Writing Ability and Gender as Moderators of the Relationship Between Instrumental Motivation and Academic Self-Efficacy

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Background and Purpose

Studies have shown that students with high academic self-efficacy are more likely to perform better in the classroom and other environments.

Purposes:

- To examine the extent to which instrumental motivation (utility interest) predicts academic self-efficacy
- To test the moderating effect of home literacy resources, student writing ability, and gender on the relationship between instrumental motivation and academic self-efficacy, controlling for the reading interests and habits of high school students

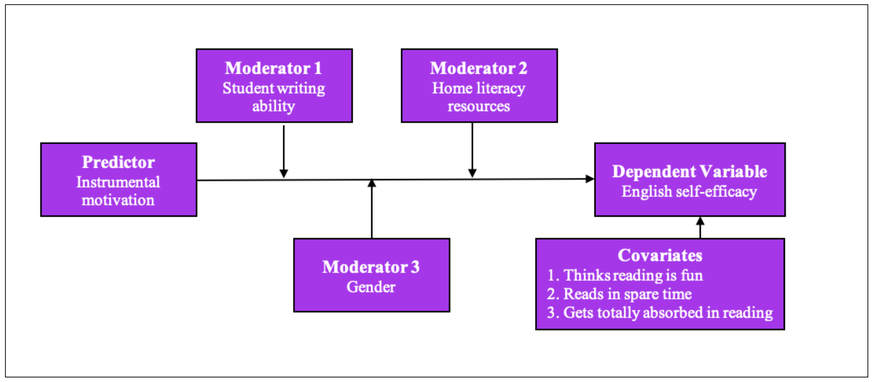
Methods

- **Design:** Descriptive correlational
- **Data Source:** Education Longitudinal Study of 2002
- **Sample:** 11,000 tenth grade students obtained using complex stratified cluster sampling; the sample was weighted to ensure its representativeness to the national population of 10th graders.
- **Data Analyses:** Multilevel hierarchical multiple regression using AM Software by the American Institutes of Research

Results

- Model 1 with instrumental motivation alone accounts for 25.5% of the variance in self-efficacy $F(1, 389) = 1619.05$, $p < .001$.
- Model 2 with instrumental motivation and the covariates of reading interests accounts for 32% of the variance in self-efficacy. The reading interest variables explain 7.5% of variance in self-efficacy.
- The three moderator variables collectively account for 4.7% of variance in self-efficacy. Student writing ability is the only significant moderator ($B = -0.09$, $p < .001$).
- Differences in self-efficacy between students of different writing levels significantly decrease as instrumental motivation increases.
- The amount of home literacy resources did not significantly moderate the relationship between instrumental motivation and self-efficacy.
- Though not significant, as instrumental motivation increases, the difference in self-efficacy between males and females increases, with females having higher mean values than males across the whole range of the predictor variable.

Conceptual Model



Regression Equation

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_1X_2 + \beta_9X_1X_3 + \beta_{10}X_1X_4$$

Where:

X_1 = Instrumental motivation
X_2 = Student writing ability
X_3 = Gender
X_4 = Home literacy resources
X_5 = Thinks reading is fun
X_6 = Gets totally absorbed in reading
X_7 = Reads in spare time

Model Summary

Parameter Name	Estimate	Std. Error	t-Statistic	p > |t|
Constant	-0.918	0.056	-16.536	<.001
Instrumental motivation (utility interest) scale	0.35	0.038	9.138	<.001
Thinks reading is fun	0.149	0.024	6.202	<.001
Reads in spare time	0.056	0.021	2.683	0.008
Gets totally absorbed in reading	0.073	0.018	3.98	<.001
Home literacy resources	0.067	0.013	5.244	<.001
Student writing ability (teacher-reported)	0.218	0.011	18.943	<.001
Gender	0.109	0.023	4.751	<.001
X_1 interaction with home literacy resources	0.024	0.014	1.715	0.087
X_1 interaction with writing ability	-0.09	0.012	-7.715	<.001
X_1 interaction with Gender	0.031	0.024	1.278	0.202
Mean Square Error	0.626	--	--	--

