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Study on the Focus of Attention of Special Education Students in Primary School

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Abstract : Special Education in Taiwan has been facing difficulties including shortage of teachers and lack in resources. Some students need to receive special education are thus not identified or admitted. Fortunately, information technologies can be applied to relieve some of the difficulties. For example, on-line multimedia courseware can be used to assist the learning of special education students and take pretty much workload from special education teachers. However, there may exist cognitive variations between students in special or regular educations, which suggests the design of online courseware requires different considerations. This study aims to investigate the difference in focus of attention (FOA) between special and regular education students of primary school in viewing the computer screen. The study is essential as it helps courseware developers in determining where to put learning elements that matter the most on the right position of screen. It may also assist special education specialists to better understand the subtle differences among various subtypes of learning disabilities. This study involves 76 special education students (among them, 39 are students with mental retardation, MR, and 37 are students with learning disabilities, LDs) and 42 regular education students. The participants were asked to view a computer screen showing a picture partitioned into 3 × 3 areas with each area filled with text or icon. The subjects were then instructed to mark on the prior given paper sheets, which are also partitioned into 3 × 3 grids, the areas corresponding to the pictures on the computer screen that they first set their eyes on. The data are then collected and analyzed. Major findings are listed: 1. In both text and icon scenario, significant differences exist in the first preferred FOA between special and regular education students. The first FOA for the former is mainly on area 1 (upper left area, 53.8% / 51.3% for MR / LDs students in text scenario; and 53.8% / 56.8% for MR / LDs students in icons scenario), while the latter on area 5 (middle area, 50.0% and 57.1% in text and icons scenarios). 2. The second most preferred area in text scenario for students with MR and LDs are area 2 (upper-middle, 20.5%) and 5 (middle area, 24.3%). In icons scenario, the results are similar, but lesser in percentage. 3. Students with LDs that show similar preference (either in text or icons scenarios) in FOA to regular education students tend to be of some specific sub-type of learning disabilities. For instance, students with LDs that chose area 5 (middle area, either in text or icon scenario) as their FOA are mostly ones that have reading or writing disability. Also, three (out of 13) subjects in this category, after going through the rediagnosis process, were excluded from being learning disabilities. In summary, the findings suggest when designing multimedia courseware for students with MR and LDs, the essential learning elements should be placed on area 1, 2 and 5. In addition, FOV preference may also potentially be used as an indicator for diagnosing students with LDs.

Keywords : focus of attention, learning disabilities, mental retardation, on-line multimedia courseware, special education
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