BEYOND

EFFECTIVENESS OF RESEARCH ETHICS AND INTEGRITY COMPETENCE DEVELOPMENT – WHAT DO LEARNING DIARIES TELL US ABOUT LEARNING?

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OBJECTIVE AND RESEARCH QUESTIONS

In measuring training effectiveness, learning is a key indicator. Due to the variety of research ethics and integrity (REI) training formats it may be challenging to use a common instrument to monitor and evaluate learning and development.

We investigated reflective learning diaries used during REI training to monitor the learning and development as indicators of training effectiveness in a medium-to-long-term time span. We asked:

RQ1: How can learning diaries be used to understand the evolution of reflection and content knowledge during a REI course?

RQ2: How do learning diaries display long-term development of REI competences?

THEORETICAL UNDERPINNINGS

Reflection is a crucial part of ethics education as it supports the development of ethical sensitivity and ethical decision-making (Mustajoki and Mustajoki 2017; Löfström and Tammeleht 2023). Written reflection tasks may provide good results as writing offers a chance to pause and have an inner dialogue with oneself (Lázaro et al. 2022). Using written reflective tasks is not widespread in ethics courses (Watts et al. 2017; Stoesz and Yudintseva 2018; Katsarov et al. 2021). There is limited knowledge of criteria to evaluate REI learning based on reflective diaries.

METHOD

A micro-credential programme provided the context for our evaluative case study. We outlined the development of REI competencies of participants (N = 6) based on the learning diaries they kept during 1 semester. We analysed the long-term effects of the programme through a longer reflective task 5 months after the end of diary keeping. (See the illustration of our method in Figure 1).

WEEKLY DIARY KEEPING DURING ONE SEMESTER

4 INDIVIDUAL ENTRIES → 6 FORUM FORMAT ENTRIES → 5 MONTHS LATER → LONGER INDIVIDUAL REFLECTIVE TASK
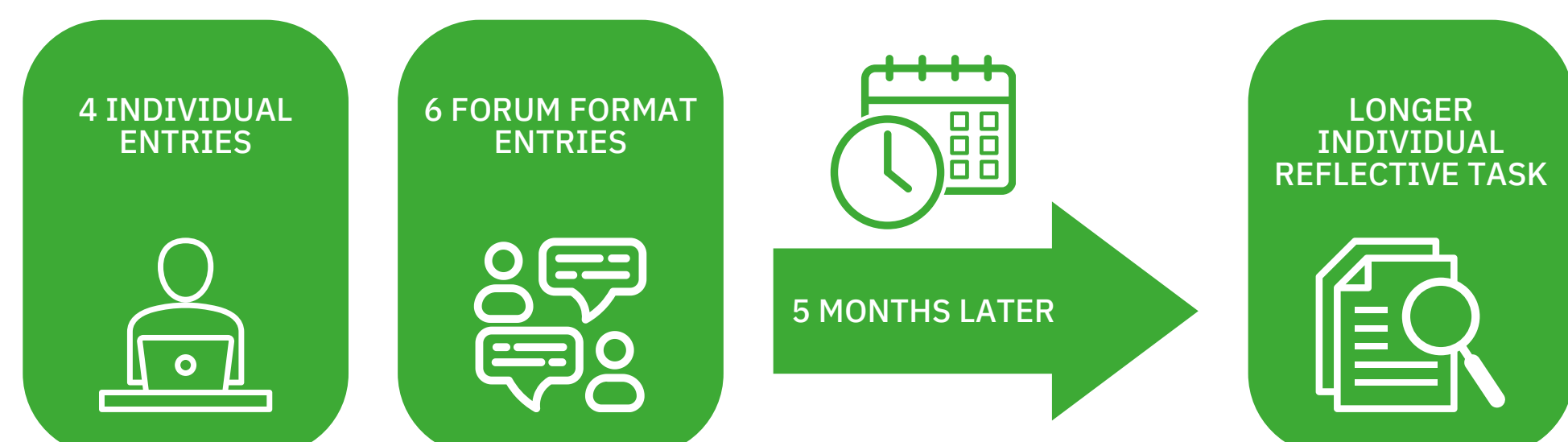
Figure 1. Three formats of written digital documents

We utilized the SOLO taxonomy (Biggs, 1999) to evaluate the level of understanding of REI topics in the diaries. We also used Mezirov's levels of reflection (Kember et al., 1999), and monitored presence of content knowledge (ethical principles, ethical analysis and ethical approaches) in the diary entries. Deductive content analysis was applied using MaxQDA software. All three authors coded the data.

