

An improved 'team mental model' as an assessment tool for group decision-making during fit sessions

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Introduction: Clothes play a huge part in our lives not only because they are used to cover and protect our bodies, but also used to identify ourselves (Alexander et al., 2005). According to Ashdown and O'Connell (2006), clothes that fit well have positive psychological impacts on wearers as they enhance the appearance and increase confidence. Well-fitted garments look better and are perceived to be more comfortable, whereas the opposite will not be worn or selected in the market (Gill, 2011). Fit testing and analysis in product development stages are important because they lead directly to designing well-fitted garments, which bring consumer satisfaction with the fit. Companies that bring the best results over their repetitive fit testing can release better-fitting garments and guarantee higher sales (Bye & LaBat, 2005).

Nonetheless, fit assessments and pattern alterations have not been recorded properly in the apparel industry because successful alteration methods are considered trade secrets or an individual's genius in the fashion industry (Breslin & Buchanan, 2008). Designers, merchandisers, and pattern makers work together as a team to test the fit of the sample size garments and collect both visual and comfort feedback. They may reflect or reject this feedback to 2D garment patterns to improve fit and overall satisfaction (Bye & LaBat, 2005). The team meets the agreements on where and how to alter the patterns. The experts, who participate in the process, can use detailed technical terms when keeping comments on the fit analysis (Ashdown & O'Connell 2006) or informal terms depending on the individuals who evaluated the fit (Shin & Damhorst, 2018). Professional fit models are preferred for working versus dress forms because they can evaluate the garment's comfort and give comments on tactile experience in both static and in motion (Bougourd, 2007). Due to time limitations and regarding that each garment design has its own fit issues, it is difficult to evaluate every garment in detail. Therefore, over ninety percent of garments in fit sessions are evaluated on fit models two to three times during the product development process (Bye & LaBat, 2005). Fit analysis quality depends highly on how precise the team's knowledge is and how efficient they could meet the agreement as a team. This paper identified the fit testing stages and related them to the team mental model and seeing-moving-seeing model to propose potential ways to document data for further use. It would lead to efficient fit analysis and testing consistent quality in fit satisfaction.

Conceptual Model: Many players join fit testing during apparel product development process, including designers, merchandisers, and pattern makers. The experts do not share the same level of familiarity with fit evaluations or pattern alterations. It is because they may not be experts in technical design and/or may have spent longer/shorter time in the field related to fit assessment. Despite the knowledge difference among the team members, they share the assessment and meet the agreement when addressing the fit issues and determining where and how to adjust the

patterns (Bye & LaBat, 2005). In other words, documenting fit assessments must include the part where the participants discuss and conclude in shared cognition.

'Team mental model' is a shared and organized knowledge that comes with specific references shared among team members (Klimoski & Mohammed, 1994). Converse and other researchers (1993) indicated that team effectiveness has improved as team members share a certain amount of knowledge. One of the ways to build the team mental model is to accumulate shared experience as a team (Converse et al., 1993; Cooke et al., 2000). Moreover, Cooke et al. (2000) stated that not only the knowledge from the homogeneous teams but also the knowledge from the heterogeneous teams, which consist of team members from different disciplines, helps build the team mental model and leads to perform better as a team. Previous applied cognitive terminologies which documented the flow of individuals' knowledge were cognitive maps, categories, or schemas to keep track of knowledge (Klimoski & Mohammed, 1994). As we could relate the team mental model to the terminologies while we are trying to make explicit knowledge structures (Klimoski & Mohammed, 1994), they could be applied to document fit assessments. Amongst various cognitive terminologies, we would develop a sample framework to accumulate the data using cognitive maps. The data set would help the experts in the fit testing build the initial team mental model and further improve the team's performance.

For our conceptual model, to better understand the group decision-making during fit sessions, we propose to improve the 'team mental model' by drawing on the 'seeing-moving-seeing' model (Schon & Wiggins, 1992) and combining the two models to use as an evaluation tool of group dynamics (Figure 1). The 'seeing-moving-seeing' model identifies how designers reason and take iterative actions during the active design process. Designers start designing with 'seeing', i.e., judging how the object is and determining which action to take. The second stage is 'moving' the object based on the judgment from the first 'seeing'. However, it is challenging to make the perfect move on the 'moving' because the move would bring unintended consequences as well as intended changes. The third stage is 'seeing' the moved object. It includes judging the previous move and identifying intended/unintended changes.

The 'seeing-moving-seeing' repeats until finalizing the design (Schon & Wiggins, 1992). Because fit assessments are also a part of designing new garments, we would record them by breaking the process into 'seeings' and 'movings'.

Discussion: Teams that participate in fit sessions run repetitive fit assessments over the new apparel product

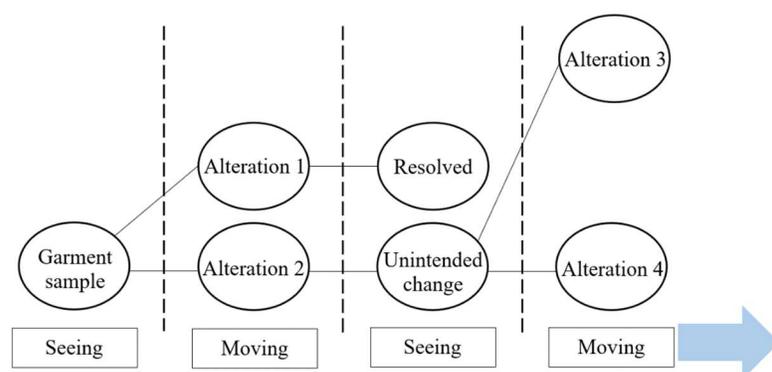


Figure 1. The conceptual model to assess group decision making during fit sessions.

development until the fit issues are resolved. Resolving fit issues in apparel products is a very complex challenge. For example, when resolving fit issues on a jacket, the jacket shoulders are connected to the sleeves and the collar. Therefore, the fit issue on a particular part of the garment is interrelated to every other part it is connected to. Fit assessments in apparel product development are repetitive decision-making processes among the experts as a group. To better understand team dynamics for effective fit evaluations as a group, we propose to develop a data collection model combining the ‘team mental model’ and ‘seeing-moving-seeing model’.

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