

An Empirical Study on the Relationship Between English Self-efficacy and Learning Engagement among Chinese Secondary Vocational Students

Hanxu Tu¹ Wan Zhou² Fangxin Lin³

^{1,2,3} Wuhan Vocational College of Software and Engineering (Wuhan Open University), Wuhan, China

²Corresponding author.

ABSTRACT

This study examines the relationship between English learning self-efficacy and learning engagement among Chinese secondary vocational students. Participants were 39 Grade-2 mechatronics students from a secondary vocational school in Wuhan, China. Data were collected via a questionnaire survey combined with statistics on homework completion rates, supplemented by classroom observations and interviews. The results showed that self-efficacy was significantly positively correlated with learning engagement ($r = 0.45, p < .01$). After controlling for prior test scores, self-efficacy still had an independent positive predictive effect on learning engagement (standardized $\beta = 0.40, p < .01$). Self-efficacy was positively correlated with the on-time completion rate of English homework, though the correlation did not reach significance, and self-rated engagement was only moderately correlated with homework completion rate. Based on these findings, low-cost instructional intervention ideas such as the “micro-task experience – positive feedback – formative assessment” cycle are proposed to improve students’ engagement.

Keywords: *Self-efficacy, Learning engagement, Secondary vocational education, English classroom.*

1. INTRODUCTION

In China’s secondary vocational school English classes, a common predicament of “low self-efficacy – low engagement” prevails. Some vocational students lack confidence in learning English, exhibit low classroom participation, and demonstrate weak execution on after-class tasks. However, existing research has mostly focused on samples from general academic high schools and colleges, relying primarily on cross-sectional questionnaires, with a relative lack of objective indicators and evidence from the classroom context. To fill this gap, the present study, situated in a secondary vocational context, combines questionnaires, homework completion rates, classroom observations, and interviews to examine the relationship between English learning self-efficacy and learning engagement, and proposes actionable paths for improvement.

Specifically, based on the secondary vocational context, this study tried to answer the following questions: (1) Is there an independent significant

positive correlation between secondary vocational students’ English learning self-efficacy and learning engagement? (2) Is students’ subjective evaluation of their own engagement consistent with their objective learning behaviors (such as homework completion rate)? (3) Can we identify some key instructional factors influencing students’ engagement through classroom observation and interview? This study attempted to bridge the above gaps on the basis of the secondary vocational context, and further propose feasible ways to improve engagement.

2. LITERATURE REVIEW

2.1 Theoretical Basis of Self-efficacy and Learning Engagement

Bandura’s social cognitive theory defines self-efficacy as one’s judgment of one’s ability to complete a specific task, and it influences learning behavior by affecting goal-setting, effort, and persistence. In the context of English learning, high

self-efficacy is typically accompanied by a more proactive approach to challenges and more consistent use of learning strategies, thereby promoting sustained engagement and achievement. Existing empirical studies indicate that self-efficacy is closely related to learning motivation, strategy use, and academic performance.

2.2 Characteristics of the Secondary Vocational Context

In general, high school and university student populations, multiple studies have confirmed a moderately strong positive correlation between self-efficacy and learning engagement (e.g., class participation, out-of-class study time). In secondary vocational schools, however, many students, due to weak academic foundations and lack of confidence, become weary of English and gradually give up trying. Gao Yiying noted that because of poor foundations and low confidence, many vocational students grow tired of English and cease to make effort. Lu Linjie's observational study of a Shanghai vocational English class further revealed that "silent classrooms" are widespread; lower-achieving students are more prone to remain silent, and the class's social and psychological environment significantly affects students' willingness to speak.

Therefore, it is necessary and contextually valuable to examine the self-efficacy–engagement relationship in a secondary vocational sample and to explore teaching strategies tailored to this context.

2.3 Research Gaps

Existing research still has the following shortcomings:

- (1) Sample deficiency: Most studies were based on college or general high school students, and there is a lack of evidence from secondary vocational students.
- (2) Methodological narrowness: There is heavy reliance on self-report questionnaires and a lack of objective indicators such as homework completion rates or classroom observation.
- (3) Lack of context inclusion: There is seldom the inclusion of ecological factors such as classroom interaction and assessment. Therefore, exploring the relationship between self-efficacy and learning engagement in secondary

vocational English learning and exploring context-specific teaching strategies has important value.

