

An Immersive Exploration of Self-Identity to Enhance Metacognitive Capacities

Rationale

We used the Metacognition Self-Assessment Scale (MSAS) to assess diverse **metacognitive capacities** (e.g., understanding mental states of self and others).

We aimed to enhance participants' metacognition and investigate effectiveness of a **novel three-session immersive training**.

The training utilized **EYME**, based on the **repertory grid technique (RGT)**, and **virtual reality (VR)** to explore **personal meanings** of self and others.

Method

Quasi-experimental pre-post study.
Sample: $n = 18$ participants aged 18 to 29 years.

Baseline: assessment of sociodemographic, MSAS, & other psychological measures.

Session 1: discuss personal and family background, areas of discomfort, and self-characterization.

Session 2: RGT administration using EYME.

Session 3: Exploration of the participant's "mental map" (see Figure 1) formed by their personal constructs as applied to self and others using both 3D navigation and a personalized VR space.

We evaluated MSAS Scale A (**self-reflectivity**), Scale B (**understanding other minds**), Scale C (**decentration**), Scale D (**mastery of coping**), and overall functioning (global).



Figure 1. 3D-representation of the position of each personal construct, self, ideal self, and significant others of a participant in our study.

Results

Medium effect size enhancement in **Mastery** (MSAS Scale D; $p = .03$). No significant differences found in other sub-scales or global MSAS.

Medium effect size **improvements in psychological well-being** (CORE-OM; $p < .01$), **self-esteem** (RSES; $p = .03$), and **problem-solving abilities** (MSAS Scale D; $p = .03$).

Medium to large effect size **decrease in depressive, anxiety, and stress symptoms** (DASS-21) ($p < .05$).

Conclusion

The training produced varied effects on metacognition.

Improvements in MSAS Scale D indicative of increased coping and problem-solving abilities.

Limitations: small sample size and potential ceiling effect.

Future Directions: The training requires further investigation to establish its efficacy.

The immersive training holds potential to **promote metacognition** in young people, and as an adjunctive intervention for many mental health conditions (e.g., personality disorders) in which metacognition is relevant.

Psychotherapy using VR with EYME.

