learning processes (Chung & Huang, 2022). One currently investigated trend is microlearning, which offers several benefits for employee development.

This research aims to explore the integration of microlearning. The study is remarking on its lack of systematic implementation and examination within existing literature and practical applications as well. While there is a general outlook that microlearning delivers more advantages than traditional learning methods, a significant gap exists in understanding how this trend can be systematically utilized to maximize learning potential within current businesses. The primary goal of this research is to systematically examine the aspects of microlearning. Furthermore, this research aims to theoretically address the current research gap and practically understand training participants' viewpoints on this learning format. This research is investigating how this learning method can be effectively combined to improve learning results for employees and enterprises simultaneously.

## **SYSTEMATIC LITERATURE APPROACH**

In nowadays rapidly changing competitive area, it is essential to have up-to-date employee knowledge. Due to the reasons noted above, it is possible to identify specific trends within the employee development and work-based learning (Cai & Moallem, 2021). These trends are appearing in the middle of the rapidly changing business landscape and the increasing digitalization in different industries (Labus & Lukić, 2024). Thus, at this stage, is possible to identify new conceptions and approaches known as microlearning (Sung et al., 2023). This new form of learning emerged as a concept primarily focused on individual learning needs and company straightforward short-term goals (Buchem & Hamelmann, 2010). Nevertheless, various authors define the term "microlearning" in different ways. Therefore, it is necessary to focus on details and explore the current reviews of this key term to gain a complete understanding of its substance and related aspects as well. The Table I, presents the historical development of the term "microlearning". This table aids in enhancing understanding of

the implications of previously formulated microlearning concepts and the influence of contemporary trends over decades, which have shaped the development of microlearning perceptions.

**Table 1.** Comparison of Microlearning and Macrolearning

Period	Author	Key Findings and Description
1963	Correa	The author established several correlations between economic principles and development programs. Correa (1963) defined "microlearning" as the acquisition of simple skills and competencies by individuals following specific instructions.
2010	Buchem and Hamelmann	The authors defined a company orientation on the minimalization of learning content, utilized during the employee learning and development process. This approach characterizes the development of microlearning approach.
2021	Minichiello et al.	The authors characterized microlearning as a combination of various content types, including text snippets, video segments, flashcards, and short tutorials, enabling the utilization of microcontent for effective training purposes.
2023	Sankaranarayanan et al.	The authors highlighted the main characteristics and features of microlearning, such as immediate feedback and high-level interactions, aimed at enhancing learning efficiency.

**Source:** Author own elaboration

The table presented above illustrates the historical development of the microlearning term. It is evident from this table that microlearning is not a relatively new trend, as authors in the 20th century already explored (Correa, 1963). However, despite its presence several decades ago, the main development of this principle has occurred in the current century, with a focus on various features and characteristics of microlearning. Moreover, with the development of high digitalization, the directions of this form has undergone a more rapid evolution (Melnychenko et al., 2021). Most current authors are interconnecting microlearning with technology development and the importance of those new tools for effective training execution (Minichiello et al., 2021). Based on the above-stated microlearning definition, it is possible to compare it with the term macrolearning. Macrolearning activities encompass probabilistic aspects and their associated consequences on a larger scale. In terms to better understand the main difference, the author decided to create a comparison Table 2. It is possible to explain the differences between microlearning and macrolearning quite easier by contrasting similar features of both in the matrix. The descriptions and definitions of these characteristics is based on the literature review and research conducted by various authors in the past to ensure accuracy and comprehensiveness.

