Adapting to the Workforce: How Microelectronics Engineers Overcome Knowledge Gaps

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Abstract

Engineers entering the microelectronics industry often encounter significant gaps in their knowledge, skills, and abilities (KSAs). These gaps, frequently insufficiently addressed through formal education or internships, present challenges in adapting to the technical and organizational demands of their roles. This study explores the information-seeking strategies employed by these engineers to bridge these gaps, highlighting methods such as direct and indirect mentoring, self-directed learning, and collaborative problem-solving. Additionally, the research examines how workplace organizational socialization, facilitated through relationships with coworkers, management, and mentorship, supports engineers in meeting organizational expectations. The findings emphasize the critical role of fostering supportive learning environments, demonstrating how targeted onboarding strategies and mentorship initiatives can enhance confidence, adaptability, and long-term professional success. These insights offer valuable guidance for organizations in high-stakes industries like microelectronics to improve onboarding practices and workforce integration.

Keywords

Organizational Socialization, Information Seeking Behavior, Newcomer Adjustment, Engineering, Workplace Learning

Introduction

As the world becomes increasingly interconnected, so do economies and manufacturing processes. While globalization has driven numerous innovations, it has also introduced unforeseen challenges. The COVID-19 pandemic starkly highlighted the vulnerabilities of these interdependent production systems, causing widespread disruptions for both consumers and producers. One of the most significant global challenges was the chip shortage, which deeply impacted the microelectronics engineering industry [14]. Microelectronics are vital components in a wide range of industries, powering products like cars, computers, phones, and countless other devices [15]. These components are especially crucial in sectors, where their reliable availability directly influences national security.

As of 2023, nearly 80% of global chip manufacturing occurred in Asia, with countries like China, South Korea, Japan, and Taiwan dominating production [16]. Recognizing its heavy reliance on overseas supply chains, the U.S. launched the CHIPS and Science Act in 2021. This initiative aimed to bolster domestic semiconductor manufacturing, secure supply chains, and enhance economic and national security [13]. By 2024, this act had already led to significant investments in semiconductor manufacturing, workforce training, and research, demonstrating the government's commitment to reclaiming leadership in this critical industry [16].

As the U.S. and other countries invest in rebuilding chip supply chains, the demand for skilled professionals in the microelectronics industry has intensified. Engineers entering the microelectronics workforce face unique challenges, including rapidly evolving technologies and the need to integrate into high-stakes organizational environments. Onboarding is critical in this context, as it ensures that these professionals can quickly bridge knowledge gaps, adapt to technical and operational demands, and contribute effectively to production goals. In industries like microelectronics engineering, where precision and security are paramount, effective onboarding directly supports both organizational success and economic and national security objectives.

This study aims to explore how engineers entering the microelectronics industry adapt to these challenges, focusing on their information-seeking behaviors and organizational socialization processes. By examining these dynamics, the research provides insights into how technical professionals navigate and thrive in a rapidly changing and high-stakes environment, offering practical recommendations for improving onboarding and workforce integration.

Literature Review

This section reviews key research on information-seeking behaviors and organizational socialization, focusing on how these concepts apply to engineers who are new in the microelectronics engineering industry. These studies provided a framework for understanding how individuals adapt to their roles by actively seeking information and engaging in workplace socialization.

Information-Seeking Behavior

Information-seeking behavior refers to the process where individuals actively seek knowledge to reduce uncertainty and navigate their roles. Morrison explained that this behavior includes methods like directly asking questions (inquiry) or observing others (monitoring) [5]. Vu et al. found that information-seeking plays a critical role in helping newcomers improve task performance and overall job satisfaction [10].

The strategies that newcomers use to find information often combine formal approaches, like training programs, with informal ones, such as asking peers or supervisors for guidance. Fetherston noted that this mix of strategies allows newcomers to balance structured learning with real-time problem-solving on the job [4].

Organizational Socialization

Organizational socialization is the process where newcomers learn the skills and behaviors they need to succeed as members of their workplace. Van Maanen and Schein highlighted the importance of socialization in helping employees integrate into the organization [12]. Benzinger

added that structured onboarding programs, like mentorship or peer support, make a significant difference in how quickly newcomers adjust [1].

Supervisors also play a major role in this process. Nifadkar explained that newcomers often form impressions, or schemas, of their supervisors during their early days on the job. These impressions shape how much information they seek from their supervisors and influence how smoothly they transition into their roles [7].

