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Motivation, Self-Efficiency, and Academic Achievement Private Teacher Professional Education Students in Differentiated Learning Courses

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ABSTRAK

Mahasiswa calon guru profesional tidak cukup membekali diri dengan muatan keilmuan saja namun perlu diimbangi dengan motivasi akademik dan efikasi diri yang berguna bagi kualitas prestasi akademiknya. Tujuan dari penelitian ini adalah untuk menganalisis hubungan antara motivasi akademik dan efikasi diri dengan prestasi akademik. Penelitian ini merupakan penelitian non-eksperimental, desain korelasional dengan pendekatan kuantitatif. Penelitian dilakukan dengan populasi seluruh PPG prajabatan berjumlah 23 siswa, dan seluruh anggota populasi dijadikan sampel. Data prestasi akademik merupakan akumulasi nilai tugas, ujian tengah semester, dan ujian akhir semester pada mata pelajaran pembelajaran yang berbeda setelah 16 kali pertemuan. Data motivasi akademik dan efikasi diri diperoleh melalui angket. Data hubungan motivasi akademik dan efikasi diri dengan prestasi akademik dianalisis menggunakan uji regresi linier berganda. Hasil penelitian menunjukkan bahwa terdapat hubungan antara motivasi akademik dan efikasi diri dengan prestasi akademik. Prestasi akademik dapat diprediksi dengan persamaan regresi y = 76.287 + 0.215x1 + 0.268x2, artinya peningkatan satu skor motivasi akademik akan meningkatkan skor prestasi akademik sebesar 0.215 (β = 0.433, t(20) = 2.351, p = 0.029), sedangkan peningkatan satu skor efikasi diri akan meningkatkan skor prestasi akademik sebesar 0.268 (β = 0.413, t(20) = 2.243, p = 0.036).

ABSTRACT

Student prospective professional teachers are not enough to equip themselves with scientific content alone but need to balance it with academic motivation and self-efficacy which are useful for the quality of their academic achievements. The aim of this study is to analyze the relationship between academic motivation and self-efficacy with academic achievement. This research is non-experimental research, correlational design with a quantitative approach. The research was conducted with a population of all pre-service PPG totaling 23 students, and all members of the population were sampled. Academic achievement data is the accumulated grades of assignments, midterm, and final semester exams for different learning subjects after 16 meetings. Data on academic motivation and self-efficacy were obtained through a questionnaire. Data on the relationship between academic motivation and self-efficacy with academic achievement were analyzed using multiple linear regression tests. The results of the study show that there is a relationship between academic motivation and self-efficacy with academic achievement. Academic achievement can be predicted with the regression equation y = 76.287 + 0.215x1 + 0.268x2, meaning that an increase in one academic motivation score will increase the academic achievement score by 0.215 (β = 0.433, $t(20)$ = 2.351, p = 0.029), while an increase of one self-efficacy scores will increase academic achievement scores by 0.268 (β = 0.413, $t(20)$ = 2.243, p = 0.036).

1. INTRODUCTION

Every student needs to equip himself with enthusiasm, ability, and a variety of competencies in terms of organizing and completing assignments and overcoming academic problems so that there is ease and smoothness in the process and academic success. Academic motivation and self-efficacy are closely related to academic success because academic motivation refers to the desire, commitment and drive to achieve academic goals which are related to academic achievement and is positively correlated with student career decisions (Gbollie & Keamu, 2017; Koyuncuoğlu, 2021; Tohidi & Jabbari, 2012). Academic motivation is a function of one's expectations for success and is considered a significant psychological construct in the learning process and academic achievement in college, defined as an academic driving force which promotes, directs, empowers, and maintains learning activities to meet the needs and stimulate students' interest in learning (Blašková, 2014; Donche et al., 2014). On the other hand, self-efficacy refers to belief in one's ability to pursue goals and overcome obstacles based on experience,