RESULTS

Learning diaries can be used to support learners in making connections between various content criteria and enhance reflection, which is vital in ethical decision-making. Analysis of individual vs. forum format diary entries indicated that when learners have a chance to work in a group, they tend to notice more relevant topics as well as display higher levels of understanding (see in Figure 2) and reflection (see in Figure 3).
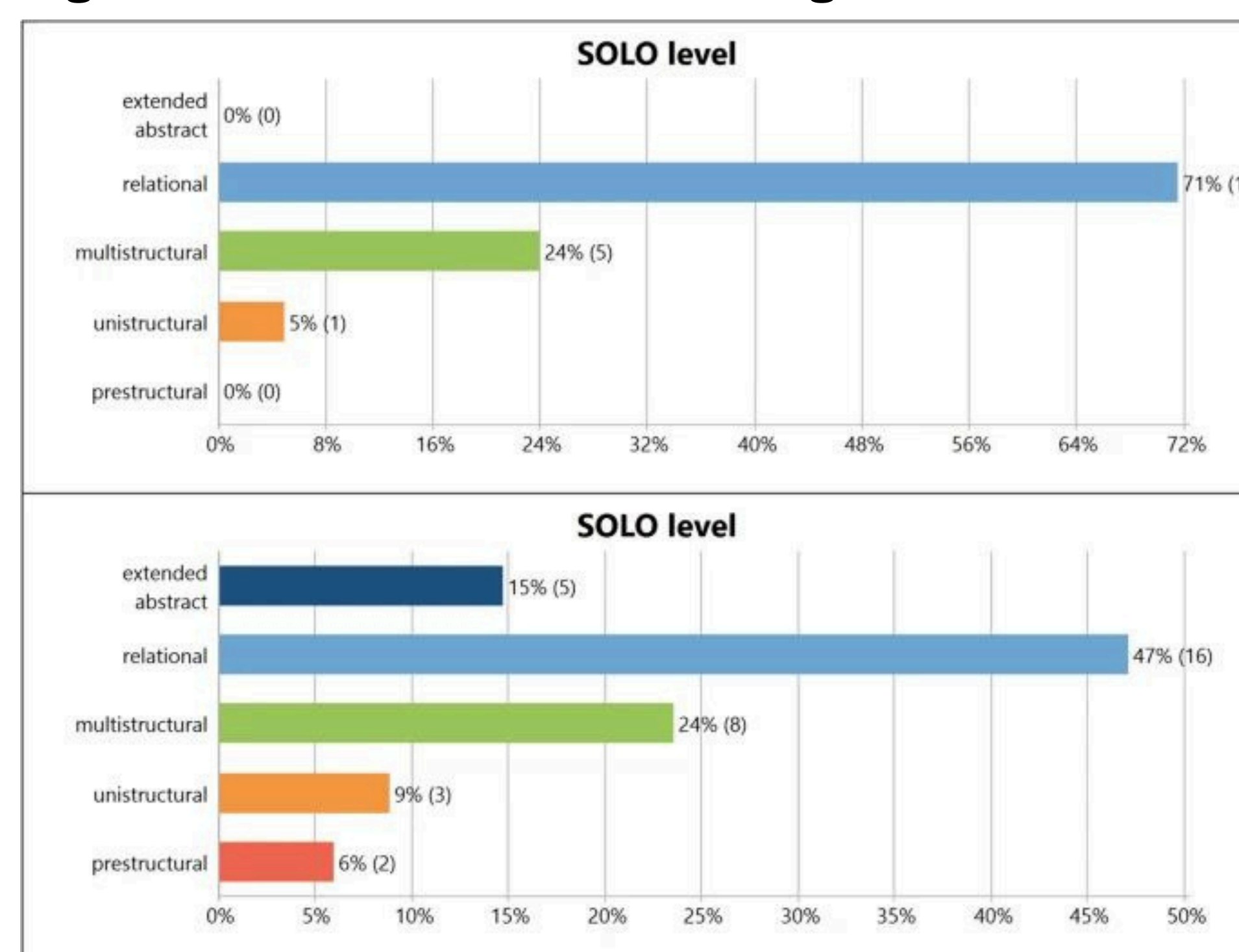

