

A study on the mediating role of different writing methods on the relationship between working memory execution and text quality.

A.

Introduction

EF is an umbrella term used to describe higher-order cognitive processes related to intentional goal-directed behaviour as text composition (Brydges et al., 2012), a few studies have investigated the relation between college students' EF and handwritten or keyboarded composition. The present study examined concurrent associations between EF and text composition quality, via both handwriting and keyboarding in a cohort of 19 years old college students.

B.

Objective

investigating the contribution of EF to text composition via both handwriting and keyboarding has implications for improving children's writing performance .

D.

Results

Correlations for all Study Variables.

1 2 3 4 5 6 7 8 9

Anticipatedly,handwriting automaticity would not mediated the relationship between college students' EF and handwritten composition quality. This findings will be opposite with other studies conducted with primary aged children (Drijbooms et al., 2015; Valcan et al., 2020). keyboarding automaticity and spelling mediated the relationship between college's EF and keyboard-based text composing and quality.

E.

Analysis

Anticipatedly,handwriting automaticity **would not** mediated the relationship between college students' EF and handwritten composition quality. This findings will be opposite with other studies conducted with primary aged children (Drijbooms et al., 2015; Valcan et al., 2020). keyboarding automaticity and spelling **would** mediated the relationship between college's EF and keyboard-based text composing and quality.

C.

Methodology

- 1.Participants included 200 college students (male) with a mean age of 19 years (SD = 0.02 years).
- 2.Executive functioning is measured by Head-Toes-Knees Shoulders (HTKS; Ponitz et al., 2008).
- 3.Handwriting and keyboarding automaticity is measured by Alphabet Writing Task (Berninger & Rutberg, 1992; Berninger et al., 2009).
- 4.Students' text composition quality was assessed via a written composition task.
- 5.Mediation analysis via structural equation modelling (SEM) using AMOS (Arbuckle, 2019) was the primary data analysis conducted. SEM, via the Maximum Likelihood (ML), was used to model the direct and indirect relations between EF, transcription skills (i.e., handwriting and keyboarding automaticity, and spelling fluency) and text composition quality, with separate models constructed for handwritten composition and keyboarded composition.
6. To investigate whether the strength of associations among variables differed between handwriting and keyboarding composition modes, a multi-group structural equation modelling (MG-SEM) analysis was conducted.
- 7.Correlations for all Study Variables.

1 2 3 4 5 6 7 8 9

- 1.HW rate
- 2HW accuracy
- 3HW fluency
- 4HW quality
- 5KB rate
- 6KB accuracy
- 7KB fluency
- 8KB quality
- 9Executive functing

F.

Conclusion

automaticity of keyboarding might meditates the relations between EF and text composition, offering potential educational intervention. For instance, identifying students with poor EF and developing curriculum that enhances opportunities for practicing EF may support studentss developing transcription skills, presumably impacting positively on composition quality.

References:

- Drijbooms, E., Groen, M. A., & Verhoeven, L. T. W. (2015). The contribution of executive functions to narrative writing in fourth grade children. *Reading & Writing*, 28(7), 989–1011. <https://doi.org/10.1007/s11145-015-9558-z>
- Feng, L., Lindner, A., Ji, X. R., & Joshi, R. M. (2019). The roles of handwriting and keyboarding in writing: A meta-analytic review. *Reading & Writing*, 32(1), 33–63. <https://doi.org/10.1007/s11145-017-9749-x>