

Key Paper:

**Influence of Artificial
Intelligence in Education
on Adolescents' Social
Adaptability: A Machine
Learning Study**

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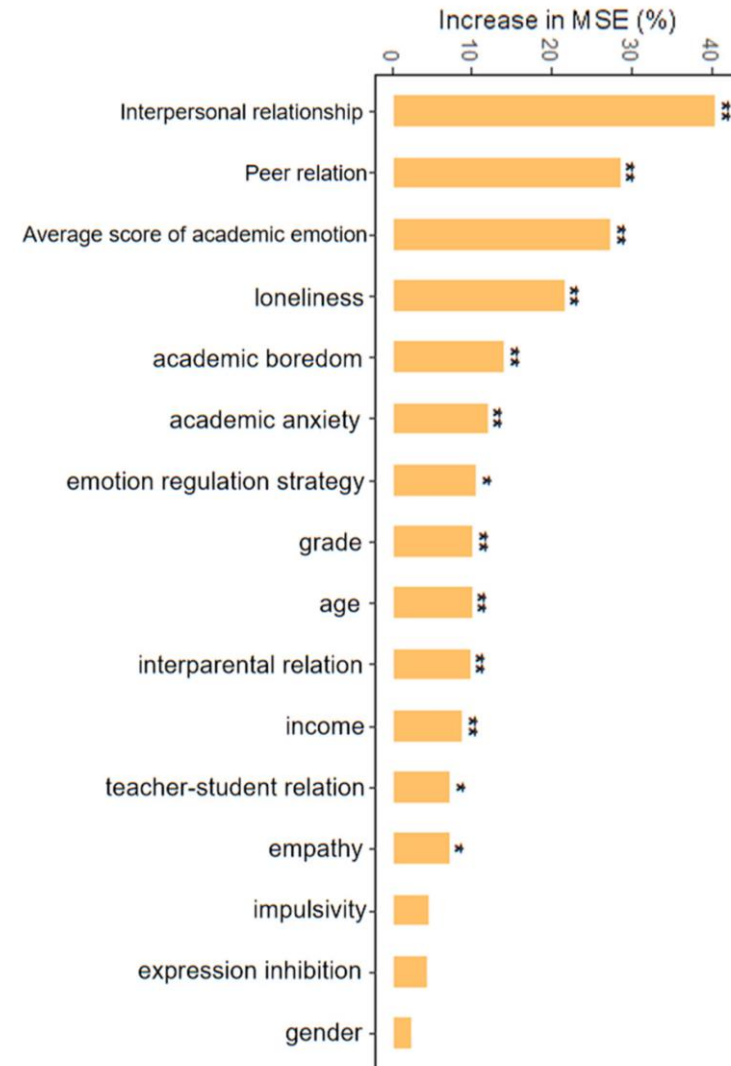
Introduction and Relevance

- Previous Work:
 - Positive, Tool for teachers
 - Ethics concerns – privacy, malicious uses, social impact
- Social Adaptability Factors:
 - Teacher-student and peer relationships
 - Personality including loneliness and impulsivity
 - Academic emotion and emotional regulation
- Methodology
 - Controlled for grade, income, age
 - Questionnaire
 - ML for analysis

Key Findings

- Adolescents in AIEd environments demonstrated higher levels of social adaptability compared to traditional learning
- The most contributing factors to social adaptability were:
 - Interpersonal relationships
 - Peer relations
 - Academic emotions
 - Loneliness
- Adolescents who used AI due to personal interest had the highest social adaptability scores
- 89.3% of participants believed that AIEd had a positive effect, and those students also showed significantly higher social adaptability scores
- Contextual and individual factors underscore different aspects of social development
- AIEd could be a useful tool for emotional and academic support
- Authors emphasized need for future research to determine root causes