Collaborative Information Seeking

Collaborative information-seeking (CIS) happens when groups work together to gather and share knowledge to solve complex problems. Hansen, Mishra, and Pandey found that collaboration improves information sharing and often leads to innovative solutions [2]. For engineers, CIS is especially helpful since technical roles require teamwork to address challenging tasks.

The Role of Social Influence

Social interactions also shape how newcomers acquire information and understand their roles. Tomprou and Nikolaou showed that coworkers and supervisors influence the promises newcomers believe their organizations make to them. These social interactions help newcomers understand workplace norms and expectations [11].

Challenges in Information Seeking

Although information-seeking is essential, it is not always easy. Nordsteien and Byström found that newcomers sometimes struggle to align their proactive approaches with established workplace practices [9]. Organizations need to create environments that support diverse ways of seeking and using information to help newcomers succeed.

Connecting to the Research Context

This study builds on the ideas of information-seeking behavior and organizational socialization to explore how new engineers in the microelectronics engineering industry bridge gaps in their knowledge. By using these existing frameworks, the research aims to provide practical suggestions for improving how organizations help new engineers adapt and learn in their roles.

Procedures

Participant data was collected through a combination of one-on-one and group interviews. These interviews followed a semi-structured format and were conducted using Zoom. Each session was recorded and later transcribed to ensure accuracy and completeness.

The protocol questions included: "What knowledge, skills, and abilities (KSAs) gaps have you observed in the field of microelectronics engineering, either during your own transition from education to the workplace or among employees and colleagues entering the field?" Follow-up questions were used to explore these knowledge gaps in greater depth. Interview lengths ranged from 10 to 66 minutes, with the average interview lasting approximately 31 minutes. The participants' average age was about 45 years old. Most participants were white/Caucasian (80%). One participant was of Hispanic origin, one identified as Asian, and one as South Asian. There were 21 males (84%) and three females (12%). One participant did not disclose their gender. Interviews were conducted until data saturation was achieved, meaning no new themes emerged from the responses [8], [10].

To maintain participant confidentiality, all interviews were transcribed verbatim and anonymized using numerical pseudonyms that participants chose themselves. The final dataset included a total of 377 single-spaced pages of transcripts, accounting for 13 hours and 7 minutes of recorded interviews. This rigorous process ensured the data was comprehensive and reflective of participants' experiences [8], [4].

Analysis

The analysis began with an initial round of open coding, where segments of the data were assigned codes based on broad themes. This process was guided by the research question: "What information-seeking strategies do engineers use to equip themselves with the technical skills needed on the job?" During this phase, the coding focused on identifying excerpts related to "information-seeking behavior" and "organizational socialization" [4], [5].

In the subsequent phase, secondary-cycle coding was conducted to refine and organize the initial codes into broader thematic categories. This step involved an inductive approach, with themes emerging through repeated readings of the transcripts. Some of the secondary codes that were identified included 'Mentoring'—both formal and informal, 'Bootcamps,' 'Training Seminars,' 'Conferences,' 'Knowledge Repositories,' and 'Self-directed Research Strategies' [10].

Throughout the analysis, the research team held regular discussions to review findings and ensure that the interpretations reflected the richness and complexity of participants' experiences. This collaborative approach led to the identification of key overarching themes, such as "self-directed learning" and "collaborative learning." These themes highlighted how participants navigated their roles by blending independent problem-solving with teamwork, ultimately adapting to organizational expectations in the microelectronics engineering context [4], [10].

Findings

This study aimed to answer the question: What information-seeking strategies did engineers use to equip themselves with the technical skills needed on the job? The findings revealed that engineers relied on a variety of strategies, each serving distinct purposes and catering to different learning needs. These strategies blended both structured and unstructured approaches, showcasing the adaptability and self-reliance that were often essential in technical roles.

Structured Information-Seeking Methods

Mentoring: Direct

Direct mentoring played a pivotal role in addressing the specific challenges engineers faced when entering the microelectronics industry. It offered personalized guidance, helping engineers build confidence, develop situational understanding, and adapt to complex roles. Avery, an aerospace engineer, emphasized how mentorship provided access to specialized expertise, accelerating his ability to meet role demands:

> In my case, it comes from my college background and, more or less, mentoring. When I started, we had our original guy who started back in the seventies. He'd been brought back on contract, and we kept him around for a few years while I was new. I sucked every bit of knowledge and information I could out of him so I could learn what I could.

