

Experienced Instructors' Perceptions of the Influence of Generative AI on Novice Instructor Development

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Abstract: This study investigates how experienced instructors perceive the influence of generative AI on the expertise development of novice instructors. Semi-structured interviews were conducted with four expert instructors and analyzed using the KJ method. The results indicate that core elements of expertise development—such as rehearsal, domain knowledge acquisition, and learning from expert instructors—remain essential. Generative AI was perceived as enhancing efficiency in training preparation and supporting learning, while also posing risks of superficial understanding. Consequently, fact-checking skills and human-centered instructional practices were identified as increasingly important.

Keywords: Human Resource Development, Instructor Development, Generative AI, Five-Stage Model

1. Introduction

1.1 Background

A characteristic of Japanese employment practices is the combination of mass hiring of new graduates and human resource development through OJT (On-the-Job Training) and Off-JT (Off-the-Job Training) (Sato, 2024). After joining a company, new graduates undergo several months of new employee training (Off-JT), followed by assignment to departments where they are developed through work-based training (OJT). In terms of the Five-Stage Model of Skill Acquisition (Dreyfus, 2004), new graduates acquire knowledge and skills as Novices (Stage 1) during initial training and aim to develop toward Advanced Beginner (Stage 2) and beyond through practice. Corporate training instructors are developed through a similar process. Nukiyama et al. (2024) suggest that, in OJT for novice instructors hired as new graduates, support from colleagues and acquisition of domain knowledge are particularly important.

However, rapid advances in AI have changed the skills required for work (Vrontis et al., 2022). For example, generative AI (GenAI) can create lesson plans and instructional materials (van den Berg & du Plessis, 2023), requiring instructors to develop skills for collaborating with AI. At the same time, Kasneci et al. (2023) point out that reliance on GenAI may reduce thinking ability.

1.2 Purpose

The acquisition of skills for using GenAI is essential for instructors, and its impact on novice instructors (Novice/Advanced Beginner) is particularly significant. However, this issue has not been sufficiently examined in prior research. Experienced instructors, who are responsible for training novices, are in a position to comparatively reflect on factors influencing expertise development. Therefore, this study aims to clarify, through interviews

with experienced instructors, which elements of the expertise development process of novice instructors are perceived as changing and which remain unchanged due to GenAI. Based on these findings, the study explores implications for OJT design in the era of GenAI.

2. Research Methods

In January 2026, semi-structured interviews were conducted with four experienced instructors from a comprehensive human resource development company. All participants had over ten years of experience in IT training and held managerial positions. The purpose of the study and the handling of personal information were explained, and informed consent was obtained. The first author and the participants were colleagues, and rapport had already been established. Interviews lasted between 35 and 50 minutes. Questions addressed basic perceptions of novice instructor development and both positive and negative influences on expertise.

Data were analyzed using the KJ method (Kawakita, 1967), which organizes qualitative data bottom-up and visualizes the structure of perceptions. First, interview data were segmented into meaning units and labeled. Next, similar labels were grouped and assigned category names. Higher-level categories were then constructed, and relationships among categories were visualized using diagrams.

3. Result and Discussion

As a result of the analysis, 110 labels were generated, from which four top-level categories and twelve subcategories were identified (Figure 1). The results are described by top-level category. In the text, { } indicates top-level categories, < > subcategories, and “ ” interview excerpts.

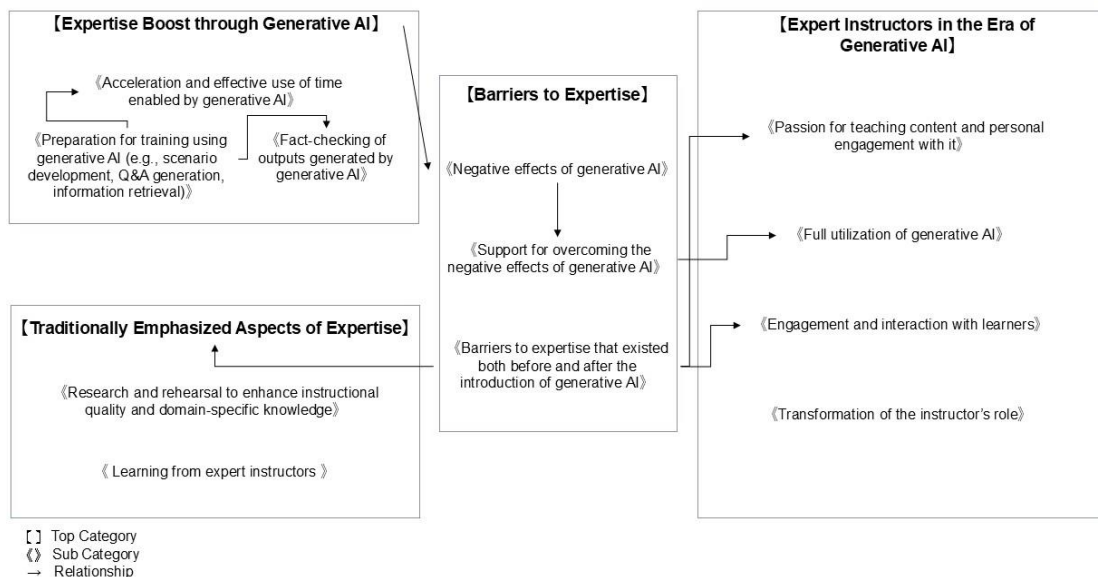


Figure 1. Diagram generated using the KJ method

3.1 Traditionally Emphasized Aspects of Expertise

For {Traditionally Emphasized Aspects of Expertise}, experienced instructors highlighted <Research and rehearsal to enhance instructional quality and domain-specific knowledge> and <Learning from expert instructors>. For example, regarding preparation for training

