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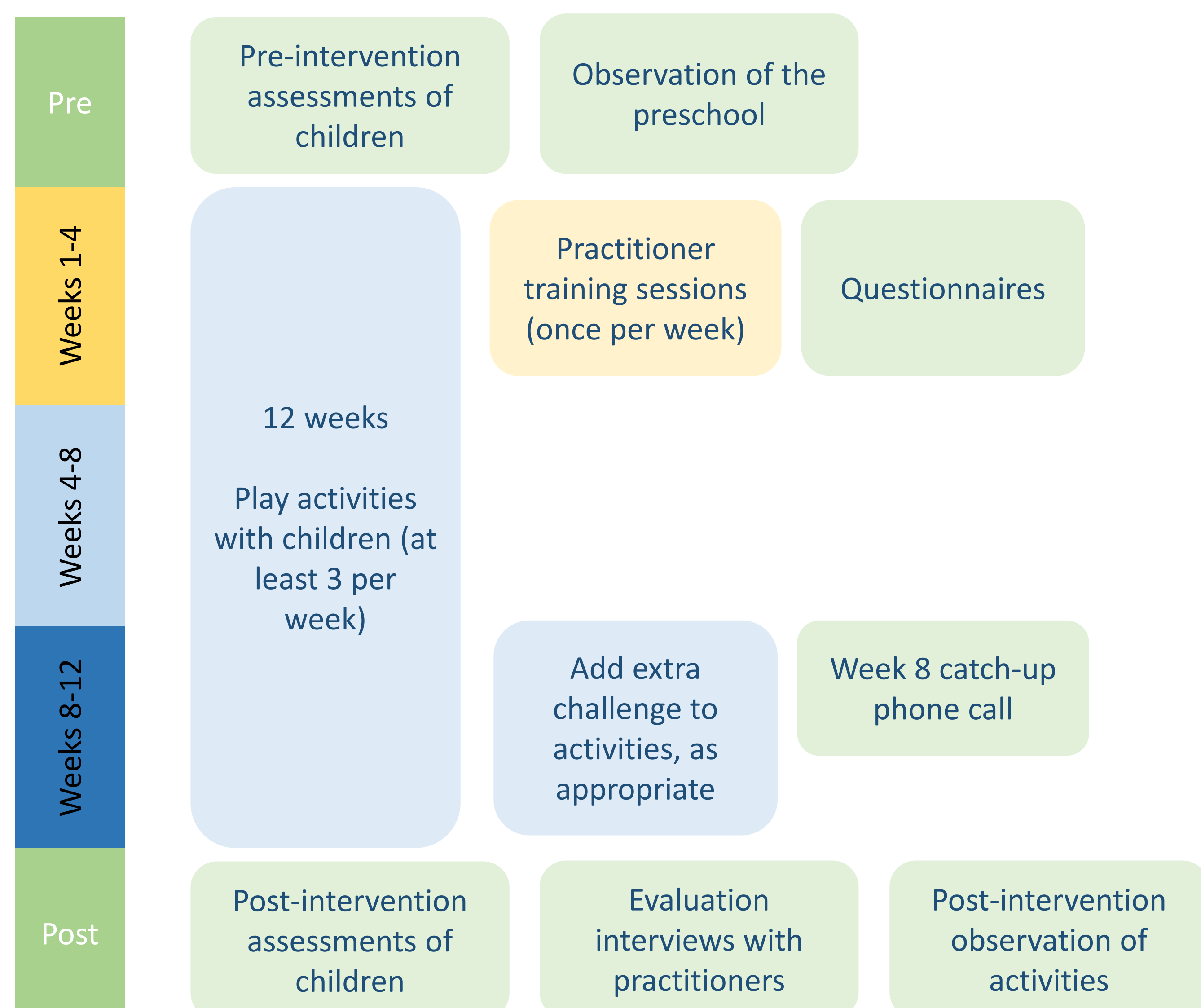
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Introduction

- The success of many intervention projects is dependent on teacher knowledge development and changes in teacher practice, but there is a disconnect between educational research and practice concerning professional development (PD) [1].
- Interventions' success is often assessed using child outcome measures and simple measures of fidelity/adherence, but these may not capture the complex factors that impact the success of an intervention.
- One factor that we need to understand is change in knowledge, but this can be difficult to capture in a non-confrontational way.
- We created a set of measures to examine changes in educator knowledge and practices after a PD-based intervention.

