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Speech Recognition in Classrooms

Objectives

To investigate children's ability to understand speech in typical classroom situations and to develop a basis for classroom acoustics design criteria.

Background

There are indications that excessive noise and inadequate acoustics are common problems in classrooms and in some cases may impair children's ability to understand spoken words. Because most learning situations involve listening, the potential impact of these deficiencies on educational development is very significant. The same acoustical factors are frequently thought to lead to voice problems in teachers, who must speak loudly to be understood. Research is needed to develop a solid technical basis for design guidelines.

Statement of Work

The research will consist of the following tasks:

- Measure three types of acoustical factors in typical classrooms: teachers' voice levels; ambient noise levels; and room acoustics conditions
- Determine, using speech recognition tests, how children's ability to understand speech varies with these factors as well as with age
- Assess teachers' voice quality and attempt to relate these data to the acoustical measurements in the classrooms.

Expected Outcomes

The project will provide a more precise and more comprehensive assessment of the likelihood of speech communication problems for students and teachers in typical classrooms. The results will be used to derive recommendations for identifying the acoustical conditions that would enable teachers and students to speak and be understood without straining. The results will also help avoid unnecessarily stringent and costly acoustical requirements based on speculations from partial results.

Partner

This project is a part of the Canadian Language and Literacy Research Network (CLLRnet): www.cllrnet.ca

Start/Completion Dates

The project began in 2003 and will be completed in 2008.

Project Manager

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For more information, see http://irc.nrc-cnrc.gc.ca/ie/acoustics/speechrec_e.html

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Better design will improve classroom acoustics