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Self-Efficacy and Self-Regulated Learning's Role in Self-Directed Learning's Impact on Academic Writing Problem-Solving for EFL Undergraduates

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ABSTRACT

The study examined the role of self-efficacy and self-regulated learning on the effect of self-directed learning on academic writing problem-solving for EFL undergraduates. The study applied a cross-sectional design to evaluate 213 students from the Departments of English Education and English Literature of a private university in Malang, Indonesia. Participants aged 18 to 24 years were randomly selected to ensure representative samples. This study assessed undergraduate students' writing problem-solving using custom instruments inventory of problem-solving in academic writing. Self-directed learning, self-efficacy, and self-regulated learning are evaluated on different scales. Methods such as confirmatory factor analysis and structural equation models are used to ensure the instrument's validity and reliability. The study found that self-directed learning had a significant impact on self-efficacy and self-regulated learning and on writing problem-solving. The study also found an important relationship between self-directed learning and the ability of EFL undergraduates to solve academic writing problems through self-efficacy and self-regulated learning. This research contributes to ongoing discussions on the relevance of self-directed learning for personal and professional development. It encourages re-evaluating educational and organizational strategies to maximize self-directed learning's benefits and minimize potential challenges.

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1. Introduction

An apprenticeship in self-directed learning (SDL) is an educational paradigm that can improve the writing problem-solving (WPS) skills of students in English as a Foreign Language (EFL). However, considering the extensive research recently in this field, there are nevertheless questions concerning whether or not self-regulated learning (SRL) plays a

mediating role between academic self-efficacy (SE) and SDL when it comes to improving WPS. The abilities of self-regulated learners are fundamental to the enhancement of learners' WPS abilities in educational settings (Hwang & Oh, 2021; Lemmetty & Collin, 2021; Ng et al., 2021; Rossi et al., 2021). SDL is the student's ability to manage his or her own learning experiences, make choices as wisely as possible, and 'own' his or her learning experience using self-regulated learning schemes and strategies (Bai et al., 2020; Buch et al., 2021). In contrast, WPS abilities are critical to success in intellectual areas, yet they are also indispensable in endless practical situations (Ferreira et al., 2022; Kimmel et al., 2020).

In recent years considerable attention has been paid to the link between SRL and WPS ability, especially among EFL learners. However, more research is needed to examine the underlying processes and potential mediators that account for this relationship. In this study, the researcher explores the mediating mechanism of academic self-efficacy (SE) and SRL in the relationship between self-directed learning and WPS ability among EFL undergraduate learners: Academic self-efficacy students are the beliefs in their own ability to effectively perform academic tasks (Chung et al., 2020; Hwang & Oh, 2021; Palaniappan & Noor, 2022). This also turned out as a significant predictor of students' WPS ability. It is downstream from self-directed learning (SDL). Academic SE is both a driver and result of students' motivation, persistence, and goal-setting strategies at all levels (Chung et al., 2020) and also a determining factor of SRL itself. One of the core beliefs in SRL is learners who are capable of setting goals, monitoring their progress, and changing strategies as necessary will have a better chance of doing well on WPS tasks (Schweder & Raufelder, 2021; Kimmel et al., 2020; Stephen et al., 2020).

This study is an earlier work written to further understand the relationship between academic self-efficacy and SRL as mediator variables in WPS abilities according to English-language users of learner autonomy (Douglas et al., 2020; Lemmetty & Collin, 2021; LaTour & Noel, 2021; Paretti et al., 2020). This study adds to the evidence base on the interconnectedness of SDL and the evolution of students' WPS abilities.

There are several examples of research on students' levels of proficiency in SRL and their WPS abilities in various educational settings (McNaughton et al., 2022; Teng, 2022). For example, Abtokhi et al. (2021) studied how deploying SRL strategies could support the development of WPS for students who were enrolled in online physics courses during the COVID-19 pandemic.

A noteworthy and positive relationship between SRL and problem-solving ability was uncovered. Separately, Altas & Mede (2021) assessed the link between prospective English instructors' growth in writing capability and their capacity to self-monitor studying in a flipped classroom experiment. Some students demonstrated greater independence and insight into their learning process compared to peers, relating to enhanced writing skills.