3. METHODOLOGY

3.1 Participants

The participants were 39 second-year male students from a mechatronics class at a secondary vocational school in Wuhan, China ($N = 39$, all male), selected via convenience sampling. The sample size was small; therefore, effect sizes and confidence intervals are reported to enhance interpretability.

Moreover, it should be noted that, due to the limited sample, all participants in this study were male students from a single mechatronics class. This gender homogeneity may limit the representativeness of the findings, as female students or learners from other majors could demonstrate different patterns of self-efficacy and engagement. Future studies could therefore recruit more diverse samples across gender, majors, and institutions to enhance the generalizability of the conclusions.

3.2 Instruments

This study primarily used a questionnaire to collect quantitative data, supplemented by classroom observations and interviews to gather qualitative information. The instruments included:

- (1) English Learning Self-Efficacy Scale: 11 items, 5-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree"), with an internal consistency reliability of Cronbach's $\alpha = 0.82$.
- (2) Learning Engagement Scale (behavioral–emotional–cognitive three dimensions): 12 items (4 items per dimension), Cronbach's $\alpha = 0.85$.
- (3) Homework On-Time Completion Rate: Using English assignments over two consecutive weeks, the percentage of assignments submitted on time was calculated as an objective indicator of engagement.
- (4) Classroom Observation: Over the same two-week period as the questionnaire, four English lessons were observed. Students' behaviors were recorded, including frequency of voluntary participation, instances of off-task distraction, and peer

interactions, to help interpret the quantitative results.

- (5) Semi-Structured Interviews: 3 students were selected for interviews focusing on their classroom participation, homework execution, and subjective feelings about their learning, in order to gain additional insight.

3.3 Procedure and Data Analysis

Descriptive statistics and Pearson correlations were calculated to examine the relationships among self-efficacy, learning engagement, and homework completion rate, reporting correlation coefficient r and significance (two-tailed, $\alpha = .05$). Then hierarchical regression was conducted: prior English test scores were entered in Step 1, and self-efficacy was entered in Step 2, to test its incremental prediction of learning engagement.

Inference was made under assumptions of linearity, normality, homoscedasticity, and non-multicollinearity. Qualitative data from observations and interviews were used to support

and explain the quantitative findings. The study adhered to school educational research ethics guidelines, obtained informed consent from the students, and anonymized the data. Effect sizes and 95% confidence intervals (CIs) were reported for all key statistics.

4. RESULTS

4.1 Descriptive Statistics

Reliability and descriptive statistics for key variables are presented in “Table 1”. Both the self-efficacy and learning engagement scales showed solid internal consistency (Cronbach’s $\alpha \geq 0.82$). The mean for English self-efficacy was $M = 3.12$ (out of 5 points), and the overall mean for learning engagement was $M = 3.28$. Over the two weeks, the average on-time homework completion rate was 76.4% ($SD = 18.5\%$). These values suggest a cohort with middling confidence and engagement, paired with a homework record that, while workable, leaves room for improvement.

Table 1. Reliability and descriptive statistics of key variables ($N = 39$)

Variable	No. of Items	Cronbach's α	Mean (M)	SD	Min	Max
English Self-Efficacy	11	0.82	3.12	0.54	2.1	4.3
- Learning Engagement (Overall)	12	0.85	3.28	0.58	2.0	4.5
- Behavioral engagement	4	0.80	3.35	0.63	1.8	4.5
- Emotional engagement	4	0.82	3.20	0.71	1.5	4.8
- Cognitive engagement	4	0.81	3.27	0.60	2.0	4.3
Assignment completion rate (%)	—	—	76.4%	18.5%	30%	100%

4.2 Correlation Analysis

The Pearson correlations among the main variables are shown in “Table 2”. Self-efficacy (X) was significantly positively correlated with learning engagement (Y) ($r = 0.45$, 95% CI [0.18, 0.66], p

$< .01$). Its correlation with homework completion rate (Z) was positive ($r = 0.21$) but the confidence interval included 0 (not significant). Learning engagement was positively correlated with homework completion rate ($r = 0.33$, $p \approx .047$).