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competence, and talent (Kohan-Mass & Tal, 2019; Tsang et al., 2012). Self-efficacy is also a predictor of academic achievement, and academic motivation (Ahmadi et al., 2021), positively related to academic anxiety (Lei et al., 2021), and reduced procrastination (Steel, 2007) and mediates the relationship between competence and learning engagement (Zhen et al., 2017), defined as one's belief and belief in one's ability to organize, executing courses, completing assignments and making things a reality that succeeds. The characteristics of academic motivation and self-efficacy shown by each student are always different. Students with good academic motivation show personality traits including having awareness, being open to experience, extraversion and neuroticism, having inner strength to learn, discovering and utilizing abilities, improving academic performance, and being able to adapt to demands school (Ferreira et al., 2011; Meera Komarraju & Karau, 2005). In addition, students with good intrinsic academic motivation are shown to have self-efficacy and a higher level of awareness (Basith et al., 2020; McGeown et al., 2014), and tend to be extroverted, sociable, conscientious, and open to new experiences, while extrinsic academic motivation tends to be extroverted. fun, conscientious, and neurotic (Amrai et al., 2011; Clark & Schroth, 2010). On the other hand, students with good self-efficacy show personality characteristics including being open to experiences, threats, and challenges (Aharony & Gazit, 2020), having good literacy (Hatlevik et al., 2018), being active in the learning process (Wu & Ma, 2022), meticulous in their learning strategies (Wang et al., 2022), able to learn well (Li, 2022), has awareness, imagination, intelligence, curiosity, creativity and caution (Shams et al., 2011), can excel academically because they have the drive to monitor and self-regulate and survive in the face of difficulties (M. Komarraju & Nadler, 2013; Mahama et al., 2023).

Empirical evidence through consistent research has reported that academic motivation and self-efficacy affect student academic achievement (Shane-Simpson et al., 2022; Yusuf, 2011; Zeinalipour, 2022). In addition, it was also reported that high school students in Ankara with a high level of academic motivation had the highest positive attitude scores (Onena & Ulusoya, 2012; Shamdas, 2023), and when autonomous motivation and controlled motivation were comparable accompanied by low motivation, students at a university in England had many positive experiences. and higher engagement (Hill, 2013; Niehaus et al., 2012). However, different facts were found that female students at Monash University in Victoria had low self-efficacy followed by high levels of anxiety and student academic motivation and self-efficacy decreased during online learning when Covid-19 hit the world (Khasawneh et al., 2021; Mamolo, 2022). This contradictory phenomenon is not only caused by the capacity for self-regulation which requires sharp understanding, strong self-confidence, and belief in the abilities and skills needed to control all needs (Sun, 2022; Yarin et al., 2022; Yu & Shen, 2022), but is also influenced by other factors including the type of work, facility conditions or different types of conditions that affect performance expectations and goal attainment (Gosselin & Maddux, 2003; Maddux & Kleiman, 2018; Wei et al., 2022).

The effect of academic motivation and self-efficacy on academic achievement has become an important issue in the field of education but no reports have been found that inform this issue of students participating in the teacher professional education program (PPG). The effects of academic motivation and self-efficacy on academic achievement need to be taken seriously because they have the potential to occur in PPG students, especially PPG pre-service MIPA batch 2 year 2022/2023 FKIP Tadulako University. Pre-service PPG is an educational program that prepares teachers as quality human resources and aims to produce novice professional teachers who practice the values of Pancasila, the spirit of cooperation, and can use digital technology, as well as produce innovative and creative things (Jung et al., 2017; You et al., 2021). Therefore it is not enough for prospective professional teachers to only equip themselves with scientific content but must balance it with academic motivation and self-efficacy which is useful for improving learning programs and better academic performance (Karaguven & Yukseloglu, 2013; Shane-Simpson et al., 2022). Teacher motivation under continuous innovation can improve the quality of teaching and provide high-quality talent for the country as well as realize the function of education to cultivate students' personal development. In addition, teachers who have high self-efficacy can be creative in making curriculum changes according to students' needs which can trigger student creativity and increase student confidence to excel (Alfayez, 2022; Kwarteng & Sappor, 2021; Tan et al., 2022). Strong self-efficacy can influence the motivation and academic achievement of prospective teachers but self-efficacy, motivation, and academic achievement of PPG Pre-service MIPA group students batch 2 year 2022/2023 FKIP Tadulako University has never been traced so data on this issue is not yet available (Fettahloğlu & Ekici, 2011; Nurafifah et al., 2021; Yeşilyurt et al., 2016). Even though information about self-efficacy, motivation, and academic achievement of Pre-service PPG students is needed to be a good predictor of the ability of prospective professional teachers to innovate and create fun and not boring learning practices. Therefore it is important to research the academic motivation and self-efficacy of Pre-service PPG students in differentiated learning courses because the results of the research provide information about the state of academic motivation, self-efficacy, and academic achievement of Pre-service PPG students as novice professional teacher candidates. In addition, the findings obtained can be used as the basis for further

