

Glenwood Public School

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Inquiry Question: How does using technology in the learning commons impact the development of phonological awareness skills in Early Years students?

Abstract

This study focused on the use of technology to provide direct instruction on phonological skills to Early Years French Immersion students. Two groups of students were given pre - assessments of their phonological awareness skills. One group of students received additional instruction on phonological awareness skills with the teacher-librarian in the Learning Commons, while the second group of students received instruction only with their classroom teacher. The teacher-librarian developed a Smart Notebook file of interactive phonological awareness skill activities and used the file to provide the students she saw each week with direct instruction. Post assessment data indicated that direct teaching of phonological awareness skills did increase the speed of sound identification in the inquiry group of students over the classroom-only students but increases in the accuracy of letter-sound identification was similar between both groups. The Smart Notebook file created would be useful to teacher-librarians and for classroom teachers to use as support for the development of phonological awareness skills in Early Year and Primary classrooms.

Introduction:

The purpose of this study was to develop technology support for teacher-librarians to use in the learning commons environment to support the development of phonologic awareness skills in Early Years students. Research suggests that the development of the various phonologic awareness skills - sound, word and syllable recognition; substituting, segmenting, blending, and deleting sounds in words; and rhyming words – are foundational to the development of literacy (Trehearne, 2011). While the students involved in this inquiry were enrolled in French Immersion programs, there is considerable research that suggests that strong phonologic awareness skills in one language support the development of a second language and further, that teaching phonologic awareness skills in English will transfer to a second language. Immersion students who are at-risk need to be identified early using English or French measures as both predict French reading ability in later grades (Cummins, 1998).

The teacher-librarian in this inquiry is interested in supporting the pre-reading activities and phonological awareness skills that teachers in the Immersion Early Years classrooms are incorporating as suggested in Together for Learning (2010). Further, Together for Learning (2010) and the teacher-librarian both recognize the benefits of incorporating technology in the Learning Commons activities as a tool for engaging students and

increasing their technological skills. Smartboard technology was selected as a strategy to provide the explicit phonologic awareness skills that Yopp and Yopp(2000) argue is so imperative to Early Years learners. He suggests that phonologic awareness skills instruction should not only be explicit, but playful and engaging, interactive and social and should stimulate curiosity and experimentation with language (Yopp, 1992). Technology was seen as an excellent strategy within the Learning Commons to reach these criteria.

Context of the Study

This inquiry took place at a school that hosts 9 French Immersion Early Years classrooms. For many of the students participating in the inquiry, neither English nor French was their first language. Two classrooms of students were regularly instructed two periods a week by the Learning Commons teacher using a Smartboard and a Smart Notebook file expressly created for the inquiry which was focused on phonologic awareness skill attainment (see attached Notebook). Two additional classrooms of students were selected who did not see the teacher-librarian to act as a control group. The use of a control group was necessary to determine if the additional explicit instruction was a factor in students' phonological awareness skill growth over and above the maturation of students and their instruction outside the Learning Commons.

Methodology and Data Collection

Twelve students in total were selected for the inquiry. Six of the students from two different French Immersion classrooms met with the teacher-librarian two times a week. During part of these periods in the Learning Commons, students were given an opportunity to use the Smartboard and the Smart Notebook file on phonologic awareness skill attainment. The activities were interactive and students engaged in them as playful games. Six other students were randomly selected from classrooms that did not meet with the teacher-librarian in the Learning Commons. While the classroom teacher engaged in phonologic awareness skill development activities, students did not receive additional opportunities to practice and play with the interactive phonologic awareness games using the Smartboard in the Learning Commons with the teacher-librarian. All activities were conducted in English.

All students were administered the DIBELS assessment of Initial Sound Fluency both at the beginning of the inquiry and at the end of the inquiry by the Instructional Coach aligned to the school and a member of the inquiry team. This assessment was done in English. Both the time taken to complete the assessment and the number of correct responses were recorded. Students were asked to identify the initial sound they heard in words by pointing to a picture following specific prompts from the examiner. The examiner identified the pictures by saying for example.

‘This is tomato, cub, plate, doughnut (point to pictures).