Avery elaborated further on the value of working closely with experienced engineers, noting how feedback and critique from seasoned professionals allowed him to refine his technical skills and decision-making:

> Talking to these people, getting input from them—if I write a test plan or report, what's their feedback? What's their criticism? Where did I make mistakes? Even at 14 years in, I'd say my knowledge is still relatively limited compared to someone who's been doing this for 40 years. Mentoring under people with more experience is invaluable.

This mentorship experience highlights how direct mentoring bridges generational knowledge gaps, fosters professional confidence, and preserves institutional expertise, ultimately enabling engineers to address complex technical challenges more effectively.

Jordan's experience with peer mentoring further illustrated how structured mentoring programs foster both teaching and learning. In Jordan's case, a peer mentor who had recently completed a similar training program served as a guide, reinforcing the mentor's knowledge while supporting Jordan's growth:

The training was actually taught by another associate in the program who had started five months before me and had already gone through the class. It was interesting because they had him teach me, which served as a double learning experience for him—reinforcing his understanding of the material while also helping me learn it.

This peer mentoring approach not only built Jordan's confidence but also fostered a sense of belonging and trust within the organization.

Cameron, a senior manager, underscored the critical role of intentional mentoring in ensuring early career success for engineers:

It's so important in that first part of their career that they get the intention and the mentoring they deserve, right? Because you're hiring a resource. Why would you just put it in the corner and just leave it alone?

Cameron's emphasis on structured mentoring programs highlights the need for organizations to prioritize professional development to retain talent and ensure long-term success.

Bootcamps

Bootcamp programs provided engineers with structured learning environments to rapidly acquire job-specific technical skills. These employer-sponsored programs often served as a foundation for engineers entering the microelectronics industry, ensuring they could quickly contribute to organizational goals.

Robin described a boot camp program in which engineers were introduced to key skills and rotated through various technical departments to gain practical experience:

And so they came in, they did this boot camp. And then after, like, two months of 'drills'—this is how you do this—they paired them off with different groups like the product engineering group and the application engineering group.

Similarly, Jordan reflected on a year-long boot camp that not only enhanced technical expertise but also fostered lasting professional relationships:

After the program, I reached out to my supervisor and the associate who taught me during training. We set up regular syncs to discuss our progress and workloads. This helped me feel more confident, knowing it's okay to ask for help and that I likely know more than I think.

Avery provided another perspective, describing a certification-focused boot camp offered through her employer that aligned with specific technical requirements:

The [program] is…available to government employees and civilian contractors. They have to make room for the civilian contractors because, more or less, the way they've written those requirements for [the program] is to do the testing, actually write a report, and submit it to the customer—you have to have the certification.

These examples underscore the variety of boot camp approaches, from intensive technical rotations to certification programs tailored to organizational needs. Comparatively, bootcamps differ from other training methods by providing immersive, role-specific experiences that prepare engineers to contribute immediately.

Alex highlighted how even short virtual sessions could replicate some of the benefits of bootcamps:

It would be good—not even an extensive training class, but just a 2-hour virtual online training for the program manager, logistics people, and those supporting the research and academic sides.

These diverse training programs demonstrate how structured environments not only align engineers' skills with organizational needs but also foster connections and professional growth.

Unstructured Information-Seeking Methods

Mentoring: Indirect

Participants highlighted the value of indirect mentoring, where knowledge was gained through group discussions, reviewing previous work, or informal interactions with industry experts. Unlike direct mentoring, which involves deliberate, one-on-one teaching relationships, indirect mentoring emphasizes self-guided learning and informal exchanges. These methods often occurred online or in collaborative settings, requiring engineers to proactively seek out expertise and engage with peers or senior professionals.

Greg, an engineer at an aerospace company, described how his organization relied on self-mentoring as a form of indirect mentoring:

We've done self-mentoring, where we find the folks we need to talk to in order to understand things.

This approach illustrates how indirect mentoring differs from direct mentoring by shifting the responsibility for knowledge acquisition to the individual. Engineers like Greg identified and approached knowledgeable colleagues independently, enabling them to navigate complex technical issues without formal assignments or structured relationships. This self-initiated process encouraged independence and adaptability, key traits in fast-paced industries.

