Applying Situated Learning Theory to Convergence Apparel Design Curricula

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Background and Purpose. The application of learning theories has yielded positive outcomes in various fields (Schunk, 2020). Despite the widespread adoption of learning theories in other disciplines, in the context of apparel design education, the focus has primarily been on teaching design techniques rather than on monitoring students' learning progress.

Situated learning theory (SLT) has demonstrated promising impacts on learners (Bredo, 1997; Lave, 1988; Lave & Wenger, 1991); however, the integration of situated learning theory into convergence apparel design curricula remains relatively unexplored. Thus, this paper aims to propose a conceptual model integrating situated learning theory into convergence apparel design curricula, combining 3D virtual apparel design with sustainable content, and its potential positive impact on students' learning outcomes (see Figure 1). Four methods from situated learning theory will be applied, including *active participation* (Lave, 1988; Stein, 1998), *collaborative learning environments* (Lave, 1988), *incorporating diverse perspectives* (Choi & Hannafin, 1995), and *reality modeling* (Stein, 1998).

Theoretical Framework and Propositions. Situated learning theory (SLT) focuses on the relationship between people's learning and their situation or context and is based on Lave and Wenger's (1991) idea of *legitimate peripheral participation in a community of practice*. Situated learning may be described as an "enculturation" process in which the individual begins to form an identity within that community by adopting its norms, values, beliefs and cognitive processes (Woolfolk, 2023). Further, SLT is based on the sociocultural perspective of Vygotsky, who claimed that social interaction can foster higher mental capabilities and thus, it plays a critical role in learning (Vygotsky, 1978). Situated learning theory suggests utilizing *reality modeling* (Stein, 1998), *collaborative learning environments* (Lave, 1988), *active participation* (Lave, 1988; Stein, 1998), and *incorporating diverse perspectives* (Choi & Hannafin, 1995) to enhance learning outcomes. Convergence apparel design curricula, which incorporate 3D virtual apparel design with sustainability content, can become more powerful for students' learning experiences by integrating these four applications of situated learning theory.

Figure 1

A Conceptual Model of Integrating of Situated Learning Theory into Convergence Apparel Design Curricula
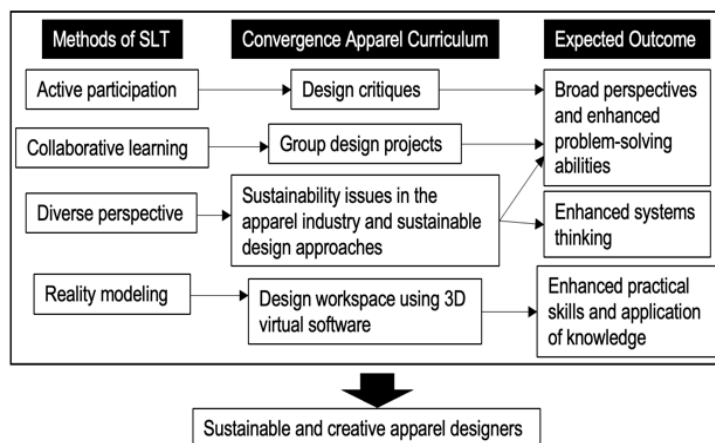
Active participation involves students engaging in the exchange of ideas and perspectives, enabling them to solve problems, achieve curricular objectives, and support their learning process (Stein, 1998). The students take an active role (Armstrong & LeHew, 2013) in leading the design critiques and discussions. Students in the convergence apparel design course can reflect on each other's 3D apparel design works and problem-solving strategies, fostering improvement in their own designs. Therefore, we propose:

Proposition 1: *Active participation on convergence apparel curriculum positively influences learners' (a) perspectives and (b) problem-solving abilities.*

The collaborative learning environment fosters problem-solving among learners and experts in a social context (Lave, 1988). By implementing group design projects, the convergence apparel design curriculum can effectively foster brainstorming and problem-solving activities. By strategically mixing students with varying levels of knowledge and experience, novices have the opportunity to collaborate closely with experts who have advanced expertise (e.g., instructors, peers). Thus, we propose:

Proposition 2: *Collaborative learning in convergence apparel curriculum positively influences learners' (a) perspectives and (b) problem-solving abilities.*

The incorporation of diverse perspectives promotes higher-order thinking and a deeper understanding of interconnected relationships (Remington et al., 2013; Vygotksy, 1978). The diverse perspective approach (Sipos et al., 2008) in teaching allows students to explore global sustainability issues from a wide lens, fostering a better comprehension of the complex interrelationship between the environment and humans (Remington et al., 2013). Instructors in the apparel curriculum can employ a multi-perspective approach to address the interconnected challenges faced by the apparel industry (Abner et al., 2019; Armstrong & LeHew, 2013). Moreover, a diverse perspective approach in fashion courses can broaden students' perceptions beyond environmental issues to encompass social, cultural, political, and psychological dimensions of sustainability (Jekal, 2022). The integration of 3D apparel design from a multi-perspective approach empowers designers with multiple viewpoints and creative abilities, enabling them to reduce risks and materials during the design, cutting, and manufacturing processes (McQuillan, 2020). Given this, we propose :

Proposition 3: *Incorporating diverse perspective in convergence apparel curriculum positively influences learners' (a) systems thinking, (b) perspective, and (c) problem-solving abilities.*

Reality modeling facilitates the transfer of learners' knowledge and experiences from their coursework to real workspaces, providing them with exposure to the intricacies and uncertainties of real-world learning (Stein, 1998). Through design projects using 3D virtual design software, students can develop practical skills that are directly applicable to their future careers in the apparel industry. 3D software technology, such as CLO 3D or Optitex, provides an apparel design workspace that reflects the real work environment, and enables students to learn various aspects of the apparel manufacturing process, such as pattern-making, garment visualization, sewing, printing, textile designing, displaying, and styling (Nissen & Nerup, 2020). Students working with 3D virtual apparel design software, which reduces production time and material for sampling (Papahristou & Bilalis, 2017), will learn how to minimize or eliminate the need for physical prototyping and accelerate developmental activities by shifting to a virtual space. Based on that, we propose:

Proposition 4: *Reality modeling in convergence apparel curriculum positively influences learners' (a) practical skills and (b) application of knowledge.*

   Conclusion and Implications. This conceptual paper integrates the educational methods of situated learning theory into convergence apparel design curricula to propose potential enhancements to students' learning outcomes. This proposal elucidates the adaptation of situated learning principles, offering significant advantages in fostering not only practical apparel design technique but also problem-solving ability, perspective taking, critical thinking, and a comprehensive understanding. This proposal draws the attention of apparel design educators to the importance of integrating Situated learning theory (SLT) into the curriculum to prepare students as sustainable and creative apparel designers, aligning with the current demands of academia and the industry workforce, including 3D virtual apparel design and sustainability.

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