The Doing, Using, and Interacting (DUI) mode of innovation and learning is an important driver of innovation, mainly in small and medium sized firms. Studies that analyzed the Doing, Using, and Interacting (DUI) mode of innovation focused primarily on its external part and analyzed the transfer of tacit knowledge through collaborations of firms with their customers, suppliers, and competitors. While this external part of the DUI mode has gained attention also in large scale innovation surveys, the internal part of the DUI mode received comparatively less attention. However, the internal generation and diffusion mechanisms of tacit knowledge are also important drivers of innovation and have been analyzed in the literature mainly in the context of human resource management practices, organizational structure, knowledge management, and social capital. In this paper, we adopt a different perspective on the internal diffusion of tacit knowledge and focus on training practices that firms apply during workplace training to equip apprentices with knowledge that is relevant for production and innovation. We identify four unique training strategies that contain tacit knowledge: a basic training strategy, a knowledge formalization strategy, a knowledge absorption strategy, and a hybrid strategy. Our empirical analysis with German company data applies fuzzy-set Qualitative Comparative Analysis (fsQCA) to address the configurational nature of training strategies and shows that these training strategies explain the generation of innovation in firms. The training strategies bridge the gap between different types and sources of knowledge and some combine both, the DUI and the Science, Technology, and Innovation (STI) mode. Our conclusion contains implications for the combination of DUI and STI modes of innovation and the design of workplace training.