Avery emphasized how indirect mentoring was frequently used as an effective information-seeking tool within his organization:

> So, they'll sit there, and a senior mechanical, electrical, or civil engineer will train them to adapt their skills to roles like petroleum engineering, ensuring they're aligned with how the company operates.

While Avery's example involves senior engineers offering guidance, the informal and context-specific nature of these interactions distinguishes them from direct mentoring. These discussions often occurred in group settings or during on-the-job tasks, where engineers adapted general knowledge to specialized roles through collaborative problem-solving.

Alex shared additional opportunities for indirect mentoring through conferences and informal events, such as lunch-and-learn sessions:

> Yeah, I think I talked about that a little bit. We do lunch and learns, and we also reach out to industry. For example, we collaborate with industry partners to learn about different tools that are useful for applications within our company.

These sessions provided engineers with exposure to a variety of resources, including internal expertise, external industry knowledge, and new tools. Unlike direct mentoring, these opportunities allowed for broader, less structured exchanges of information, enabling engineers to learn collaboratively and apply new techniques to their roles.

Bailey, a senior director at a microelectronics company, underscored the importance of fostering collaboration and diverse learning opportunities as part of indirect mentoring:

> We encourage new collaborations, publishing papers, attending conferences, and, in many cases, leading research proposals as a principal investigator. We strive to provide opportunities for individuals to explore these areas based on their interests. Beyond that, we also promote cross-divisional collaboration within our company. Our safety research is technically diverse, with divisions focusing on a wide range of applications, from biomedical technologies to fundamental materials science.

Bailey's example highlights how indirect mentoring enables engineers to explore professional development through informal learning pathways, while also promoting innovation and teamwork across organizational boundaries.

Self-Directed Research Strategies

Self-directed research strategies (SDRS) empowered engineers to proactively address knowledge gaps, fostering adaptability and self-reliance. Unlike indirect mentoring, which involves informal

exchanges with others, SDRS places the emphasis entirely on the individual to seek out resources and solutions.

Greg described his approach to self-directed research:

> Whenever I had questions or something came up, if that didn't answer it, I would go and search other resources. My group kept a pretty good file of different resources, like short courses from past conferences. I've got a bunch of college notebooks that I can read through to understand something better.

This example demonstrates how engineers used internal repositories, archived documentation, and personal notes to independently solve problems. These strategies allowed Greg to tailor his learning to the specific demands of his role, exemplifying the importance of organizational tools that support self-directed learning.

Alex shared how his organization tackled complex problems through collaborative and self-driven efforts:

> We had a problem we needed to solve, and none of us really knew how. So, I started scouring the Internet and our archives for information. I identified the specialty areas we needed to research and assigned those to team members. They'd dive into those areas, and then we'd regroup and move forward.

Here, Alex's team combined self-directed research with collaborative problem-solving, demonstrating how these approaches complement one another. The use of online resources, digital repositories, and team-based assignments allowed for efficient knowledge acquisition and application.

Alex also highlighted how his team evaluated different resources to support decision-making:

> I run a team, so depending on which part of the team, we evaluate different components for various applications. We look at parts libraries, compare and contrast options, and consult with other teams in the company to gather expertise as needed. It's a very collaborative and iterative process.

This example reinforces the role of organizational tools, such as parts libraries and internal knowledge-sharing platforms, in enabling engineers to address challenges. These resources provide a foundation for both individual research and collaborative innovation, fostering efficiency and adaptability.

Cameron emphasized the importance of self-directed research and collaborative problem-solving in cultivating critical workplace skills:

I think some of the curriculum that needs to be attached to that is this: take eight kids, throw them in a room, give them a problem, and see how they solve it. How do they interact? Are they asking, "Hey, do you know about this? This is the problem—who here has experience with this?" Are they willing to step back, be second or third, and not always feel the need to lead?

One specific tool Alex mentioned was MATLAB, a widely used resource for technical problem-solving and skill-building:

The one I'm thinking about right now is MATLAB. Universities use it a lot, and it's been helpful in our work too.

These examples highlight the importance of combining online tools, internal repositories, and informal learning opportunities to support engineers' self-directed and collaborative efforts. By leveraging these resources, engineers demonstrated their ability to independently seek and apply knowledge, even in high-pressure or resource-limited environments.