research. The results can also be used by teaching lecturers in designing differentiated learning that can increase academic motivation, self-efficacy, and student academic achievement. Therefore this study aimed to analyze the relationship between academic motivation and self-efficacy with the academic achievement of PPG Pre-service MIPA students in differentiated learning courses.

2. METHODS

Non-experimental research is using a correlational design with a quantitative approach. This design involves correlational statistics that describe and measure the level or relationship between two or more variables while the quantitative approach is a set of constructs or variables, formed into propositions or hypotheses that determine the relationship between variables (Creswell, 2014). The independent variable of this research is academic motivation and self-efficacy and the dependent variable is academic achievement. The research was carried out on the FKIP Tadulako University Palu-Central Sulawesi campus on PPG Pre-service MIPA class 2 students in 2022/2023. The population is all PPG Pre-service MIPA students batch 2 in 2022/2023, totaling 23 students. All members of the population are used as samples or saturated samples. This sampling technique is carried out when all members of the population are used as samples because the population is relatively small, namely less than 30 people (Sugiyono., 2014). Academic achievement data is obtained through the end-of-semester grades of differentiated learning subjects. This score is the accumulation of assignment scores, midterm exams, and final semester exams after conducting 16 learning meetings. Data on academic motivation and self-efficacy were obtained by distributing questionnaires to the research sample, carried out at the 16th meeting of learning activities. The academic self-efficacy questionnaire contains 8 statement items. **Table 1** and **Table 2** developed and modified from the five academic self-efficacy indicators and the academic motivation questionnaire contains 18 statement items. Then developed and modified from nine indicators of academic motivation (Van Zyl et al., 2022; Vavropa et al., 2012).

Table 1. Academic Self-Efficacy Instruments

No.	Variables	Indicator
1	Confidence managed to solve an academic problem	1. Confident of successfully solving the problem on each task with enough effort 2. Confident of being able to solve academic problems no matter how difficult
2	Confidence in achieving learning goals	1. Confident that he can achieve the programmed academic goals 2. Confident of being able to do many things well related to academic programs besides the tasks assigned
3	Calm attitude in solving problems because they believe in the strategy they have	1. Remain calm in completing each course exam because you are sure you will be able to complete it 2. Confident that they can complete each subject exam because they have certain knowledge and strategies to solve problems
4	Confidence can pass the test	1. Confident that you can pass the exam because you did a lot of practice during this semester
5	Confidence in being able to do something successfully	1. The motto 'if other people can, I can too' is always used in solving problems in every lesson
	Number of questions	**8**

Table 2. Academic Motivation Instruments

No.	Indicator	Instrument/question
1	Perseverance in participating in PPG activities	1. Seriously take courses that you like in this PPG program 2. Always take all PPG programmed courses seriously