They examined how utilizing a module focused on entrepreneurship enhances mathematical WPS abilities through SDL with mediation by SRL. The findings corroborate a positive link between behaviors of self-guided studying and SRL and mathematical WPS skills, indicating the substantial part of SDL and its impact on WPS abilities (Brennan, 2021; Ivanova et al., 2022; Loc et al., 2020; Sangsawang, 2020; Onah et al., 2022; Chatwattana, 2021).

It should be noted that these reactions have generated intriguing literature regarding the relationship between self-directed learning and the expertise of WPS across diverse

educational settings. However, the intervening effect of academic SE and SRL within this mechanism has not been extensively investigated among EFL learners. Therefore, the goal of the present research is to fill this void in the literature and provide a deeper understanding of the underlying mechanics. In view of the outlined objectives, the following research questions have been established:

1. To what extent does SDL impact SE, SRL, and problem-solving in academic writing for EFL undergraduates?
2. Is there a significant relationship between SDL and the ability of EFL undergraduates to solve academic writing problems, mediated by SE and SRL?

2. Literature Review

2.1 SDL and Problem-Solving Ability in Writing

SDL involves setting goals, planning tasks, and evaluating progress. Students actively acquire knowledge, skills, and attitudes through self-directed exploration and reflection (Buch et al., 2021; Eglseder et al., 2022). This approach empowers learners to take charge of their education by selecting courses they are interested in, determining their preferred learning methods, and honing their thinking and communication skills (writing, problem-solving, speaking). However, developing problem-solving abilities is essential for overcoming obstacles. Individuals need to employ abilities and creative and critical thinking skills (Choi et al., 2022). The skill set for problem-solving encompasses identifying issues, analyzing them thoroughly, generating solutions, critically evaluating options critically, and implementing the most appropriate one (Ferreira et al., 2022). Research has been conducted to assess the competence of SDL and its impact on problem-solving skills. According to Hwang & Oh (2021a), theories suggest that SDL enhances problem-solving abilities by fostering autonomy, intrinsic motivation, and metacognition. Another perspective highlights the enhancement of problem-solving capabilities through self-regulated learning (SRL) approaches such as goal setting and planning tasks effectively. The research conducted by Abtokhi et al. (2021) explored how SRL)impacted the development of problem-solving skills in physics courses during COVID-19.

The SRL scales reported that the more SRL a person uses while taking classes the better his written problem-solving abilities get. The effectiveness of SDL modules based on self-regulated learning was investigated in a study by Amaliyah et al. (2022) in terms of whether they could help solve word problems. Students who actually used the two methods together, but separately also had their SDL ability evaluated, had a tremendous improvement on passing calculation problems. Besides, when employing SRL methods, this greatly affected students' programming ability too. According to Choi et al. (2022), it could alleviate the strain caused by computer programming. The utilization of the representation of SRL resulted in an improved processing speed of working memory for learners. Personally, the researcher found that it alleviated the burden while performing programming tasks.

The provided data unequivocally demonstrate the benefits of engaging in SDL for problem-solving. SDL fosters independence, introspection, and self-control thereby enhancing learners problem-solving abilities. This approach emphasizes participation, accountability, and critical thinking in acquiring knowledge and refining word processing skills.

2.2 SE and Self-Regulated Learning as Mediators

Academic SE refers to the level of assurance of the students in completing assignments and achieving goals. It encompasses both confidence in oneself and a high level of competence. Evaluating self-efficacy involves assessing students' ability to manage their learning within a physics environment. Abtokhi et al. (2021) conducted a study that revealed a correlation between word processing skills. It impacts on students' ability to adapt and overcome obstacles during the knowledge acquisition process.