**Table 2.** Comparison of Microlearning and Macrolearning

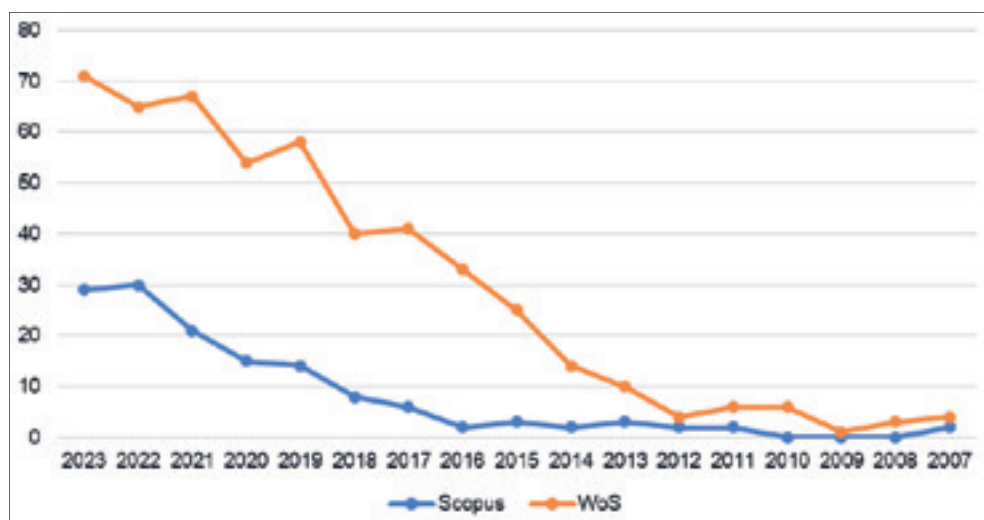
Characteristic	Microlearning	Macrolearning
Scope	Concise learning modules designed to enhance specific skills.	Wider-ranging subjects with a focus on long-term perspectives.
Duration	Shorter modules	Longer duration

Content Type	Compact learning modules targeting specific skills or competencies.	Expansive content, broadening learning objectives to encompass multiple activities and goals.
Learning Object	Learning objectives are addressed in each micro-unit.	Wider-reaching learning objectives with a focus on long-term outcomes.
Flexibility	Provides agile flexibility to meet ad-hoc demands and shorter-term goals.	Comprehensive coverage of multiple topics with limited flexibility for accommodating requests.
Digitalization presence	Growing demand for digitalizing content to facilitate flexible usage in.	Digitalizing content is not always necessary.
Evaluation	Tasks are evaluated frequently to provide flexible feedback delivery.	Structured evaluation of specific development activities.

**Source:** Author own elaboration

Indeed, the described historical development of microlearning key term provides valuable insight into the transformation of this learning formats. Furthermore, comparing microlearning with macrolearning offers a better illustration of the various forms and approaches within microlearning. However, to better emphasize the essence of microlearning, it is necessary to conduct a deeper analysis of research trends.

To facilitate this deeper analysis, the author has chosen to analyse several research trends within the publication databases, specifically utilizing data from Scopus and Web of Science databases. Based on the researched data, it would be possible to identify current publication trends from the perspective of several areas. These include number of publications, publication trends by country and research areas. The author opted to search both databases using abstracts, titles, and keywords linked to the phrase “microlearning.” Additionally, secondary term use “micro-learning” provides a broader scope for exploration of relevant research as well.



**Figure 1.** Number of publications (microlearning) in thousands

**Source:** Author own elaboration based on databases WoS and Scopus

By examining above stated terms in different databases, the author should be able to have a better understanding of the current trends related to the microlearning. This strategy enables the identification of relevant studies and provides a deeper understanding of the topic from different perspectives.

The Figure 1, illustrates the number of articles focused on the concept of “microlearning.” This graph illustrates data collected from both the Scopus and Web of Science databases. In Scopus, a total of 149 publications have been identified, with the earliest two publications dating back to 2007. The Web of Science database contains 526 publications in total. In comparison, the earliest mention of microlearning in this database dates to 1983, with other notable instances occurring in 1996, 2003, and 2005. However, it is important to note that only four articles were published during these years (one per year), which the author of this research deemed as outliers and thus excluded them from the overall analysis. The most rapid increase in publications was observed in the Web of Science database in 2015. During this period, there was a quick rise in the number of published research papers. Within the Scopus database, this increase was identified in 2016. Nevertheless, it is important to note, that in 2021 for Web of Science and 2022 for Scopus was identified sudden decrease in publications in both databases, compared to previous periods.