Figure 2. Levels of understanding (SOLO levels) in individual diary entries (top) (N = 21) and in forum format diary entries (bottom) (N = 32)
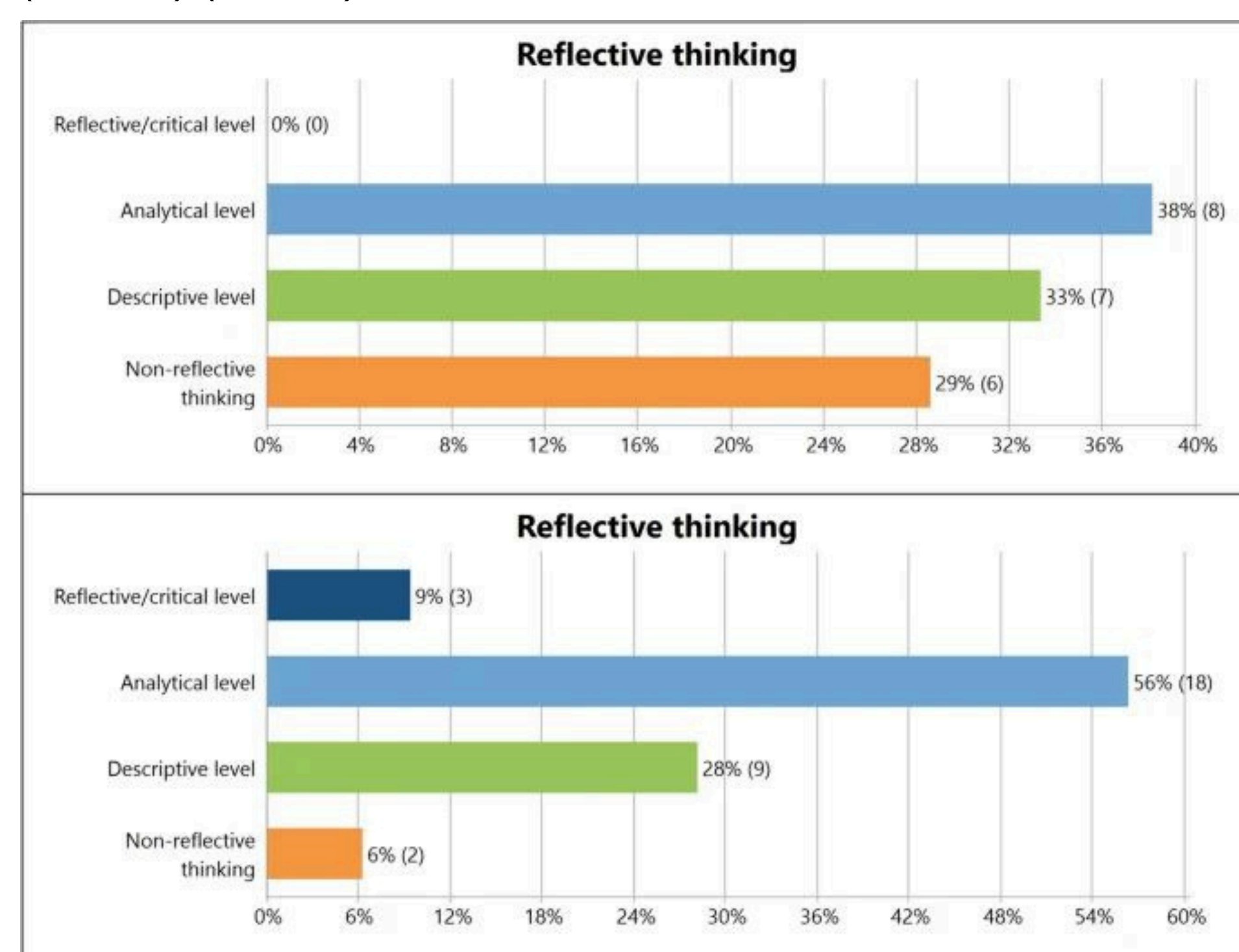

Figure 3. Reflection levels in individual logs (top) (N = 21 entries) and in forum format entries (bottom) (N = 32 entries)

