

Playful learning inside a square

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HOPSCOTCH offers learning, movement and fun all rolled into one.
Credit: Fraunhofer IDMT

Thanks to the work of Fraunhofer researchers, keeping mentally and physically fit at any age is now child's play – literally. Dubbed “HOPSCOTCH,” the interactive learning system is designed to be more efficient at combining learning, movement and most of all fun – whether for learning vocabulary words, history or math. The scientists will present their solution, which is named after the popular children's game, at the CeBIT trade fair on March 6–10.

Interactive [learning](#) with the aid of a computer was the hype of recent years. But as users quickly discovered: learning on a computer monitor is almost as tedious as learning from a book. Media scientist Dr. Martina Lucht from the Fraunhofer Institute for Digital Media Technology IDMT in Ilmenau found the solution to this problem on the street, so to speak: “I found my inspiration one day when I saw a hopscotch game

drawn on the sidewalk,” she recalls. “It suddenly occurred to me that learning has to be combined with movement to make it fun.” The result was HOPSCOTCH, the English name of a game in which children hop between clearly defined boxes on the ground.

The learning game consists of a sensor mat divided up into nine fields. Each field contains letters and a number, arranged like the keypad of a mobile phone. The user is supposed to complete tasks in certain subjects as these appear on a monitor, such as: “Was heißt Pflaume auf Englisch? [What is the English word for plum?]” To solve the task, the user has to step on the right fields on the mat in the right sequence to enter words or numbers – like writing a text message on your phone.

With HOPSCOTCH, a user can practice drills for English, do multiplication or answer questions on health science or history. “What makes this method so special is that it is suitable for all ages,” Martina Lucht is quick to point out. “We saw a two-and-a-half year old girl start playing with the program. She had learned the entire alphabet by the end of the day. But we have also found that senior citizens enjoy it, too, as we saw in their interest in our history quiz.”

The learning system capitalizes on children’s enjoyment of playing and movement. Ms. Lucht can also make the most of her skills as a media psychologist: For example, there is no negative feedback telling the user he or she is wrong. If an answer is incorrect, the user simply receives no confirmation message. So they have to keep trying until they get the right answer. “We have built in a kangaroo that jumps up and down and shouts ‘Yippee!’ when you have solved a task. The children love that.”

Initial tests at an elementary school have already demonstrated that all children were enthusiastic participants, particularly hyperactive children. Martina Lucht’s vision is to bring more movement into the classroom. For instance, there could be a HOPSCOTCH period each day that would

combine physical education with instruction in language skills.

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