

Assessing Mastery Motivation in a Young Child with Global Developmental Delay

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Clinical Image

Mastery motivation is an under-assessed resiliency factor that helps all children achieve their potential; it stimulates the child's attempt to master tasks that are at least moderately challenging for him or her. Several studies have shown that children were most motivated by tasks that were moderately difficult for them. Children had lower persistence at tasks that were too hard or perhaps too easy for them. Tasks with moderately difficult for typically-developing peers might be too hard for children with DD. Thus, if we want to have a valid test to measure their mastery motivation, it is important to give children tasks that are moderately difficult for them personally [1].

The revised individualized structured mastery tasks (ISMT-R), produce reliable and valid measures [2]. Here we describe the Puzzle Tasks of the ISMT-R and how we used them to measure persistence, a key indicator of mastery motivation. One child with global developmental delay is used to illustrate how the ISMT-R is used to assess persistence at tasks.

Two sets of toys for 15 to 48 month old children were used: 8 puzzles and 7 cause-effect toys. These toys, varied in assumed difficulty level from easy for children of 1.5 years developmental age to difficult for children of 4 years developmental age, were used. Figure 1 shows the 8 difficulty levels of the puzzle task and the approximate cognitive and fine motor age required to complete the puzzle.

Based on the child's scores on a standardized developmental test, the tester administered three or four puzzles that were assumed a priori to be easy, moderately challenging, and hard for that individual child. Specific rules were followed for which puzzles to present, when to provide prompts, and when to terminate a task. Based on the child's success in completing parts of the task, each of the presented puzzles was determined to be "actually" easy, moderate, or hard [2].

The actual or observed difficulty level of tasks during each 3 minute trial was defined as follows: (1) easy, the child completed all solutions within 1.5 minutes; (2) moderate challenge task: a child completed at least 2 solutions but not all solutions within 1.5 minutes; (3) hard task, the child completed less than 2 solutions (none or only one) within 1.5 minutes. Details about the procedure and scoring are provided in Wang et al. [2].

An example of using puzzle tasks to measure mastery motivation

A 34-month-old boy, with mild to moderate global developmental delay, had a developmental age of 21 months based on a standardized developmental test. Thus, he was given tasks with difficulty levels 2, 3,

and 4 or 5. As you can see from Figure 1, for a child with an average mental and fine motor age of 21 months, these tasks were assumed to be easy, moderately challenging, and hard for puzzles 2, 3, and 4 respectively. When this boy was given the tasks, his behaviour indicated that he actually had one easy puzzle (level 2), and two moderately difficult puzzles (levels 3 and 4). So, the tester also gave him level 5 in order to observe his persistence at a hard task. As might be expected, the child stopped working on the actually easy task (level 2) when he completed it (i.e., in 35 seconds). On level 3 he tried hard for 50 seconds, fitting 5 of the 6 shapes correctly, and he continued to try, off and on, to fit the last puzzle piece for the rest of the 3 minute trial. Because he showed task-directed behaviour on 22 of the 36 five second intervals, his persistence score was 22, indicating a quite high level of mastery motivation. His behaviour was similar on puzzle level 4. He completed most but not all of the puzzle and persisted for 24 of the 36 intervals, again indicating high mastery motivation, especially since this task was pretty difficult given his developmental age (see Figure 2). However, on puzzle level 5, the hard task, he was only able to put in one piece correctly, and he gave up after 100 seconds, having shown task-directed behaviour on only 12 of those 20 intervals.

As expected, this child showed much more task-directed persistence when given tasks that were moderately challenging for him than on a task very hard for him. Note that this child showed a high level of persistence (mastery motivation) on a task that was appropriate for his developmental age and in his case even for a puzzle that was intended for children of a somewhat older age. However, on the task that was appropriate for his chronological age, he was not only unable to complete it but his behaviour seemed to indicate that he had low mastery motivation. The take-away message is that although children with delays will likely appear to have low motivation if given tasks for same age peers, they may well show that they are indeed persistent and motivated if given tasks appropriate for their developmental age.

During interventions, clinicians should use the one step ahead approach of identifying and reinforcing the child's persistence at problems that are not too hard or too easy in order to support and increase the child's mastery motivation and later competence. The goal is to help each child reach their maximum developmental potential and optimize their participation in daily life (Figures 1 and 2).



Figure 1: Puzzle tasks of 8 difficulty levels for the revised individualized structured mastery tasks method with approximate mental and fine motor age needed to complete the puzzle. Level 1: 10 interchangeable circles; Level 2: 6 unconnected basic shapes with color cues; Level 3: 6 unconnected geometric shapes; Level 4: 6 unconnected car shapes; Level 5: 6-piece interlocking puzzle with cues; Level 6: 5-piece interlocking puzzle without cues; Level 7: 11-piece interlocking barn puzzle; Level 8: 6-piece 3D cube vehicle puzzle.

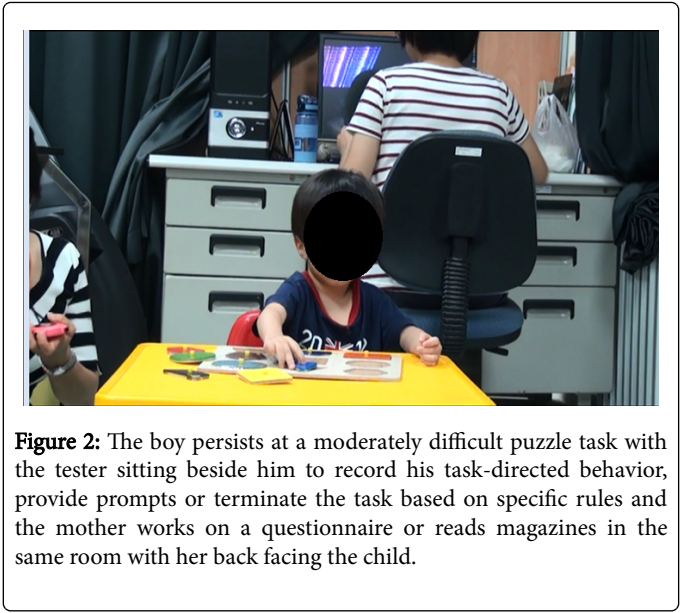


Figure 2: The boy persists at a moderately difficult puzzle task with the tester sitting beside him to record his task-directed behavior, provide prompts or terminate the task based on specific rules and the mother works on a questionnaire or reads magazines in the same room with her back facing the child.

References

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