The ONE program

- The ONE program is an educator-led preschool intervention program, aimed at developing practitioner knowledge of early numeracy and executive functions.
- The intervention is composed of:
 - 4 x 30-minute weekly PD sessions
 - 25 x games for staff to play with children
- The ONE program presents an ideal opportunity to gain real-world, detailed input from educators. The success of the intervention depends on practitioner knowledge and ability to incorporate the PD into classroom practices.



Changes in educator knowledge across the intervention

Mind maps

- Educators were given blank mind maps to assess associations with key vocabulary terms. The number of spokes and accuracy of these spokes were used as measures of knowledge change.

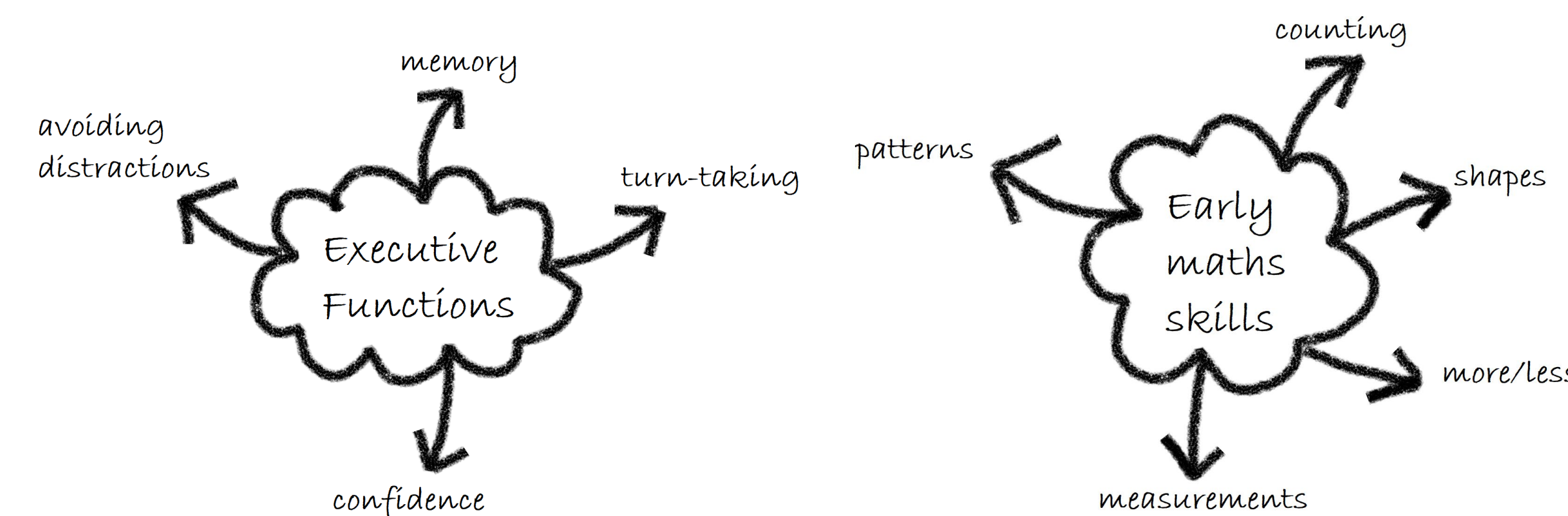


Figure 1. Example mind maps for two key constructs

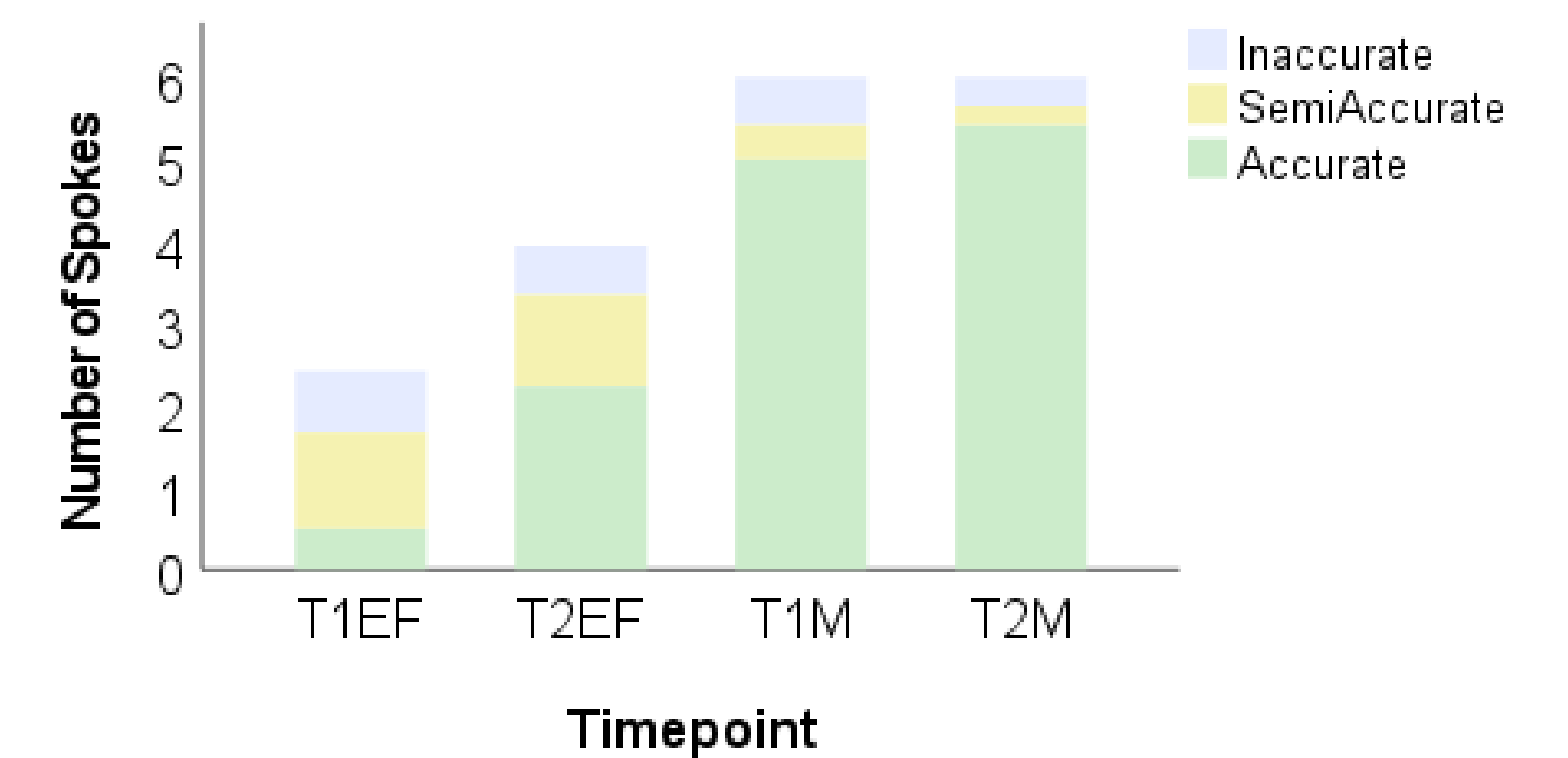


Figure 2. Changes in the number and accuracy of mind map spokes for math and EF at T1 (pre-PD) and T2 (post-PD)

Questionnaires and reflection questions: pre-PD and during PD

- Practitioners were given questionnaires prior to PD, with questions aimed to assess their prior knowledge and practices in key areas.

Post-PD: Interview and observation

- A post-PD interview captured educator's own perceptions of their learning in PD sessions and how this may impact upon their practices in the future.
- Post-PD, practitioners in all settings accurately described key aspects of math and EF when describing the aims of the intervention.
- Interviews revealed several barriers to fully incorporating PD into practice, including staff shortages, ability level of children, and lack of planning time.
- Example responses to "Have your practices changed as a result of taking part in the program? If so, how?":

"It's been great to have more of a maths focus. The PD helped the practitioners to focus more on the content and aims of the activities that we do."

"Maths has always been a priority for us, so the intervention has not massively changed our practices..."

5. Imagine that I am a new practitioner who knows nothing about the intervention. Talk me through what the project is about.

(Tick the elements that are mentioned)

- Maths elements: _____
- Executive functions described (terms not necessary)
- Adding extra challenge
- Activities

Figure 3. Example knowledge development interview question

Reflections and future steps

- No single measure of knowledge is sufficient to gain a good picture of educators' knowledge development.
- It is important to work collaboratively with educators to develop subject-specific, context driven tools to measure changes in both knowledge and practice [2-3].

References

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