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Learning in the 21<sup>st</sup> Century focusses in a big way on empowering the present GenY learners to suit the employment environment in the coming decades. With the pervasive IT-infused work environment, it is imperative that the learning experience of the future workforce is adequately integrated with relevant IT-proficient thinking and working. Along with this employment requirement, the future workforce, the GenY learners, also expect their learning environment to be one of experiential learning. Pervasive IT affordances have altered their learning styles and impacted their expectations of the learning environments. A successful manpower training programme, therefore, needs to effectively match the industry requirement with the workforce mindset, to achieve optimum manpower training. To achieve this, Wavelink Maritime Institute (WMI) has developed a 3-year Pre-sea Training Programme for Marine Engineers, where the cadets are fully trained in all the required fields of knowledge through fully IT-integrated learning environment. Seamless accessibility, use of IT-applications to develop understanding and proficiency in engineering problem-solving, without the drudgery of long calculations, developing conceptual understandings, enabling authentic learning environments through trials of various what-if scenarios, simulations of actual engine-room cases, team games to simulate possible scenarios are some of the aspects of authentic learning strategies used in the training courses. Use of IT-infused student-centred activities where the learners are directly involved in knowledge creation and knowledge management are some of the key aspects of the developed courses at WMI. The objective of these courses is to create a close match between the learning aspirations of today's learners with the industry requirement of competencies in both conceptual and operations related knowledge in the field of marine engineering. Starting with the description of the steps taken to develop a knowledge-based infrastructure for learning, the paper will share some specific applications of technology usage in many of the course subjects and also include student feedback, which reflects some degree of success of our efforts.

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