1. Which picture begins with /d/?
2. Which picture begins with /t/?
3. Which picture begins with /k/?
4. What sound does “plate” begin with?”

Findings

The following chart outlines the results of the pre and post assessments.

Figure 1

Student	Initial Sound Fluency Time Learning Commons Instruction		Student	Initial Sound Fluency Time Classroom only Instruction	
	PRE	POST		PRE	POST
1	2:36	1:07	9	2:34	2:08
2	2:05	1:20	10	1:39	3:40
3	2:58	1:22	11	1:49	1:50
4	4:26	1:35	12	3:09	1:59
5	1:15	1:21			
6	2:35	1:17			
7	2:25	1:47			
8	3:30	1:22			

Figure 2

Student	Initial Sound Fluency Correct Responses Learning Commons Instruction		Student	Initial Sound Fluency Correct Responses Classroom only Instruction	
	PRE	POST		PRE	POST
1	14	14	9	11	15
2	15	14	10	13	15
3	9	8	11	14	14
4	15	16	12	14	16
5	14	15			
6	14	16			
7	2	13			
8	16	16			

Figure 1 data measures the time it took for each student to complete the assessment of 16 questions as listed in the example above. In the DIBELS assessment, time is used as a measure of the students' phonologic awareness fluency. The faster a student identifies the sound, the more fluent they are. Results suggest that the fluency of students who received the additional phonologic awareness skill instruction in the Learning Commons through the Smartboard activities, improved on average 1.06 minutes between the pre-assessment and the post-assessment. Students who only received instruction in the classroom did not improve significantly, in fact, 2 of the 4 students were slower to complete the assessment in the post trial.

Figure 2 data measures the number of correct responses on the DIBELS assessment of Initial Sound Fluency. Students who received instruction only in their classroom showed greater improvement than those students who had the additional phonologic awareness skill

instruction in the Learning Commons. This suggests that accuracy in the identification of phonologic skills was not improved through the inquiry strategies.

Recommendations

The results of the inquiry suggest that using the Smartboard to engage students in explicit phonologic awareness skill development activities increases their fluency for identification of sounds. However, it does not appear that the accuracy of their phonologic awareness skills was impacted by the use of this technology. This could have been the result of a number of factors. Many of the activities in the Smart Notebook created for the inquiry involved songs and rhymes. Different strategies must be used to help students focus on the sounds instead. This speaks to the care that teachers need to take in selecting activities that truly support phonologic awareness rather than sentence or word awareness. Secondly, the fact that for many of the students in the inquiry English was not their first language, may have impacted the accuracy of their responses. Future inquires should focus on more explicitly selecting activities that develop phonologic awareness using strategies such as waving hands when rhymes are heard, stomping feet along with alliterations, clapping the syllable in names and using blocks when segmenting words. Technology can still be integrated in these activities in the Learning Commons environment to support the accuracy in student's acquisition of phonologic awareness skills. Students need multiple opportunities to focus on the parts of words, identify the parts and manipulate the parts of words in their oral language in order to develop the necessary phonologic awareness skills to support reading and writing.

Conclusion

This study sought to investigate the acquisition of phonologic awareness skills using technology in the Learning Commons. Twelve students were selected for the inquiry from French Immersion Early Years classrooms. Eight of the students received additional explicit instruction in the Learning Commons environment in order to augment classroom instruction. This instruction consistently used the technology of a Smartboard to engage and motivate students in the learning activities. Results suggest that while the additional instruction greatly increased students' fluency in the identification of initial sounds, it did not significantly improve the accuracy of their responses. Further inquiries should focus on the selection of phonologic awareness activities in order to ensure that they are differentiated for the particular students' needs. The teacher-librarian is uniquely positioned in the Learning Commons to augment classroom instruction, provide additional opportunities for practice and to integrate technology in instruction. Further Smart Notebook files could be created to support early literacy skills that are being taught in the classrooms. The teacher-librarian can support components of the Learning Commons by providing the physical and virtual spaced for the development of phonologic awareness skills, by creating learning partnerships with classroom teachers to develop Early Year students' phonologic awareness skills, and by embedding technology in the learning of those skills to support the development of crucial early literacy skills.

References

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