No.	Indicator	Instrument/question
2	Study at home	1. The material studied in class is always re-studied at home 2. The materials studied in class want to be studied again at home but don't have time 3. Materials learned in class do not need to be repeated at home even if they are not understood
. 3	Attitude to adversity	1. Trying to complete all tasks in the PPG program, no matter how difficult it is 2. Activities in the PPG program are saturated
4	Businesses face difficulties	1. Always ask the lecturer or discuss with friends if you encounter difficult material
5	Habits for Attending College	1. Enjoyed taking all the courses in the PPG program 2. Tired and bored attending lectures in class because the lecture process ends with assignments
6	Enthusiasm in participating in PBM	1. The materials taught in the PPG Program are very interesting 2. Not motivated to follow lecture material in class because these materials are difficult to apply when practicing PPL
7	Desire for achievement	1. It is important to complete all tasks properly and correctly 2. Just ignore it even though the values obtained are lower than other friends
8	Outcome qualification	1. The content of each course is very useful when practicing PPL 2. Passing all courses is important even if the grades are not good
9	Professional use	1. The knowledge gained during S1 is of no use for the benefit of this PPG 2. Re-studying the material obtained during the Bachelor's degree helps facilitate the completion of tasks in the PPG program
	Number of questions	**18**

All items in the questionnaire used a 5-point Likert scale ranging from strongly disagree to strongly agree. Before being used, these two instruments were internally validated by two senior lecturers who are experts in educational evaluation at the Biology Education Study Program, FKIP Tadulako University, and the results showed that all statement items in the two instruments were in the valid criteria. In addition, data analysis on the relationship between academic motivation and self-efficacy with academic achievement was carried out using inferential statistics, namely multiple linear regression tests with the help of SPPS version 25.0..

3. RESULT AND DISCUSSION

Results

The relationship between academic motivation and self-efficacy with the academic achievement of PPG Pre-service MIPA clump 2 students in 2022/2023 in differentiated learning courses is shown by the results of data analysis which displays the results of the assumption test presented in **Figure 1**.

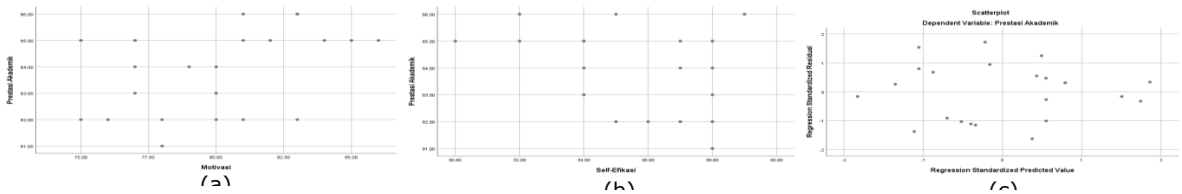

Figure 1. Linear Relationship of Academic Motivation with Academic Achievement (a), Self-efficacy with Academic Achievement (b), and Homoscedasticity Based on ScatterPlot (c)

Figure 1 informs that academic motivation has a linear relationship with the academic achievement of PPG students based on the resulting scatter plot. Likewise, self-efficacy with student academic achievement and homoscedasticity is fulfilled. Data normality and collinearity analysis results is show in Table 3.

Table 3. Data Normality and Collinearity Analysis Results

Tests of Normality				Collinearity Statistics		
Unstandardized Residual	Statistic	df	Sig.	Aspect	Tolerance	VIF
Kolmogorov-Smirnov	0.135	23	0.200	Academic Motivation	0.993	1.007
Shapiro-Wilk	0.962	23	0.504	Self-efficacy	0.993	1.007

Base on Table 3 show the results of the Kolmogorov-Smirnov and Shapiro-Wilk tests in Table 3 inform that the residual data is normally distributed, namely [D(23) = 0.135, p = 0.200] and [W(23) = 0.962, p = 0.504]. In addition, the VIF value generated by the variable academic motivation is 1.007 and self-efficacy is 1.007. Both of these values are in the range of 1 to 10 so multicollinearity does not appear. A result of analysis of variance and model summary is show in Table 4.