According to a study by Amaliyah et al. (2022), having confidence in one's abilities plays a crucial role in developing problem-solving skills. It can enhance motivation, effort, and resilience when students believe in themselves. The researcher also drew on another study Bai et al. (2020) to show that children who believe in themselves and have a sense of proper priorities and mindset for growth are more capable of writing English autonomously in primary school. Bai et al. (2020) found that students with confidence in their abilities are more likely to engage in self-regulated learning practices. Self-regulated learning means that students set their goals, decide the strategies to take, monitor their own progress, and adapt their methods of learning until they are satisfied with what has been accomplished. Such a method is effective because it appeals to both motivational threads of learning. Research by Altas & and Mede (2021) proves that incorporating self-regulated learning techniques can increase the writing proficiency of teachers working within a service industry setting. SRL can improve the metacognitive skills of learners as well as working memory capacities. Active learning improves awareness, self-control, and self-reflection thereby enhancing writing skills (Winarti et al., 2022). Azeem's (2023) study revealed that the relationship between SE and student engagement is influenced by SDL and preparation for education. Azeem persisted in arguing that pupils require autonomous academic progression to build useful erudition in this era. Numerous contradictory theoretical interpretations scattered throughout various literature intimate that scholastic self-assurance and self-regulated scholarship interconnect and jointly operate as intermediary determinants. One examination led by Hwang & Oh (2021) uncovered a meaningful connection between the preparedness of nursing undergraduates for self-managed study and their problem-solving aptitudes, with self-regulated erudition further emphasizing improved writing implementation as scholastic SE acts as an intermediary. This underscores the entwined nature of self-belief, autonomous scholarship, and markers of professional work.

The exploration conducted by Hwang & Oh (2021) discerned that self-regulated scholarship serves to intercede the association between self-directed study and talents pertinent to professional work for nursing undergraduates. Learner-centered instruction involves assuming control over one's education, whereas academic SE alludes to an individual's convictions regarding their talents and competence. When cultivated, these notions can advance the sharing of cognition and better habitat comprehension between all parties. Analyses propose that SRL improves working memory, processing velocity, and academic achievement in high-achieving students. These qualities are essential for learning and success.

2.3 SDL, WPS Ability, Academic SE, and SRL Empirical Studies

Recent research has examined the abilities of SDL and WPS. Abtokhi et al. (2021) examined SRL's impact on WPS abilities in required online physics courses during the COVID-19

pandemic. SRL was related to problem solving ability, suggesting that SDL students have better WPS skills. Hafizah et al. (2021) evaluated whether English-language learners were willing to use SDL to improve their writing. SDL improved students' address skills, according to their study. Altas & and Mede (2021) examined how flipped classrooms affect pre-service English instructors' writing and self-regulation. The results showed that SRL was positively correlated. They improved the WPS writing skills, suggesting that diligent students are better at writing tasks. Rizki et al. (2022) examined how entrepreneurial modules and autonomous learning improved WPS skills. SDL improved learners' WPS skills, suggesting that people who use it are better at solving problems entrepreneurially.

Amaliyah et al. (2022) examined how SDL modules affected mathematical WPS skills. Self-regulation improved mathematics WPS proficiency, highlighting the importance of self-directed approaches to skill development. These studies show a relationship between SDL, WPS proficiency, academic SE, and SRL. The study shows that learners who start learning develop more important WPS skills. Research suggests improving self-regulation and intellectual confidence to increase WPS skills.

In conclusion, SDL, WPS ability, academic SE, and SRL are interrelated and essential to learning. Improving the ability of WPS requires encouraging self-directed, and SRL since empirical research has shown beneficial links between these aspects. Educational strategies should enhance the autonomy of the learner and metacognitive skills to increase the WPS skills in various academic areas. Knowledge acquisition involves SDL, WPS, academic SE, and SRL. To improve one's proficiency in WPS, it is crucial to foster learning and self-regulation. Multiple studies have shown a connection between these factors. Implementing strategies that encourage student autonomy and metacognitive skills can greatly enhance their proficiency in writing, problem-solving, and oral communication.