Table 2. Correlation matrix of main variables ($N = 39$)

Variable	Self-Efficacy (X)	Learning Engagement (Y)	Homework Completion Rate (Z)
Self-Efficacy (X)	—	0.45**	0.21
Learning Engagement (Y)	0.45**	—	0.33*
Homework Completion Rate (Z)	0.21	0.33*	—

a Note: * $p < .05$, ** $p < .01$ (two-tailed). Exact p values are reported.

In hierarchical regression, when entering prior English test score only in Step 1, the regression analysis showed that its effect on learning engagement was not significant (standardized $\beta = 0.28$, $p = .08$). When self-efficacy was entered into the regression equation in Step 2, the standardized regression coefficient of self-efficacy for learning engagement was $\beta = 0.40$ ($p < .01$). Model R^2 increased from 0.09 to 0.26, and $\Delta R^2 = 0.17$ was significant. This means that even after controlling for prior achievement, self-efficacy still explained certain proportion of variance in engagement. This explained 17% of the variance in engagement, which was a moderate effect size. That is, self-efficacy did contribute to explaining variance in engagement beyond prior achievement.

5. DISCUSSION

5.1 Alignment of Findings with Theory

The results provide contextual support for the self-efficacy–learning engagement link among secondary vocational students, consistent with the expectations of social cognitive theory. Students who believe “I can learn it” are more inclined to set attainable goals, maintain focus, and persist in their efforts; conversely, expecting to fail weakens one’s willingness to participate, easily creating a vicious cycle of low engagement. This is in line with Bandura’s view that self-efficacy influences effort and persistence. The interview results also revealed divergent perspectives: some students emphasized that “if you study seriously, you can learn it,” and thus they persisted in completing tasks, whereas others felt “English is too difficult and not useful in the future,” and showed low willingness to engage. The qualitative evidence corroborates the quantitative findings, indicating that self-efficacy shapes learning engagement indirectly by influencing the goals students set, the effort they invest, and their perseverance.

It is also important to recognize that both self-efficacy and learning engagement are dynamic constructs that may fluctuate over time. Since this study adopted a cross-sectional design with a two-week data collection period, the observed relationships represent only a snapshot. Longitudinal or intervention-based research is needed to capture how changes in self-efficacy influence engagement trajectories and whether sustained improvements can be achieved through targeted instructional strategies.

5.2 Weak Correlation with Homework Completion

The correlation between self-efficacy and on-time homework completion rate was low, but this does not contradict certain existing research conclusions that found significant correlations between self-efficacy and achievement. First, exam performance is a cumulative outcome, whereas the two-week on-time homework completion rate is a process-oriented, compliance-focused behavior indicator; the two metrics differ in scope and are not equivalent. Second, external factors in vocational schools—such as teachers’ monitoring of homework and their requirements—can also affect completion rates. Moreover, interviews showed a tendency of “defensive self-esteem” in a few students: when their homework execution was poor, they inflated their self-rated engagement on the questionnaire to preserve their self-esteem.

Another possible explanation may lie in ecological factors in the classroom. Some aspects of teacher questioning behaviors, feedback behaviors, peer interaction behaviors, and classroom management may have a strong influence on students’ engagement behaviors that are not associated with self-efficacy. This study conducted classroom observations but did not analyze the ecological dimensions systematically. Future research should integrate more classroom process data to clarify how instructional environment interacts with self-efficacy to affect engagement.

5.3 Incremental Effect after Controlling Achievement

Even after controlling for prior achievement, self-efficacy retained a positive predictive effect on engagement. For secondary vocational students in China, many of whom begin with weaker academic foundations, this is good news. If instruction can strengthen students’ beliefs about their capability, their agency and initiative may rise accordingly, enabling some to “catch up.” This resonates with Wang Faqian’s claims that improving self-efficacy is pivotal for turning around underachievement. At the same time, the mixed-methods integration could be richer. Future studies might weave in more verbatim interview excerpts or short classroom vignettes to show how learners experience progress and setbacks, thereby illuminating the mechanisms that connect belief and behavior.