The research areas yielded similar results and as a result highlighted a potential research gap for future investigations. In Web of Science, approximately 45% of the entire publications were prepared within the Computer Science field. In the Scopus database, this area of research comprised about 36% of the entire publications. These findings underscore the theoretical research conducted in this work, as several authors have interconnected the development and role of microlearning with an active use of digital technologies (Sankaranarayanan et al., 2023). Simultaneously, a potential research gap arises within the Business and Management areas. In the Web of Science database, only 4% of all publications were focused on this research area, while in the Scopus database, a comparable number of 3% of publications were related to Business and Management subjects. Hence, in total, only 32 research articles focused on the field of Business and Management, that have been published across both databases. Delving into the regions and countries where these research articles were published is imperative. In the Web of Science database, the most frequent publications on microlearning developed by the USA (20% of all research articles) and China (17% of all research articles) research. Germany emerged as the most published country with a total number of 30% of publications about microlearning in the Web of Science database. However, the German figures should be demonstrated within the total number of publications, which amounted to just 20 articles over 18 years. Regarding the geographical allocation, North America and Asia had the highest number of articles focusing on the microlearning topic. In the Web of Science database, only 26% of all articles were from the European region. The Scopus database confirmed similar findings, which reported 23% of articles from Europe. These findings suggest a potential space for further research, due to the fact, that European businesses have a significant potential to use this form of learning.

## METHODOLOGY

The literature review in the previous section highlighted a notable research gap: the need for microlearning studies on the European continent, especially in manage-

ment and business. Therefore, the author considered it critical to conduct a step-by-step investigation into diverse aspects of microlearning. The author decided to conduct a descriptive study to achieve the above-stated objectives. Thus, it was necessary to collect detailed information about participants' associations with the primary benefits of microlearning. This step examines their attitudes towards microlearning and how learners perceive its advantages. The study also seeks to understand the extent to which participants believe microlearning can enhance their skills and knowledge. Afterward, the author analysed the gathered results and proposed related conclusion based on the received outcomes.

To address the research gap, the author decided to distribute a questionnaire survey to training participants within the automotive enterprise in the Czech Republic. The final sample consisted of 108 respondents. The response rate was represented by 68 returned surveys. The majority of respondents (39 individuals) were from Central Europe. Other 16 responses were collected from Eastern Europe and 7 from other parts of Europe. The remaining respondents identified themselves from other parts of the world, including South and North America and Africa. Based on these results, it is obvious that research focuses mainly on the European perspective. Additionally, participants were represented across different age groups, starting from 19 years and finishing by 60 years old or older. However, the most of respondents chose their age within the 25-29, 30-34, and 40-44 age ranges.

To collect related data and learners' viewpoints, the author distributed a questionnaire survey to all training participants before the fundamental training, oriented on the product portfolio and services. Stated survey was consist of closed questions with multiple answers and 7-point Likert scales were used to understand respondent's attitude towards the microlearning. To ensure that all related questions were comprehended correctly, the author supplied a clear brief about the research goal verbally (before the training activity) and contently within the questionnaire, including a description of the key terms utilized within the questionnaire survey. The survey was prepared using the Microsoft Forms tool and subsequently distributed.

It was necessary to propose relevant research questions (RQs) related to this topic. The RQs were stated as follows:

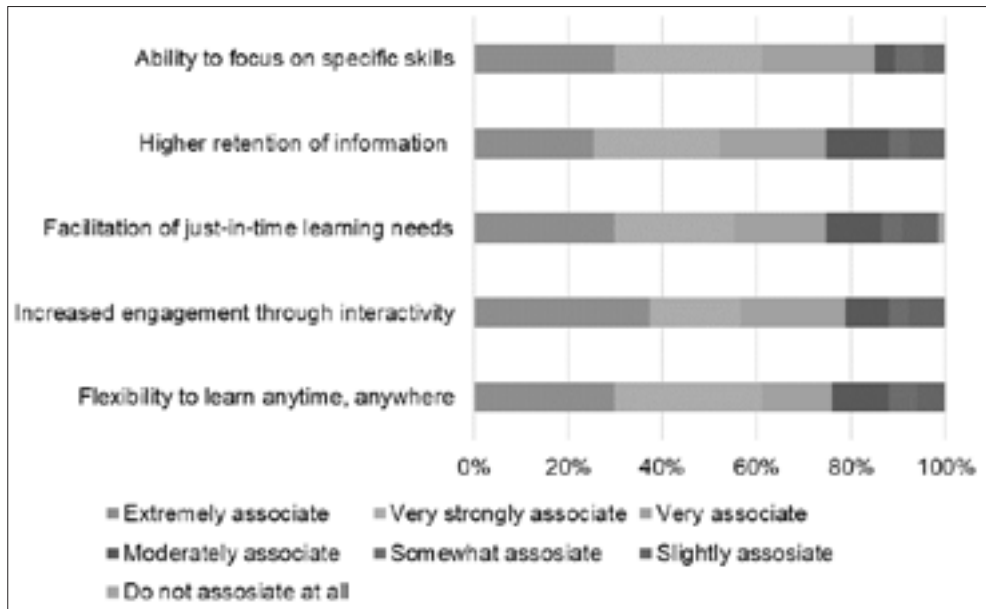
- RQ1: What are the benefits of microlearning as perceived by training participants for training participants?
- RQ2: How do training participants associate specific benefits with motivation to utilize microlearning during the development processes?