3. Research Methodology

3.1 Research Design and Participants

The research employed a cross-sectional design to assess the characteristics of the population in a set timeframe. It compared various data to uncover the frequency of traits and the interplay between different. The study was carried out in the English Language Education and English Literature Departments of a private university in Malang, Indonesia with 213 undergraduate students. There were 75 male and 138 female aged 18–24, with a mean age of 20.5, from diverse cultural backgrounds, including the Javanese and non-Javanese mother tongues. Random selection, direct contact, and recommendations were used to recruit students as participants in this research, adopting a systematic and inclusive study approach. The ethics guidelines protected the names and confidentiality of the participants through a thorough consent process. With 100% participation, this survey showed interest from the students. The participants' different ages and linguistic origins provide credibility to the research, which offers a multifaceted view of cultural and linguistic heterogeneity in English language instruction.

3.2 Measures

This study uses problem-solving instruments in academic writing based on instruments that Flower & Hayes (1981) developed to assess students' academic writing skills. Assesses a student's ability to evaluate the writing process from planning to editing using a Likert scale

from 1 to 5. This complete score indicates the confidence and writing skills of the student. The self-directed learning instrument consists of 10 items developed based on Brockett's 1983 hypothesis, measuring people's aptitude for autonomous learning. Higher scores indicate a more important self-study ability. The Self-Report Scale (SRL-SRS) instrument developed by Zimmerman (2002), is applied to evaluate students' SRL. The Writing Scale is used to measure writing confidence by examining three core areas: creativity, adherence to writing standards, and written self-regulation practices. The SE used is the Likert scale for SE, which provides detailed insight into different writing skills.

3.3 Procedures

The researcher used Google Forms to poll a specified group. The study's goals, procedure, and privacy protection are explained to the participants. The survey covers SDL, SE, SRL, WPS, age, gender, and past writing performance. Participants receive the survey by email and have 45 minutes to complete it. The researcher carefully checks each submission for completeness and records missing data after the response time. For a detailed examination, all data is entered into a specific database. To ensure the validity of the study, the researcher thoroughly checks the data set for input errors and mismatches in the final data processing steps. Before analysis, this crucial step makes modifications to ensure that study findings are correct and reliable.

3.4 Validity And Reliability

This study evaluated the dependability of the construct using composite reliability (CR) and average variance extraction. The study also measured the internal consistency with Cronbach's Alpha. This study evaluates a coefficient between 0 and 1, with reliability between 0.60 and 0.70. A valid measurement has a CR, Cronbach's Alpha, and AVE of 0.70 and 0.50, respectively. Table 1 shows the results of the validity and reliability evaluation.

Table 1: The reliability and validity

Variables	Items	Loadings	Cronbach's Alpha	AVE	CR
SDL	LM	0.885	0.736	0.49	0.78
	PI	0.584			
	SM	0.803			
	IC	0.416			
WSEF	IDE	0.805	0.776	0.531	0.77
	CVT	0.61			
	SR	0.757			
SRL	VEC	0.909	0.704	0.569	0.794
	RCV	0.604			
	LLA	0.718			
WPS	PLN	0.871	0.759	0.51	0.8
	WRT	0.634			
	RVS	0.756			
	PS	0.56			

This study uses confirmatory factor analysis (CFA) to analyse variable factor structure, criterion validity, convergence validity, and internal consistency analysis. Multigroup confirmatory factor analysis was also performed to establish if SRL and SE in writing the SDL variable factor structure are invariant. The structural model of the research can be evaluated

using SEM. Building a path diagram to show variable relationships, estimating model parameters using an acceptable approach, and comparing the fit of the model with the observed data will be part of this procedure.

4. Results

4.1. The Description of Levels of SDL SE, SRL, WPS Competency

Table 2 summarises data on the abilities of the abilities of 213 individuals in SDL, SE, SRL, and WPS within academic writing. Each variable displays a relatively high mean value, ranging from 3.81 to 3.93, suggesting that participants generally rated themselves positively on these aspects. Standard deviations range from low to moderate (between 0.33 and 0.46), indicating minor response variability. This implies a consistent self-assessment of the learning and writing competencies of the respondents.

