

Design of Interactive Visual Scheduling Systems

Samuel J. Kaufman, Donald J. Patterson, PhD and Gillian R. Hayes, PhD

Department of Informatics, University of California, Irvine, Irvine, CA 92697

Background:

Visual schedules are effective tools for supporting children with autism in understanding, structuring, and predicting activities. However, visual schedules can be difficult and time-consuming for caregivers to employ effectively, because caregivers must ensure the visual aids match volatile schedules. Technology-enhanced visual schedules have the capabilities to ease both the use of these aids and the data collection of activities in classrooms.

Objectives:

Understand how visual schedules are currently used and how they new technologies can allow for collaboration amongst teachers and parents through these schedules. Design and develop technology augmented visual schedules.

Methods:

With 20 caregivers of children with autism, including parents, teachers, and experts, we completed interviews and multiple brainstorming and participatory design exercises. We observed classrooms that currently use visual schedules. Based on these observations and design exercises, we created a large interactive touch-screen visual schedule system for use in a classroom setting. In addition to acting as a visual schedule, this system logs input from caregivers alongside data collected automatically from sensors.

Results:

Using the technology-augmented visual schedules, teachers can quickly and easily update the schedules in their classrooms, reducing the confusion when the schedules do not match reality. School staff can analyze the data from this system to test hypotheses about behavior and learning goals in comparison to sensed and manually entered activity data. Data in digital format aids caregivers in preparation of reports.

Conclusions:

Interactive and collaborative visual schedule systems have the potential to improve the lives of students with autism, both in the classrooms and at homes. Our inquiry into these settings afforded the design and development of one such system, improving efficiency, utility, and enjoyment from visual schedules in classrooms.