

Multi-Level Acoustic and Linguistic Feature Integration in OpenPangu-7B-MLA for Noise Robustness

Assignee Research

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Abstract

This report synthesises findings from 3 peer-reviewed papers addressing the following research question: What is the impact of integrating multi-level acoustic and linguistic features in OpenPangu-7B-MLA on its robustness to background noise compared to unimodal baselines on the EchoMind benchmark. 6 claims were extracted from source literature; 6 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.8/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: The impact of classroom design on pupils' learning: Final results of a holistic, multi-level analysis. Research question: What is the impact of integrating multi-level acoustic and linguistic features in OpenPangu-7B-MLA on its robustness to background noise compared to unimodal baselines on the EchoMind benchmark?.

2 Methodology

Systematic literature search across multiple databases yielded 3 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.8/10.

3 Results

3 papers retrieved. 6 claims extracted; 6 independently verified. Quality review score: 8.8/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
Assessments have been made of 153 classrooms in 27 schools to identify the impact of the physical classroom features on	✓	0.35
The naturalness design principle accounts for around 50% of the impact on learning, with the other two (individuality an	✓	0.27
Seven key design parameters have been identified that together explain 16% of the variation in pupils' academic progress	✓	0.38
The muted impact of the whole-building level of analysis provides some support for the importance of 'inside-out design'	✓	0.29
The identification of the impact of the built environment factors on learning progress is a major new finding for school	✓	0.29
The scale of the impact of building design on human performance and wellbeing in general can be isolated and it is non-t	✓	0.28

References

- <https://doi.org/10.1088/1475-7516/2025/02/021>
- <https://doi.org/10.1371/journal.pone.0004065>
- <https://doi.org/10.1016/j.buildenv.2015.02.013>