The Effect of Hazardous Label Design on users" Comprehension, Visual Performance and Hazardous Perception

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ABSTRACT

With the dynamic advances in industrial technology, hazardous materials use has greatly increased. As the handling of hazardous material becomes more common among workers, the need for hazardous materials labels becomes increasingly critical. Label labeling which warn users of the dangers and hazards of hazardous material is an important way to maintain users ’ safety and health. This study includes three experiments. The first experiment investigated the effects of the Republic of China (Taiwan) ’ s hazardous material symbol labeling (twelve types), subjects ’ educational specialization (design, industrial, and business), and training (before training, immediately following training, and one month after training) on symbol comprehension. The results showed that hazardous material symbol labeling and training were significant factors for comprehension. Symbol comprehension among the three educational specializations also showed significant difference. Subjects having specialized in industrial coursework best understood the hazard symbol labels. Overall, subjects ’ comprehension was high for well-designed, meaningful labels. The second experiment investigated the effects of adding Chinese red signal words of “ danger ” to warning labels on subjects ’ perception of hazard and attention. In order to discuss the effects of the subjects ’ specialty on their perception and attention, three different educational specializations were the same with experiment I. The results showed that perception of hazard and attention were not significantly different among subjects representing different specializations. Subjects ’ perception of hazard and attention for different labels were significantly different because of the different tiles, symbols, and background colors appearing on thirteen hazardous labels. In addition, adding signal words had a significant effect on increasing the perception of hazard and attention of the subjects. The third experiment investigated the effects of symbol- and wording-color of hazardous material labels, surround color, training, and ambient illuminance on users ’ visual identification performance. The results showed that symbol- and wording-color and training for three hazardous material labels were significant factors for visual performance. Subjects ’ visual identification performance was significantly better when symbol- and wording-color was black, additionally was also significantly better after subjects were trained.

Keywords : hazardous material labelv ; comprehensionv ; perception of hazard ; attention ; visual identification performance

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