AM Statistical Software Beta Version 0.06.04. (c) The American Institutes for Research and Jon Cohen

Table 1. Interaction: Instrumental Motivation × Home Literacy

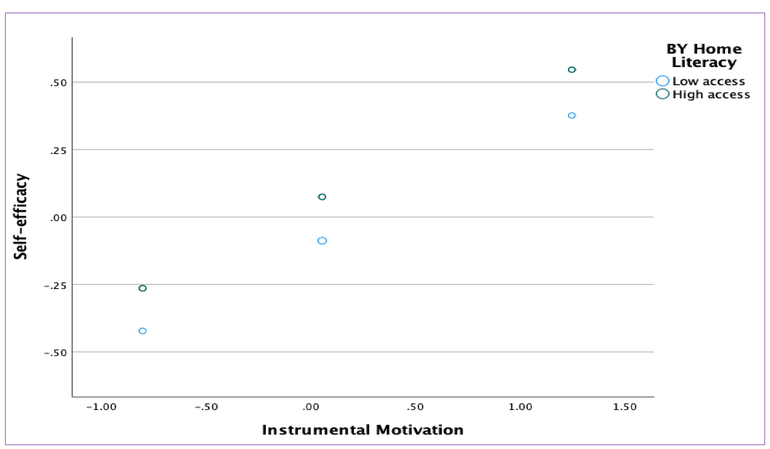


Table 1. Interaction: Instrumental Motivation × Gender

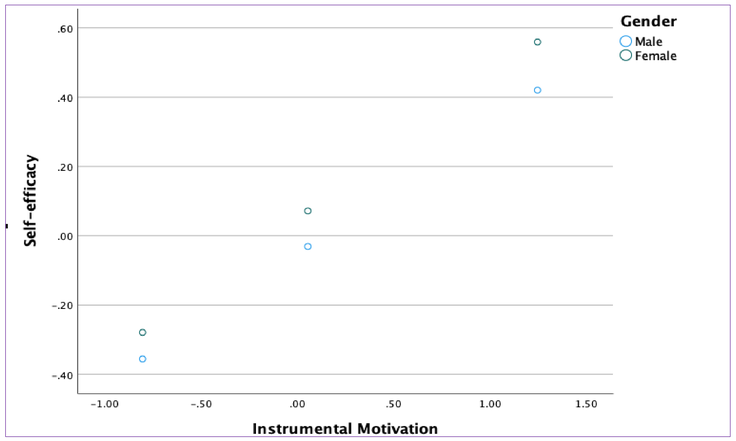
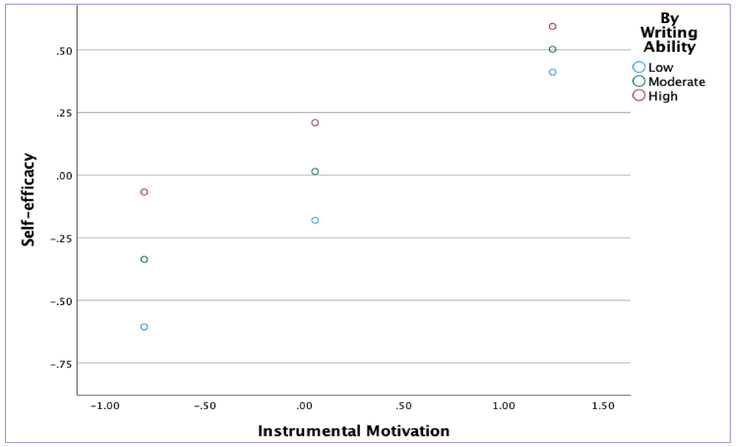


Table 3. Interaction: Instrumental Motivation × Writing Ability



Implications for Educators

- Educators may need to identify and pay attention to factors that can increase students' motivation as that could translate into higher self-efficacy, and hence improved learning outcomes.
- Working on improving students' writing skills can enhance students' learning experiences.
- Improving access to reading materials will not negatively impact students' learning, and it makes sense to keep advocating for more and improved resources to be available to students, both at school and at home.

References

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