The reflection levels improved over time. While during individual diaries about a third of entries displayed non-reflective thinking, this decreased during forum format and did not feature in the longer individual reflective task (CS task in Figure 4).
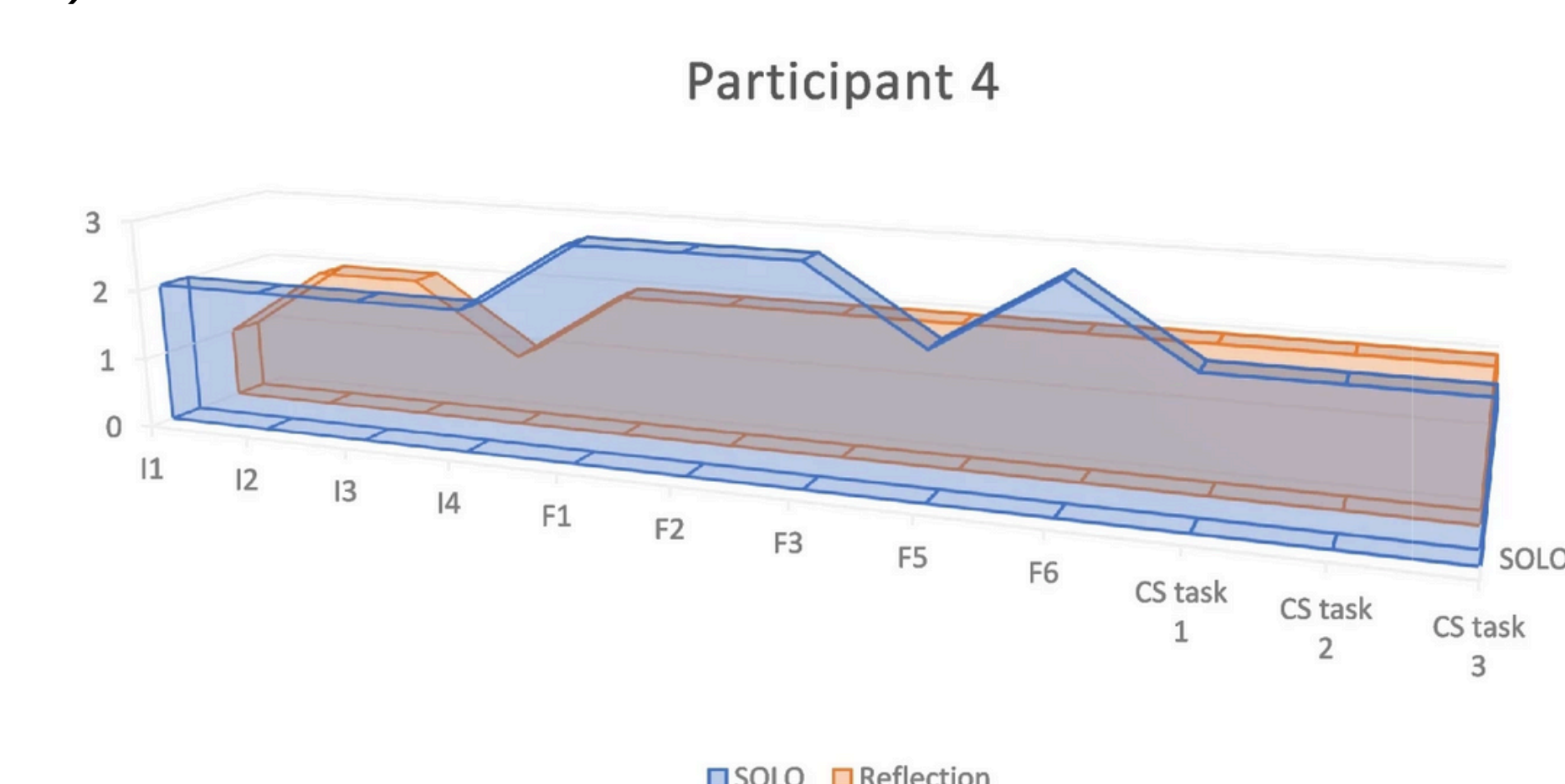

Figure 4. Example of an individual development trajectory

CONCLUSIONS

We conclude that learning diaries together with the presented evaluation criteria (content knowledge, levels of reflection and levels of understanding) can be used to monitor the evolution of learning as well as for measuring training effectiveness.

Results indicated that submitting learning diaries in the forum format supports displaying content knowledge on high levels of reflection and understanding. Submitting learning diaries during a longer period and making repeated submissions can improve reflection and understanding of REI. Set evaluation criteria make it possible to identify the learning process, and pinpoint challenging topics or misconceptions. Content criteria help identify relevant conceptions and aspects necessary for ethical decision-making. Monitoring these helps identify gaps in knowledge and needs for improvement. Levels of reflection and understanding provide a common framework for evaluating content knowledge.

RECOMMENDATIONS

We outlined recommendations for utilizing learning diaries in REI trainings.

- Use learning diaries to obtain information about how participants are learning in REI training.
- Use diary entries to evaluate individual progress.
- To make learning visible, use repeated repeated submissions over a period of several weeks or months.
- Forum format diary entries can be used to provide support to learners and enhance personal competence development.

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