



Designing Specific Tools to Enhance the Numeracy of Adults with ID

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Higher levels of numeracy lead to a better quality of life, however, adults with intellectual disability (ID) lack opportunity and expectation to engage with numeracy learning (Lambert & Tan, 2019). This study aimed to demonstrate one way of continuing to support numeracy learning for adults in work and social settings by investigating the way specifically designed tools could support learning and task engagement.

Using a qualitative research design, observations and interviews were conducted with four adults with ID in their work or social settings to determine participants' numeracy needs and design individual goals. Based on these goals, design research (DR) was used to develop, trial and refine task specific tools to support numeracy learning. Participants were three male and one female adult with ID. This paper draws on data from two participants competing in ten pin bowling, Ben, a 19-year-old male and David, a 41-year-old male (pseudonyms).

To support numeracy learning, individualized goals and tools were designed in an iterative process known as design research (Cobb et al., 2003). The original design of tools was based on observation and interview data and then refined through iterations of the DR cycle. A scoresheet was designed as the tool to support Ben and David in their goal of knowing their current score at the bowling alley. While the original design presented some challenges for the bowlers, the ongoing analysis and reflection of participants' activities with the designed tool facilitated the subsequent modifications within the DR cycle. The final design of the *Scoresheet* included the enlargement and separation of each box to record scores on a double-sided sheet so only one game was recorded on each side. It was conjectured that this would both support the participants in finding the appropriate box more easily and allow for writing larger numerals. Further scaffolding included written instruction to add 10 for spares and strikes.

This research demonstrates the usefulness of DR to frame the design of tools to support the achievement of numeracy learning goals for adults with ID. It is important to design and trial these tools within the context in which the learner requires them. The process of trialing tools, with ongoing analysis and reflection of the impact and ease of use, is an important factor in the successful development of the tool. While the mathematical aspects of the task are the focus of the initial design of the tool, consideration of the adult learner is a vital aspect in the design process for a successful outcome. While access to continued learning post school is still limited for adults with ID, the benefits shown by this research demonstrate the value in continuing opportunities for adults with ID to have access to post school learning.

References

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