- Importance Ranking of Variables on Social Adaptability

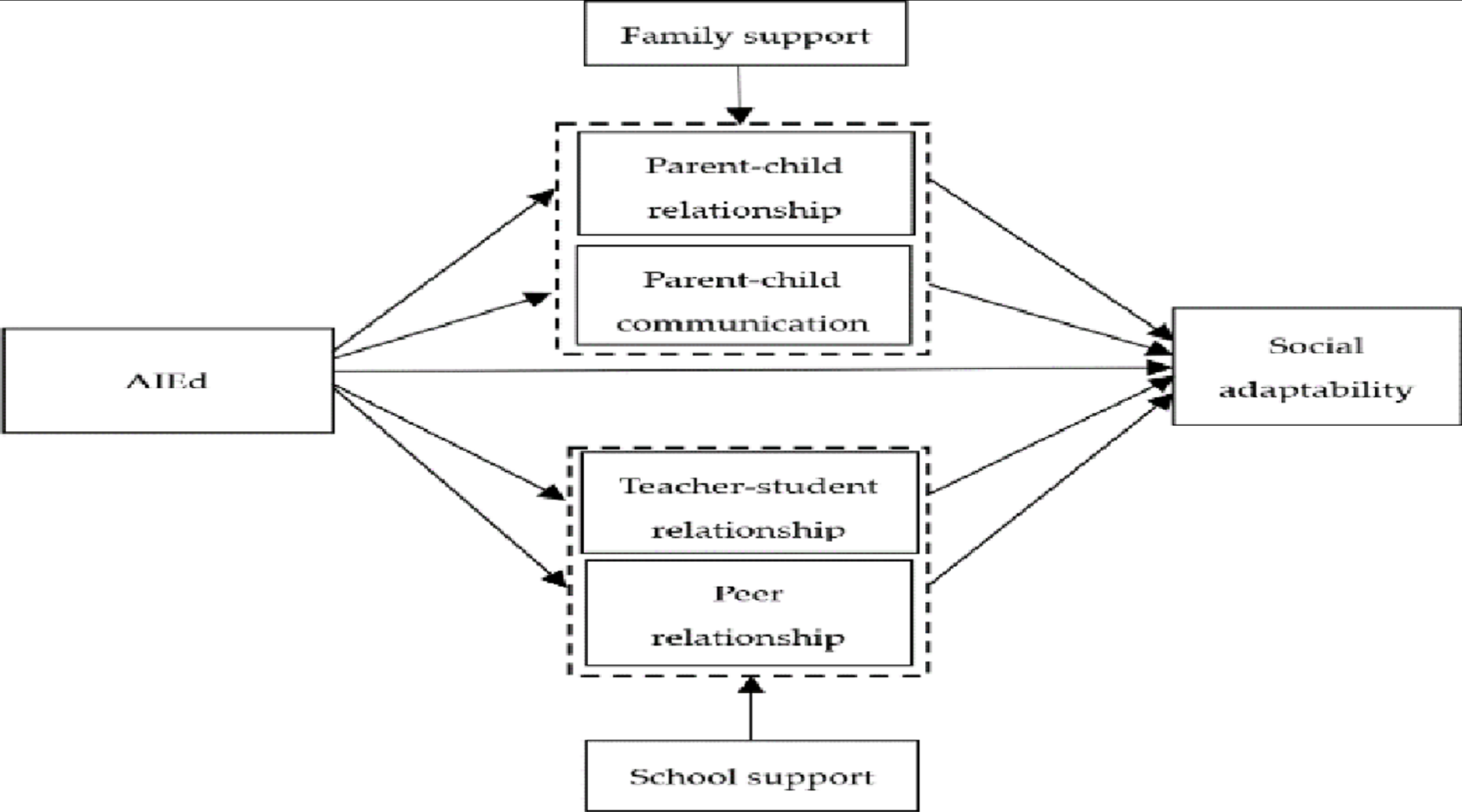


Limitations of Paper

- **Selection Bias:** Participants were from AI demonstration schools in Guangdong, China, limiting generalizability due to the narrow geographical and cultural scope and potential predisposition towards AI.
- **Self-Reported Data:** Heavy reliance on questionnaires introduces response bias, as participants may have reported what they thought was expected rather than their true experiences.
- **Generalization of AIEd Impact:** The study doesn't distinguish between different AI tools, which may vary in their effectiveness, leading to overgeneralized conclusions.
- **Influence of Teacher & Parent Pressure:** External motivations could bias outcomes, as students using AIEd due to pressure showed different adaptability results compared to those with intrinsic motivation.

Response to AI in Education Impact Study: Counterarguments and Insight

- Lower social adaptability in students that were heavily dependent on AIEd, especially if their family support was insufficient
- Higher social adaptability in those with good family support
- Weakens nonverbal behaviors such as eye contact and smiling
- As AIEd advances, human to human interaction will become less common in classrooms and this problem will worsen
- AIEd has potential to be revolutionary but must be implemented thoughtfully



How We Plan to Expand Upon This

- Xie et al. focused on AIEd's use specifically in academia
 - + We plan to expand this to AI in a caretaker role, inside and outside the classroom
- Xie et al highlighted the importance of student-teacher relationship for social adaptability
 - + This will cause a significant decrease in the social adaptability of the students, as Xie et al showed how important this relationship is
- Response paper highlights importance of family relationships
 - + We will expand upon this by considering AI lessening the role of parents and the impact this may have on adaptability as well
- Xie et al shines a positive light on the current state of AIEd
- Our research will project this onto the future and paint a grimmer picture

Questions?

References

- **Xie, C., Lai, T., Ruan, M., Wang, Z., Lu, H., & Fu, S. (2022).** Influence of artificial intelligence in education on adolescents' social adaptability: A machine learning study. *International Journal of Environmental Research and Public Health*, 19(13), 7890. <https://doi.org/10.3390/ijerph19137890>
- **Lai, T., Xie, C., Ruan, M., Wang, Z., Lu, H., & Fu, S. (2023).** Influence of artificial intelligence in education on adolescents' social adaptability: The mediatory role of social support. *PLOS ONE*, 18(3), e0283170. <https://doi.org/10.1371/journal.pone.0283170>