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Title of your paper: Associations between students' reading performance and teachers' literacy instruction in Finnish first grade classrooms: A cross-lagged study

Abstract

In the search of providing most favorable instruction for students' literacy learning path, the research has focused on identifying effective teaching practices. While this aspect is still required, less is known, whether the students' skill level in the classroom is associated with the teacher's instruction. The present study attempts to include both of these aspects by examining the associations between students' reading performance and literacy instruction activities in the autumn and spring of first grade. Students' (n = 537) reading performance (word reading skills and reading comprehension) in 30 classrooms was assessed, and literacy lessons were video recorded in autumn and spring of first grade. The recordings of literacy lessons were coded following the guidelines of Individualizing Student Instruction (ISI) observation system (Connor, Morrison et al., 2009). Four different types of combinations of management (i.e. who is responsible in directing the students' attention to the task) and content were formed from the codings: 1) teacher/child-managed–code-focused activities (TCM-CF, e.g. joint practicing of decoding), 2) teacher/child-managed–meaning-focused activities (TCM-MF, e.g. joint discussions or comprehension tasks), 3) child-managed–code-focused activities (CM-CF, e.g. independent reading of words), and, 4) child-managed–meaning-focused (CM-MF, e.g. reading a story independently) activities. Preliminary results from multilevel cross-lagged analyses showed that higher level of students' word reading skills in the classroom in the autumn was associated with higher amount of CM-MF activities in the spring, whereas lower level in word reading skills in the autumn was associated with higher amount of both TCM-CF and CM-CF in spring. Higher amount of TCM-MF activities and lower amount of CM-CF activities in the autumn was associated with higher reading comprehension skill level in the classroom in the spring.

Keywords: word reading skills, reading comprehension, literacy instruction, observation, first grade

Extended summary

Introduction

Finnish students' reading skills vary extensively at school entry (Ukkola & Metsämuuronen, 2019). However, reading skill development is rapid especially among non-readers, and most of the students learn to decode words during the first semester (Lerkkanen et al., 2004). As suggested in the model of Simple View of Reading (Gough & Tunmer, 1986), reading comprehension develops as a separate construct. However, adequate level in reading fluency is required in order to draw meaning from the written texts, and, thus, reading fluency is associated with reading comprehension result especially in first grade in the Finnish context as well (Torppa et al., 2016).

Individualizing Student Instruction (ISI) observation system (Connor, Morrison et al., 2009) aligns with SVR (Gough & Tunmer, 1986) by in dividing the observed literacy instruction activities into code-focused (CF; activities supporting phonological recoding) and meaning-focused (MF; making meaning from the texts) activities. In addition, Connor, Morrison et al. (2009) make a difference in management of the instruction: Instruction can be considered as teacher/child-managed (TCM) if the teacher and students are jointly focusing the students' attention to the task, or child-managed, if the students are responsible in directing their attention to the task and, thus, working independently or with some other student(s). Four combinations can be formed based on these two dimensions, namely TCM-CF, TCM-MF, CM-CF, and CM-MF. Connor, Morrison et al. (2016) claim that students' prior reading skills affect which type of activities are beneficial for them (e.g., Connor, Piasta et al., 2009). Students with lower skill level have been shown to benefit more from TCM-CF, whereas the students who already master these skills benefit more from CM-MF activities (e.g. Connor, Piasta et al., 2009; Ruotsalainen et al., 2020). There are some studies (e.g. Kikas et al., 2018) indicating that teachers adapt their instruction based on the skill level in the classroom but research on this aspect is scarce.

The aim of the present study was to examine the associations between students' reading performance (word reading skills and reading comprehension) and literacy instruction activities of TCM-CF, TCM-MF, CM-CF, and CM-MF during the first grade. It was hypothesized, that higher amount of CF activities would be associated with higher word reading skill level and MF activities with reading comprehension. In addition, it was hypothesized that the lower word reading skill level in the classroom would be associated with higher amount of TCM-CF and higher word reading skill level to higher amount of CM-MF activities, respectively.

Method

The study was conducted in 30 classrooms in the autumn and spring of first grade (school year 2017–2018). Literacy lessons in each classroom was video recorded and analysed with respect to combinations of management and content (i.e., TCM-CF, TCM-MF, CM-CF, CM-MF activities) in 10 seconds accuracy following the Individualizing Student Instruction (ISI) classroom observation system (Connor, Morrison et al., 2009). Students (n = 537) were assessed individually on their reading accuracy (Lerkkanen et al., 2006) and fluency (Häyrinen et al., 1999) both in autumn and spring, and in reading comprehension (Lindeman, 1998) in the spring by trained investigators.

For the analyses, percentages of the instructional activities (duration of the activity type divided by lesson duration) were calculated to illustrate the extent to which the teacher employed different

types of literacy instruction activities during the lesson. Reading performance measures were standardised, and a mean score with equal weight of reading accuracy and fluency was calculated for word reading skills. Cronbach's alphas for the new word reading skill measure were .84 in the autumn, and .62 in the spring. Cronbach's alpha for reading comprehension was .70.

Differences in the level of students' word reading skills between classrooms were small but significant (Autumn ICC = .05, p = .032; Spring ICC = .03, p = .025) and, hence, four multilevel cross-lagged analyses were conducted of the associations between students' reading performance and different combinations of management and content using the Mplus statistical package (Version 7.4; Muthén & Muthén, 1998–2012). Teachers' work experience and mother's educational level were controlled for on between level. On within level, students' gender and mother's educational level were controlled for.

Results

Preliminary results indicated, that even though there were a lot of variation in the extent of different activities, most of the instructional time in the autumn was spent on TCM-CF (M = 22.66%, SD = 13.10%) and CM-CF (M = 27.07%, SD = 20.29%) activities while the emphasis shifted to MF activities in the spring (TCM-MF: M = 34.22%, SD = 16.58%; CM-MF: M = 18.30%, SD = 18.41%). The word reading skill level in the classroom in the autumn was negatively associated with TCM-CF (β = -.55, p < .001) and CM-CF (β = -.47, p = .003) activities, and positively with CM-MF (β = .83, p < .001) in the spring. None of the activity types in the autumn was associated with word reading skills in the spring. In contrast, higher amount of TCM-MF (β = .36, p = .008) and lower amount of CM-CF (β = -.41, p = .007) in the autumn were associated with higher reading comprehension level in the classroom in the spring.

Conclusions

Overall, teachers were adapting their instruction to the level of word reading skills in their classrooms. This was shown both in higher emphasis on CF activities in the autumn in the full sample, and in prolonged emphasis on CF activities in the spring in classrooms where there were more beginning readers in the autumn. When the word reading skills in the classroom were higher in the autumn (i.e. more students who were able to read), more time was spent on independent working on sentence and text level reading and writing tasks in the spring (i.e., CM-MF). The positive association between TCM-MF activities (e.g. story reading and class discussions) in the autumn and reading comprehension level in the classroom in the spring provides support for the need to include activities that promote students' vocabulary and comprehension already before they are able to read lengthy texts by themselves.

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