Validation on cognitive style questionnaires: Statistical evidence from Japanese EFL learners

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In SLA studies on cognitive style, Cohen et al.’s (2001) Learning Style Survey (LSS) and Ehrman and Leaver’s (2003) Learning Styles Questionnaire (E&L) underwent theoretical validation, and each includes similar subcategories based on major theoretical concepts (e.g., field-dependent vs. field-independent). However, there is insufficient evidence to statistically support their validity. The author (2014) chose 10 concepts of the LSS which focus on cognitive information processing (global, particular, synthesizing, analytic, sharpener, leveler, deductive, inductive, field-independent, field-dependent), and its exploratory factor analysis for 492 Japanese EFL undergraduates extracted four factors quite different from the 10 originals (top-down processing, bottom-up processing, synthesizing information, focusing on linguistic rules). This study has statistically explored the E&L to make suggestions for further validation, specifically to see whether or not the E&L shows the similar factor structure as in the author’s (2014) survey for the LSS.

Japanese EFL undergraduates (N=372) responded to the E&L. An exploratory factor analysis (maximum likelihood method, oblique rotation) for the same selected 10 concepts as mentioned above extracted two bipolar factors: top-down vs. bottom-up and field-independent vs. field-dependent.

The results revealed three helpful findings for validation efforts. First, top-down vs. bottom-up extracted in both the LSS and E&L is probably crucial at least for Japanese EFL learners. A possible reason is that Japanese educational backgrounds still focus primarily on details such as grammar rules and vocabulary (Izumi, 2009). It might enhance learners’ cognitive tendency for top-down vs. bottom-up distinction. Second, conversely, most original concepts were deleted in the factor analysis, and the remaining ones were assembled into different factors in each questionnaire, which might mean those unstable concepts are irrelevant to current Japanese EFL learners’ cognitive style. Third, wording problems with some question items seemed to interfere with accurate measurement, and partly affected the incoherent results between the two questionnaires.

Keywords: validity, Japanese EFL learners, cognitive style, exploratory factor analysis.