In addition, while interviews and observations were used to supplement the quantitative results, their integration in the analysis was limited. Presenting more detailed excerpts from student interviews or illustrative classroom episodes would provide richer evidence on how learners perceive their challenges and successes in English study. A stronger mixed-methods integration could yield deeper insights into the mechanisms linking self-efficacy and engagement.

6. PEDAGOGICAL IMPLICATIONS

6.1 Creating “Micro-success” Tasks to Boost Student Confidence

Breaking larger goals into smaller, achievable tasks helps vocational students rebuild confidence. For those burdened by repeated failures, frequent success can change their expectations about learning English. Teachers may design short activities of moderate difficulty, such as vocabulary matching, quick quizzes, or micro-reading challenges, ensuring that every student succeeds at least once within a period. Repeated cycles of effort–achievement–recognition gradually reshape self-beliefs from “I cannot do it” to “I can learn well.”

For instance, a 5-minute reading task requiring students to locate three information points (Who/What/Why) shows that comprehension is possible without full mastery. Teachers can reinforce impact with immediate praise or small rewards, helping students internalize success. Over time, accumulated confidence promotes consistent engagement and willingness to attempt more difficult tasks.

6.2 Leveraging Peer Support and Modeling

Students do not learn only from teachers but also from each other. Pair work and small groups allow students to learn from peer modeling, in which stronger students show how to do things in an unthreatening way. This collaboration reduces anxiety and provides struggling students with a model. To ensure that students play equal roles, teachers should assign group roles, such as “recorder,” “timekeeper,” or “speaker,” and rotate them. When peers encourage each other, struggling students can find new motivation, driven by the belief that “if they can do it, so can I.”

In addition, collaborative work allows students to build a culture of mutual help, reduces silence, and fosters belonging, forming an ecology that vocational students rarely enjoy given their lack of intrinsic motivation.

6.3 Providing Positive, Specific, and Timely Feedback

Feedback is good for promoting engagement but it needs to be both good and timely. Teachers should focus on controllable behaviors avoiding vague judgments about students’ performances and highlighting concrete improvements such as “Your pronunciation was much clearer this time” or “You used past tense correctly”. Timely feedback is equally important. Short cycles such as 3-minute quizzes that are discussed immediately afterwards are important so that students can adjust soon and stay engaged.

Small and frequent comments reduce anxiety and create a formative assessment culture where errors are seen as learning opportunities. This not only leads to better performances but also increases self-efficacy and engagement in the long term.

6.4 Cultivating a Supportive Classroom Atmosphere

Classroom climate strongly shapes willingness to engage. For vocational students sensitive to failure, a supportive and low-stakes environment is essential. Teachers can establish clear rules, adopt error-tolerant questioning, and use varied response formats. For example, anonymous mini whiteboards allow all students to answer simultaneously, lowering individual pressure while still enabling assessment. Structured turn-taking or “think-pair-share” ensures everyone participates. The teacher’s demeanor—patience, respect, encouragement—also plays a crucial role. When students feel their efforts will be recognized, they are more likely to take risks and participate actively. Over time, this supportive atmosphere fosters resilience, reduces silence, and gradually builds a collaborative learning culture.

However, implementation may face challenges such as limited class hours, large ability gaps among students, and institutional constraints, which should be considered when adapting these strategies to diverse vocational contexts.

7. CONCLUSION

This study, using a class of second-year mechatronics majors in a secondary vocational school as the sample, conducted an empirical analysis of the relationship between English learning self-efficacy and learning engagement and yielded the following main conclusions: (1) self-efficacy is significantly and positively correlated with learning engagement. Students with stronger self-efficacy tend to participate more actively in English classes and devote more effort after class; (2) even after controlling for prior English performance, self-efficacy retains an independent positive predictive effect on learning engagement, indicating that the impact of confidence on students' engagement extends beyond the constraints of their initial ability level; (3) both self-efficacy and learning engagement are positively associated with objective learning behaviors such as homework completion rate, but the correlation strengths are limited, suggesting a certain gap between subjective engagement and objective behavior.

Accordingly, the study recommends low-cost interventions centered on “micro-success – modeling – positive feedback – low-stakes classroom” as a main thread to rebuild students' learning beliefs and participatory ecology. Due to the limited sample size and source, the above conclusions still need to be validated in larger and more diverse samples.

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