Discussion

The findings highlighted the importance of fostering an environment that supports both structured and informal learning. Organizations can enhance the onboarding process by offering formal training programs while also promoting mentorship and collaborative learning opportunities. These efforts not only help engineers bridge knowledge gaps but also improve retention and job satisfaction by fostering a sense of belonging and competence within the workplace. A unique finding in this industry was the emphasis on certifications and the structured formality of mentoring programs, which are uncommon in other sectors but vital in the microelectronics engineering environment.

Mentoring

Direct Mentoring

Direct mentoring was a foundational strategy for facilitating organizational socialization, providing tailored guidance that built confidence and situational understanding. Mentorship opportunities have been shown to equip engineers entering the microelectronics industry with critical technical and social skills necessary for navigating complex organizational roles [10]. Additionally, effective mentoring fosters a sense of organizational career growth, enhancing job satisfaction and long-term engagement [4]. These findings underscore the dual value of mentoring as a tool for skill development and employee retention.

Indirect Mentoring

Indirect mentoring supports independent learning through informal interactions, group discussions, and collaborative problem-solving. Unlike direct mentoring, which provides intentional, one-on-one guidance, indirect mentoring emphasizes self-initiated knowledge-seeking in informal or unstructured settings. This approach was particularly valuable in fast-paced industries where time and direct supervision were limited [10].

Greg highlighted this dynamic, explaining how his organization relied on self-mentoring to identify and engage with the right people for knowledge transfer:

> We've done self-mentoring, where we find the folks we need to talk to in order to understand things.

This example demonstrates how indirect mentoring differs from direct mentoring by requiring individuals to independently seek out and leverage expertise, fostering adaptability and self-reliance.

Similarly, Alex's experiences with lunch-and-learn sessions and collaborative problem-solving illustrate how informal knowledge-sharing can facilitate learning and innovation. These activities allowed employees to engage with peers and external partners to address challenges, ensuring that critical insights were shared without overburdening senior team members.

Bailey's insights on fostering cross-divisional collaboration and professional development further reinforce the role of indirect mentoring in creating an environment of shared learning and innovation. By combining informal mentoring with diverse professional opportunities, organizations can promote proactive knowledge-seeking and broader teamwork.

The importance of positive organizational communication in these interactions has been shown to be essential for maintaining connection and support during challenging times, such as onboarding or organizational crises [3]. Interactions like those described by Greg, Alex, and Bailey cultivate an environment of trust and belonging, where employees feel supported in their learning journeys. This sense of trust is not only key to sustaining engagement and productivity but also critical for fostering proactive workplace behaviors.

By creating spaces for informal collaboration and independent learning, indirect mentoring aligns with organizational strategies that prioritize both efficiency and employee development. These practices demonstrate how fostering self-reliance and adaptability through indirect mentoring can lead to sustained success in dynamic and demanding industries.

Bootcamps

Bootcamp programs provide structured learning environments that enable engineers to acquire practical, role-specific knowledge quickly. Research has shown that institutionalized

socialization tactics, such as bootcamps, are particularly effective in reducing anxiety and increasing job satisfaction for engineers entering the microelectronics industry [1].

These programs not only foster technical learning but also strengthen professional relationships by creating support systems that help participants feel more comfortable navigating their roles. This relational support enhances confidence, reduces workplace stress, and builds a sense of belonging. The combination of technical and relational elements is essential for improving job performance and satisfaction.

When traditional boot camp programs are unavailable, alternative training options, such as short virtual sessions or long-term educational initiatives, can still effectively equip engineers with the skills and knowledge necessary to succeed. For instance, Alex's suggestion of virtual learning sessions for specific audiences, such as logistics and research teams, underscores the value of flexible, targeted training options. These approaches align with findings in the literature, which emphasize that structured onboarding strategies, including mentoring and training, play a critical role in promoting career development opportunities and improving organizational outcomes [4].

By fostering professional development and addressing onboarding challenges, structured training programs not only enhance job satisfaction but also contribute to better organizational performance and retention.

Self-Directed Research Strategies

Self-directed research strategies (SDRS) empowered engineers to proactively address knowledge gaps, fostering adaptability and self-reliance. Unlike indirect mentoring, which involves informal exchanges with others, SDRS places the emphasis entirely on the individual to seek out resources and solutions.