Table 2: Levels of SDL, SE, SRL, WPS competency (n = 213)

Variables	Min - Max	Mean (Std.D)
SDL	3.00 – 4.69	3.84 (0.38)
SE	3.00 – 4.67	3.93 (0.33)
SRL	2.83 – 5.00	3.85 (0.43)
WPS Competency	3.00 – 5.00	3.81 (0.46)

4.2 Interrelationships Among Variables of SDL, SE, SRK, and WPS

Table 3 presents a correlation analysis of four variables where SDL shows moderate to strong correlations with the other measured constructs. SDL correlates with SE at 0.456 ($p < .01$), indicating a statistically significant positive relationship at the 1% significance level. The relationship between SDL and SRL is more robust at 0.584 ($p < .01$), as is its relationship with WPS at 0.571 ($p < .01$), both also significant at the 1% level. The SE correlations with SRL at 0.213 ($p < .01$) and with WPS at 0.307 ($p < .01$) are statistically significant, though relatively weaker. SRL and WPS show a robust correlation at 0.671 ($p < .001$), indicating a highly significant positive relationship at the 0.1% level, highlighting the critical interplay between self-regulation in learning and WPS ability in academic writing.

Table 3: Analysis of the interrelationships among variables

Variables	1	2.	3	4
1. SDL	1	.456**	.584**	.571**
2. SE	.456**	1	.213**	.307**
3. SRL	.584**	.213**	1	.671**
4. WPS	.571**	.307**	.671**	1

Note: *p < .05, **p < .01, ***p < .001.

4.3. The Model of A Good Fit with The Empirical Data

Table 4 shows the fitness indices of the theoretical model, which present a robust fit to the empirical data. With a Chi-square value of 119.060 for 75 degrees of freedom, the model achieves a Cmin/df ratio of 1.587, indicating a favourable fit. The significance of the model is

underscored by a probability level of .001. The RMSEA is .052, within acceptable limits, reflecting a modest approximation error. The GFI is .930, and the AGFI is .901, both above the desired .90 threshold, suggesting that the model fits well with the observed data. The high TLI and CFI values of .959 and .966, respectively, exceed the .95 benchmark, confirming the reliability of the model and the validity of the theoretical framework it represents.

Table 4: Appraisal of the theoretical framework's conformity index

Research	df	Chi-square	Probability	Cmin/df	RMSEA	GFI	AGFI	TLI	CFI
Model	75	119.060	.001	1.587	.052	.930	.901	.959	.966

Figure 1 presents a structural model that illustrates the relationships among various latent variables related to SDL, SE workplace and WPS workplace. Individual IC significantly predicts the SDL construct, shared SM, PI, and LM, with path coefficients of .61, .78, .61, and .69, respectively. SDL and SRL influence WSEF with path coefficients of .59 and .74, whereas SE and SRL influence WPS with coefficients of .46 and .55. The model demonstrates a good fit with the empirical data, as evidenced by a Chi-square of 119.060, a CMIN/DF of 1.587, an RMSEA of .052, and high values for GFI (.930), AGFI (.901), TLI (.959), and CFI (.966), all indicating a statistically robust model.