By addressing these RQs, the study aims to provide a deep understanding of how employees in the European context consider microlearning.

## RESEARCH RESULTS

Within the primary research, the author focused on five fundamental benefits related to learners' engagement and motivation with microlearning. These elements were partly proposed based on the previous research, which provided a valuable foundation for subsequent practical implementation (Lapteva et al., 2019). Figure 2. demonstrates the primary outcomes of the questionnaire survey conducted by the author. According to the presented results, participants in various forms positively evaluate most of the

microlearning associations stated below. Demonstrated outcomes within the Figure 2. are summarized based on the participants responses and incorporated into one figure in terms to better demonstrate the overall perception and learner's viewpoint. The utilized verbal 7-Likert scale is supporting to better understand the level of association with microlearning and allowing participants to express their point of view in more consistence way.



**Figure 2.** Association of the following benefits with microlearning

**Source:** Author own elaboration

According to the results, increased engagement through interactive content is the most valuable microlearning element that has been positively evaluated by training participants. This association with microlearning has 37% of “extremely associate” with the highest percentage among the observed elements. Flexibility to learn anytime also represented positive results. Within this element 31% of participants expressed “Very strongly associate” and 30% declared “Extremely associate” with this element. The ability to focus on specific skills was another highly evaluated element, with 31% “Very strongly associate” and 30% “Extremely associate” results. For higher retention of information, 27% of participants desired “Very strongly associate,” and 25% of them “Extremely associate,” indicating that learners consider microlearning enables them to retain information better than a conventional form of the development process within their organization. Nevertheless, it is possible to identify fewer positive consequences related to the training participants’ associations with microlearning engagement and motivation to use it. For instance, 12% of participants “moderately associate” with the flexibility of microlearning. This signifies that while some participants recognize the benefit of flexible learning schedules, a significant part needs to find a convincing basis to engage with microlearning. Similarly, 13% of participants “moderately asso-

ciate” with higher retention through microlearning utilization. This signifies, that some recognition of microlearning’s potential to improve information retention exists. However, it is not the strongest motivator for wide range of participants during the learning and development phase. Another crucial aspect is just-in-time learning. This element was considered a less positive association by participants, as shown in Figure 2. The research results indicate that participants do not universally consider this element as a critical factor in their motivation for microlearning.

## DISCUSSION

These mixed perceptions emphasized the need for further research into tailoring microlearning to learners’ professional development demands. Understanding the subtleties is critical to making microlearning approaches as effective as possible in enhancing training outcomes (Wang et al., 2020). By reviewing formerly published studies and adopting a systematic literature review approach, the author focused on specific aspects of microlearning more effectively. A substantial research gap about the usage of microlearning in Europe was ascertained by the literature reviewed. Further research in this area is needed. Besides, the literature review revealed a precondition to focus on determining any possible use of microlearning within management and business areas. The results from this questionnaire survey provide a foundation for understanding how microlearning can be effectively integrated and utilized in similar contexts during the learning and development processes in business areas. It also enables the identification of learners’ preferences in the automotive business.