For example, Greg's use of archived materials and resources from past conferences demonstrates how readily available information can empower engineers to take charge of their learning. These resources, such as internal databases, digital repositories, and archived documentation, allowed engineers to tailor their learning to the specific demands of their roles.

Alex's team-based problem-solving approach further illustrates how SDRS can drive both individual development and organizational success. By combining self-directed research with collaboration, engineers were able to address complex challenges efficiently. Alex also highlighted the importance of tools like MATLAB and parts libraries in supporting both self-directed and team-based learning efforts.

Organizations that provided access to these tools promoted a culture of continuous learning and resilience, vital for navigating the evolving demands of technical roles [3].

Limitations

While this study provides valuable insights into the information-seeking behaviors and organizational socialization of engineers, several limitations should be acknowledged. These limitations highlight areas for caution in interpreting the findings and opportunities for future research.

Though the sample size was sufficient for qualitative analysis, it may limit the generalizability of the findings to all engineers or other technical professionals. The participants were drawn from the microelectronics electronics industry, which may not fully represent the broader engineering workforce or other industries with similar challenges [10].

This study relied on self-reported data collected through interviews. While this method provided rich, detailed accounts of participants' experiences, self-reporting can introduce biases, such as social desirability or selective memory. Participants may have emphasized behaviors they believed were expected or overlooked critical moments in their adjustment processes [5].

The research primarily focused on the initial stages of organizational socialization. As a result, it may not fully capture the long-term adaptation and learning behaviors of newcomers. Longitudinal studies tracking participants over an extended period could provide deeper insights into how information-seeking strategies evolve and how they contribute to career development [12].

The study's context within the microelectronics engineering industry adds a unique layer of complexity that may not be directly transferable to other engineering-related sectors. The highly regulated and secure nature of this field likely influenced both the information-seeking strategies and socialization experiences of participants. Future research could explore similar dynamics in less regulated environments to identify broader patterns [4], [11].

By acknowledging these limitations, this study invites further exploration of the nuanced processes through which newcomers adapt to their roles. Addressing these constraints in future research can provide a more comprehensive understanding of how individuals navigate technical and organizational challenges in diverse contexts.

Conclusion

This study explored the interplay between information-seeking behaviors and organizational socialization as key factors in helping engineers entering the microelectronics industry adapt to their roles. Through an understanding of existing frameworks, such as proactive information-seeking strategies [5], [10] and structured onboarding programs [1], [12], this research emphasizes the importance of creating supportive organizational environments. These

environments not only facilitate knowledge acquisition but also foster collaboration and integration into workplace norms.

Findings highlight the critical role of supervisors and peers in shaping how newcomers acquire information and adapt to workplace expectations. Social influences, as explored by Tomprou and Nikolaou [11], further underscore the importance of interpersonal dynamics in organizational learning. While collaborative information-seeking [2] and onboarding programs prove effective, challenges in aligning newcomers' proactive approaches with established workplace practices [9] reveal areas for improvement.

By applying these insights, organizations in the microelectronics engineering industry can enhance their socialization tactics to bridge knowledge gaps effectively, ensuring smoother transitions for new engineers. Future research should explore how technology and remote work dynamics influence these processes and test intervention strategies aimed at fostering inclusive and innovative work environments.

Appendix

Appendix A: Key Definitions

Information-Seeking Behavior: The process by which individuals actively seek knowledge to reduce uncertainty and navigate their roles, employing strategies such as inquiry and monitoring [5], [10].

Organizational Socialization: The process through which newcomers acquire the knowledge, skills, and behaviors necessary to function effectively within their organizations [12], [1].

Collaborative Information Seeking (CIS): Group-based processes in which team members collectively gather and share information to solve complex problems, fostering teamwork and innovation [2].

Appendix B: Research Context

This study focused on newly hired engineers within the microelectronics engineering industry, an environment characterized by its complexity and need for rapid adaptation. The literature reviewed includes studies on:

Proactive newcomer behaviors, such as inquiry and networking [10].

Socialization practices, including formal onboarding and mentorship programs [1].

The influence of social and collaborative dynamics in workplace learning [2], [11].

Appendix C: Study Implications

Practical Implications

Organizations should prioritize structured onboarding programs, foster open communication, and encourage collaborative problem-solving to aid newcomers' transition.

Future Research Directions

Investigate the role of remote work and digital collaboration tools in facilitating organizational socialization and information-seeking behaviors.

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