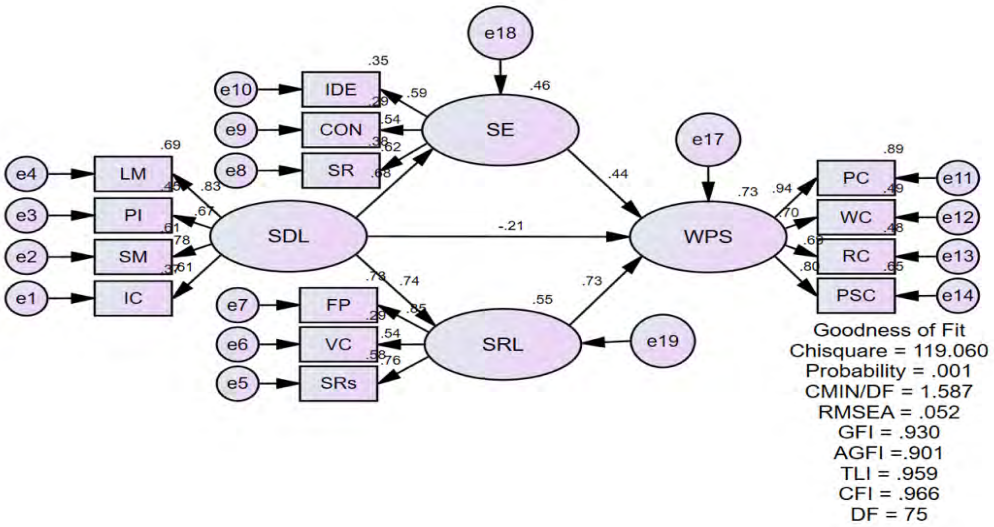

Figure 1: Normalised path coefficients in the framework

4.4 The Path Coefficients for the Relationships Among SDL, SE, SRL, And WPS

Table 5 presents the path coefficients for the relationships within the theoretical model with considerable precision. The influence of SDL on SE is substantial and positive (β = 0.678, p < .01) with a narrow confidence interval (CI) [0.483, 0.830], demonstrating a robust and reliable association. Similarly, the effect of SDL on SRL is even more significant (β = 0.739, p < .01), with a highly high t-value indicating a robust relationship and a CI [0.655, 0.818] indicating precision in the estimate. On the contrary, SDL exhibits a small but significant inverse effect on WPS (β = -0.21, p < .05, CI [0.501, 0.722]), which indicates a nuanced negative relationship. The contribution of WSEF to WPS is also notable (β = 0.438, p < .01, CI [0.343, 0.536]), as is SRL's (β = 0.727, p < .001, CI [0.642, 0.824]), both providing strong evidence of their

importance in predicting WPS in the workplace, with their effects confirmed by tight confidence intervals and very low p-values. The standard errors (S.E.) across paths are sufficiently low, enhancing the credibility of these coefficients.

Table 5: Path coefficient of the competition model

path	Effect	S.E.	t	P	95% BC CI
SDL → SE	0.678	0.042	7.88	0.002	[0.483, 0.830]
SDL → SRL	0.739	0.09	17.60	0.002	[0.655, 0.818]
SDL WPS	-0.21	0.042	-2.33	0.013	[0.501, 0.722]
SEF→ WPS	0.438	0.051	8.59	0.002	[0.343, 0.536]
SRL → WPS	0.727	0.046	15.80	0.001	[0.642, 0.824]

Note: *p < .05, **p < .01, ***p < .001.

4.5 The Mediation Effects of SE and SRL on hte Effect of SDL on WPS

Table 6 describes the mediation effects within the structural model. To be precise, the path from SDL to WPS, mediated by SE, is estimated at 0.044 with a standard error of 0.032 and shows a significant Z-value of 7.582 (p < 0.01) despite the 95% bias-corrected confidence interval (BC CI) marginally containing zero, with a range of -0.018 to 0.111. This suggests a positive but less stable mediation effect. In contrast, the mediation path from SDL through WSRL to WPS has a more substantial estimated effect of 0.306, with a minor standard error of 0.043. The associated Z-value of 7.286 confirms the significance (p < 0.01), reinforced by a tight 95% BC CI between 0.224 and 0.394, indicating a consistent and substantial mediation effect. The total indirect effect, which includes the combined mediating roles of SE and SRL in the relationship between SDL and WPS, is 0.351 with a standard error of 0.050. The significance of this effect is confirmed by a Z value of 7.020 (p < 0.01), and the 95% BC- CI concludes not to include zero, ranging from 0.224 to 0.449, thus reinforcing the substantial influence of the mediation effects on WPS in the workplace.

Table 6: Mediating influences within the structural framework

path	Estimate	S.E.	Z-value	P	95% BC CI
SDL → SEF→WPS	.044	.032	7.582	< 0.01	[-.018, .111]
SDL → SRL → WPS	.306	.043	7.286	< 0.01	[.224, .394]
Total Indirect Effect	.351	.050	7.020	< 0.01	[.224, .449]

