

Examination of the Validity of the Critical Thinking Disposition Scale at the Level of Graduate Students

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Abstract: *Critical thinking is a crucial skill that plays a vital role in academic success and personal growth. This study focuses on the adaptation of the Critical Thinking Disposition Scale for graduate students. The scale, originally developed for high school students, was modified to cater to the unique demands of graduate education. The data was collected from 225 graduate students and analyzed using the Mplus program. The adapted scale consists of 25 items in three factors: engagement, cognitive maturity, and innovativeness. The findings contribute to the field of critical thinking assessment and provide valuable insights for accurately measuring and developing critical thinking skills in the graduate student population.*

Keywords: *Critical Thinking, Scale Adaptation, Confirmatory Factor Analysis*

1. Introduction

Critical thinking is a vital skill that plays a pivotal role in the academic success and personal growth of individuals. It encompasses the ability to analyze, evaluate, and synthesize information effectively, enabling individuals to make informed decisions, solve complex problems, and think critically in various domains. Given its significance, the assessment of critical thinking skills has garnered substantial attention in educational research. Various measurement scales have been developed to evaluate critical thinking abilities, catering to different age groups and educational levels.

Critical Thinking Disposition Scale was developed in 2007 by Irani et al. and was adapted into Turkish by Kılıç and Şen in 2014. Kılıç and Şen (2014) collected data from secondary school students in their study. This study aims to contribute to the field of critical thinking assessment by focusing on adapting the existing scale adapted for high school students to graduate students. The transition from high school to higher education marks a significant shift in cognitive demands and academic expectations. Graduate students face complex challenges and are exposed to advanced discipline-specific knowledge that requires a deeper level of critical thinking skills. Therefore, tailoring the current scale to the unique demands of graduate education is crucial to accurately measure and develop critical thinking skills in this special population.

2. Method

The original scale is called UF/EMI (University of Florida Engagement, Maturity and Innovativeness) Critical Thinking Disposition Instrument and consists of 26 items in five-point Likert type. The Turkish adaptation was made by Kılıç and Şen (2014). The application was conducted on 342 high school students and as a result of confirmatory factor analysis, one item was excluded from the scale. The final form of the scale resulted in a 25-item scale in three factors, including engagement, cognitive maturity and innovativeness. The obtained Cronbach's Alpha internal consistency coefficient for the entire scale was 0,91.

In our study, we examined the factor structure of the scale for graduate level in Turkey, formerly adopted with Turkish high school students. The data was collected in 2022-2023 academic years from 225 graduate students, 149 females and 76 males. 182 students are PhD students and 43 of them are Master's students. 138 students are studying at the Faculty of Education while 87 of them are studying at different faculties. The data analysis was conducted using Mplus program version 8.3.

3. Results

Reliability of the collected data were examined, firstly. The Cronbach's alpha coefficient is 0.916 and McDonald's ω was 0.918. According to these findings, it can be said that the collected data is reliable. Also, Confirmatory Factor Analysis (CFA) procedure was conducted for the purpose of examine the factor structure of the scale. The main purpose of CFA procedure, to examine the factor structure of the scale for graduate level in Turkey, formerly confirmed in Turkish high school students.

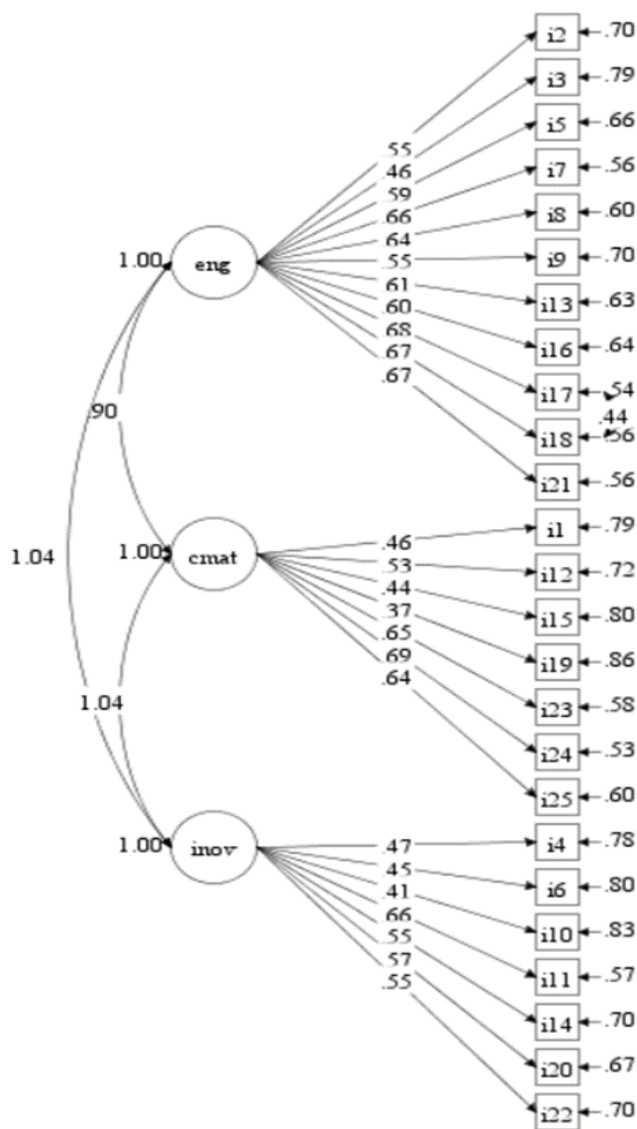


Fig. 1: CFA diagram of the scale

According to CFA findings, the three-factor structure was confirmed ($\chi^2=679.89$, $df=271$, $p<.05$; SRMR=0.07; RMSEA=0.08; CFI=0.81; TLI=0.79). The adapted scale consists of 25 items in three factors: engagement, cognitive maturity, and innovativeness. The factor loadings of the scale are varied between .37 to .69.

As a result of these analysis, the five Likert type scale can be used to examine the critical thinking disposition of graduate level students.

4. References

- [1] T. Irani, R. Rudd, M. Gallo, J. Ricketts, C. Friedel and E. Rhoades. (2007). Critical thinking instrumentation manual. [Online]. Available: <https://www.tntech.edu/citl/pdf/critical-thinking/UF-EMI.pdf>
- [2] H. E. Kılıç, and A. İ. Şen. “UF/EMI eleştirel düşünme eğilimi ölçeğini Türkçeye uyarlama çalışması”, *Eğitim ve Bilim*, vol. 176, pp. 1-12, December 2014.