The author focused on five benefits and their associations with microlearning to better understand learners’ perceptions of these new digital forms of corporate learning. According to the results, participants positively marked almost all explored benefits. This may indicate that the respondents recognized a great variety of the microlearning advantages. The most related benefit was increased engagement due to availability of interactive parts within the educational element. Research respondents confirmed that microlearning associational benefit because current microlearning solutions provide a wide range of interactive elements, that are increasing learners’ engagement (Isibika et al., 2023). In this regard, participants are increasingly driven to self-learning and professional development in organizations through interactive digital solutions. These forms of learning are more attractive and valuable because they propose educational content in a more user-friendly way, facilitating better participant understanding. The research confirmed this statement even with regard to respondents’ diversity, which varied from the youngest (19 years old) to older (55-59 years old) generations. Most respondents indicated that interactivity was one of the critical advantages of microlearning despite variations in age groups. The research results confirmed the relevance of interactivity for training effectiveness. Understanding the interactivity issue may assist in designing more effective training programs for a diverse workforce (Trávníčková et al., 2023).

The other valuable benefit of microlearning solutions is flexibility. With shorter learning content, learners are better able to balance work and skill development (Choudhary & Pandita, 2024). This approach allows them to find the optimal balance between professional and self-development activities. This flexibility benefits employees who must integrate continuous learning into their busy agendas. Microlearning



fully supports the employees in adapting their learning possibilities to their workforce environment. Microlearning is not a substitute for broader digital learning forms like eLearning. Instead, it complements them by providing quick and flexible learning opportunities. Microlearning improves eLearning and other digital forms of corporate learning by offering targeted, straightforward learning knowledge. It addresses learning gaps and supports employees' skills. This immediate applicability is a significant advantage of the microlearning solution for current businesses within the Europe. The flexibility of microlearning also supports personalized learning paths. Individuals can progress at their own and focus on areas, which are the most relevant for their work activities (Choudhary & Pandita, 2024). This statement was also confirmed by the conducted survey. The majority of the training participants positively evaluated the benefit of focusing on specific skills during the learning process. This individualized approach increases staff engagement and motivation. Microlearning also improves organizational learning by enabling the ongoing adjustment during the learning path. Employees that participate in continual learning can share their experience and knowledge with other colleagues. This step fosters a collaborative environment among the organization. Moreover, this relationship has the potential to increase the organization's creativity and problem-solving capabilities as well.

Continuing the discussion above, the author explored other researched benefits, including higher information retention with shorter learning sessions and the ability to enable the concepts for just-in-time learning. Participants perceived these benefits positively; there was a slight decline in their enthusiasm compared to other advantages. These benefits are also significant for organizations and were uncovered through a systematic literature review approach. Microlearning solutions offer an exceptional opportunity to develop specific skills in a just-in-time form. Unlike the formal and informal approaches to learning, which require more structured and time-intensive preparation, microlearning implementations may be easy to process and flexible in terms of adjustments. What makes most of the difference in nowadays enterprise is the higher level of information retention through these short learning courses. In that way, specific knowledge could be tailored to the needs of the enterprise and distributed efficiently among learners (Sung et al., 2023). However, applying microlearning solutions in this direction assumes several risks at the same time. One of those risks is a transformation of microlearning into a simple newsletter on the company's activities. To avoid this, companies should adopt a systematic and structured approach towards microlearning implementation. Such an approach will ensure that microlearning serves its purpose in effective skill transfer.

## CONCLUSION

Microlearning solutions provide supportive opportunities to learn and grow for nowadays European enterprises. But it is still crucial to keep a structured approach toward this new form of employee development. Getting more insight into how learners see perceptions can help businesses make their training strategies more efficiency. This research unveiled a critical literature gap and evolved a valuable space for further investigation and contributed to theory and praxis. This study provides critical outcomes regarding participants' perceptions of microlearning. Nevertheless, it has certain limitations, which is essential to determine. Firstly, this research underscores the gap in

the current literature. Secondly, this study explores microlearning perspectives using a relatively small sample from one enterprise. Hence, it is possible to determine, that this fact may limit the generalizability of the results. Based on the stated above limitations, the following research should focus on a broader scope of respondents, including multiple enterprises exploration. It is also necessary to investigate the perceptions of current businesses regarding the utilization and applicability of microlearning. Future studies can offer more generalized and complete results applicable to contemporary business contexts. Discussions from this study have drawn essential insights from the training participants' perceptions and have thus widened directions for further research on exploring newer dimensions and advocating for the practicability of microlearning in the business learning domain.

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