5. Discussion

The results of the study show that SDL has a positive impact on SE and SRL, but has a negative impact on the resolution of writing problems. SE and SRL are vital to a successful problem-solving writing. In addition, the impact of SDL on writing problem solving is significantly mediated by these two factors. This result supports Aydemir et al. (2021) noted that SRL benefited from the flipped classroom approach, indicating that educational technology could significantly improve SE's perception and autonomy in learning processes. Similarly, Bai et al. (2020) found that SE significantly contributes to SRL among students, in accordance with the positive correlation of the current study. These parallels show that when

students perceive themselves as capable, they are more likely to engage deeply in learning tasks, leading to improved academic results. Contrarily, this study observed uniformly positive self-evaluations contradicting assumptions. Douglas et al. (2020) highlighted how some students struggled with self-directed learning, unprepared for independent methods. This difference may relate to biases within this selective sample favoring self-direction or an encouraging academic culture underrepresented elsewhere. Particularly for English as a foreign language undergraduates, unique writing challenges exist (Hwang & Oh, 2021). Problem-solving during writing, known as in-writing problem-solving, can greatly improve through self-direction (Amidi et al., 2021). Organizing thoughts, expressing ideas verbally, or addressing grammar and spelling issues comprise some difficulties.

SE and SRL are indispensable in this arena. An individual's belief in their capability to achieve objectives significantly influences the extent to which they can initiate their learning experience, as confirmed by research from (Kim & Lee, 2021). Alternatively, one's aptitude to control and self-guide the learning process can impact how well they identify and solve issues in academic writing (Wong & Kan, 2022). Thus, self-directed learning, self-efficacy, and self-regulation all interconnect and play pivotal roles in addressing challenges in scholarly composition (Yao, 2021). The association between SRL and problem-solving skills has been explored in diverse educational contexts. For example, Hwang & Oh, 2021) investigated this association among nursing students, revealing self-efficacy and self-regulation mediate the impact of SDL on problem-solving abilities. In another example, Mapuya (2022) proposed an empowering pedagogical framework to promote self-regulation among initial-year accounting student educators, emphasizing the crucial function of self-guidance in enhancing problem-solving expertise, as noted (Chen, 2015).

These studies collectively highlight the significance of fostering SE and SRL to empower learners in overcoming writing challenges and effectively solvLing problems (Balashov, 2023).

Furthermore, as Choi et al. (2022) pointed out, this study confirms the positive relationship between WPS capabilities and SE. This is noted that this could contradict other studies that did not identify important links. This divergence may be due to WPS's context dependence; academic writing requires a certain set of cognitive and self-regulatory skills that are less critical in other fields. Thus, apparent contradictions can be caused by different challenges specific to the specific field or different instruments used to measure WPS and SE in different studies. In essence, the detailed analysis of these results highlights the complex and complex nature of SRL and their application to academic writing. Compared to previous studies on the influence of educational strategies, this reinforces the idea that education practices have a major impact on students' perceptions of themselves and learning outcomes. In addition, the comparison with other studies showed that the subliminal influence of individual preparation, contextual aspect, and domain specificity affect SRL. These findings are consistent with those of Aydemir et al. (2021) about Flip classrooms affecting the writing process and SRL problems. From both perspectives, SE with SRL serve as reported by Bai et al. (2020), incompatible pedagogical system development. In this way, research reveals that SDL does seem to have a statistically significant negative impact on WPS. For instance, says Choi et al. (2022) whom found that it caused WPS and SE performance to be better. And any differences may be accounted for specifically because in the context of WPS some factors are given different weighting than any other academic environment For what reasons logic this,

if not well-supported and clearly clarified, may to do with of the nature gloss of SDL degrades WPS strategies in complex scenarios at best (Buch et al., 2021). With all the other important academic abilities, SDL is associated; and academic success is generally higher for this group of students than any other.

6. Conclusion

These findings have the effect of ed performances emphasis on increasing the SDL got success in career are extremely important. Participants consistently demonstrate high levels of SDL, SE, SRL, and persistence. SDL correlates positively with other academic talents and predicts academic achievement. Intermediaries such as SE and SRL as mediators play an important role of the effect of SDL on problem-solving competency in academic writing for EFL undergraduate students. The limits of self-reported data studies make one wonder if my data shaving claims are doubted by people. Text from the students should be clear and as accurate can possibly be. The study will deepen the dialogue on what SDL means for individual and collective progress, as well as prompt a reassessment of education and managerial strategies to maximize its benefits.

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