sessions, one noted that “methods of explanation and rehearsal have not really changed”. At the same time, preparation is not done individually; rather, “it was important for development how to involve people with more knowledge and experience than oneself”, emphasizing the importance of <Learning from expert instructors>.

3.2 Expertise Boost through Generative AI

All experienced instructors mentioned that novice instructors use GenAI as a “sounding board”, for example, when considering “whether explanations are appropriate or how to make them easier to understand”, indicating the practice of <Preparation for training using generative AI>. They also emphasized that, by using GenAI, “since answers come quickly, time can be allocated to other investigations or technical research”, highlighting <Acceleration and effective use of time enabled by generative AI> as a key factor. These contribute to {Expertise Boost through Generative AI}. However, to address hallucinations, a new skill of <Fact-checking of outputs generated by generative AI> -“verifying the generated content” - has become necessary.

3.3 Barriers to Expertise

GenAI also introduces <Negative effects of generative AI>, such as “feeling satisfied just because preparation seems complete”. To address this, experienced instructors provide <Support for overcoming the negative effects of generative AI>, such as pointing out “the need to investigate further or check additional areas”. In addition, <Barriers to expertise that existed both before and after the introduction of generative AI> were identified, such as situations where “too much information leads to a lack of coherence.” These are addressed through <Research and rehearsal to enhance instructional quality and domain-specific knowledge> and <Learning from expert instructors> identified earlier. Thus, novice instructors continue to face multiple {Barriers to Expertise} even in the era of GenAI.

3.4 Expert Instructors in the Era of Generative AI

For {Expert Instructors in the Era of Generative AI}, four elements were identified: <Passion for teaching content and personal engagement with it>, <Engagement and interaction with learners>, <Full utilization of generative AI> and <Transformation of the instructor’s role>. The first two were recognized as traditional elements of expertise, while the latter two reflect changes after the introduction of GenAI.

Novice instructors are expected not to deliver lectures mechanically, but to “internalize content as a coherent story”, emphasizing <Passion for teaching content and personal engagement with it>. In addition, beyond acquiring instructional and domain knowledge, they must pursue whether “the output truly solves learners’ problems”, reflecting <Engagement and interaction with learners>. As noted, acquiring these competencies involves <Barriers to expertise that existed both before and after the introduction of generative AI>, and novice instructors learn through <Learning from expert instructors>.

Furthermore, rather than being used by GenAI, instructors must “use AI to produce better outputs,” highlighting <Full utilization of generative AI>. This is accompanied by <Transformation of the instructor’s role>. Participants also emphasized that “observing learners and responding accordingly is something only humans can do,” recognizing its increased importance. They further questioned whether “generative AI can take the step from zero to one,” suggesting that uniquely human domains will remain. Thus, instructors are required to appropriately utilize GenAI, understand its limitations, and strengthen human-specific expertise.

3.5 Discussion

This study examined the influence of GenAI on novice instructor development by identifying both unchanged and changing aspects. The findings indicate that rehearsal, deepening domain knowledge, and learning from expert instructors remain essential even in the GenAI era. This is consistent with the Five-Stage Model of skill acquisition (Dreyfus, 2004), suggesting that GenAI does not replace the process of expertise development. At the same time, generative AI improves efficiency in training preparation and explanation generation, thereby accelerating learning. This aligns with prior research on English teachers' use of GenAI (Jeon & Lee, 2023). However, GenAI can also hinder expertise development. Fact-checking GenAI outputs is therefore a critical skill to address such risks.

These findings suggest that OJT design in the GenAI era should integrate: (1) iterative use of AI and rehearsal, (2) evaluation of AI outputs, and (3) deepening understanding through interaction with expert instructors. Furthermore, the importance of flexible responses to learners and relationship building has increased. This is consistent with characteristics of the Competent (Stage 3) level and above, where holistic situational understanding and judgment are required.

4. Conclusion

This study explored the influence of GenAI on novice instructor development based on the perceptions of experienced instructors. The results show that GenAI contributes to efficiency in training preparation while also introducing challenges such as the acceptance of incorrect information. Accordingly, novice instructor development requires OJT design that incorporates fact-checking of AI outputs in addition to traditional elements such as rehearsal, domain knowledge development, and learning from expert instructors. Furthermore, it is important to balance the use of GenAI with human-centered instruction and deep learning. This study is a qualitative investigation focusing on experienced instructors with strong IT expertise in a single company, and its findings have limited generalizability. Future research should examine the generalizability of these findings by expanding the sample.

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