Table 4. Results of Analysis of Variance and Model Summary

ANOVA						Model Summary				
Model	Sum of Squares	df	Mean Square	F	Sig.	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Regression	17.867	2	8.934	4.863	0.019[b]	0.572	0.327	0.260	1.35539	1.220
Residual	36.742	20	1.837							
Total	54.609	22								

Multiple linear regression tests were performed to predict the academic achievement of Pre-service PPG students based on their academic motivation and self-efficacy scores. A significant regression equation was obtained [F(2.20) = 4.863, p<0.019] with R2 = 0.327, meaning that 32.7% of the academic achievement of Pre-service PPG students is determined by academic motivation and self-efficacy while the rest is determined by other variables outside the variables analyzed in this study. The result of multiple linear regression analysis is show in Table 5.

Table 5. Results of Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	76.287	8.139		9.373	0.000		
Motivasi	0.215	0.091	0.433	2.351	0.029	0.993	1.007
Self-Efikasi	0.268	0.119	0.413	2.243	0.036	0.993	1.007

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Discussion

The effect of self-efficacy on academic achievement and academic motivation on academic achievement are important issues that have been widely carried out in educational research but become more interesting when researchers try to find out academic motivation and self-efficacy which are the main causes of academic success for PPG students in the MIPA group batch 2 of 2022/2023. The results showed that academic motivation and self-efficacy affected the academic achievement of PPG Pre-service MIPA clump 2 students in 2022/2023 in differentiated learning courses. This is inseparable from the academic enthusiasm and strong desire that has formed an integrated structure and always stimulates cognitive and dominates the feelings of novice professional teacher students to gain new knowledge and

experience related to professional teachers. Not only that, a high willingness to learn animates undergraduate students in the 2015-2022 range, even though some of them are listed as pure students who have no work experience. This condition is clearly expressed in every lecture activity which is always covered by an active, interactive atmosphere so that this positive behavior contributes to their academic achievement. Willingness and enthusiasm from within are supported by the hope of acquiring a variety of skills and competencies triggering the interest, ideas, creativity, and responsibility of each student to gain the achievement of becoming a good teacher through differentiation learning courses. This finding is supported by the opinion that most human motivation is based on three basic needs, namely self-determination, competence, and interpersonal relatedness (Deci & Ryan, 2013), which refers to self-determination theory, namely academic motivation as a series of different forms of behavior regulation, yet complementary, which can coexist within students and play a role in the emergence of goal-directed behavior, characterized by involvement in activities that are driven by pleasure, desire, and choice as internal or external pressure (Andrei et al., 2014; Ryan & Deci, 2000).

In addition, these findings are also supported by several research reports that inform that academic motivation is related to students' desire to find the most appropriate cognitive strategies, believed to help them in the learning process, and trigger their involvement in business. academics that have a positive effect on academic achievement, because the experience gained from the teaching and learning process in the classroom can motivate them to develop communication skills, analysis, and criticism from various perspectives (Dickinson, 2002; Wolters et al., 2005). The academic achievements of PPG Pre-service MIPA clump 2 students in 2022/2023 are influenced by academic motivation and academic self-efficacy. Strong belief in the ability to complete academic tasks is increasingly triggered because it is supported by the knowledge possessed and the opportunities available accompanied by the willingness and ability to collaborate in carrying out exercises and actions. This behavioral tendency always inspires the soul and builds self-confidence and courage in students to be ready to face the various activities that are routine in this educational process (Ariff et al., 2021; Calkins et al., 2023). This situation is shown by the independent attitude, seriousness, discipline, and responsibility of each student so that they can complete all academic assignments promptly, both assignments displayed directly in front of the class in groups or independent assignments submitted to lecturers and uploaded in the learning management system (LMS). This finding is in line with previous findings which reported that self-efficacy contributes to the positive attitude of prospective teachers, being the most relevant control in their academic performance, even though they are at new circumstances and places (Skaalvik & Skaalvik, 2016; Tschannen-Moran & Hoy, 2001), cause them to work well because they tend to see difficult tasks as something that must be mastered, not something that must be avoided (Cassidy, 2012; Zimmerman, 2010).

The desire to acquire knowledge, and skills and master a variety of competencies is matched by a strong belief in the ability to solve various academic problems in the pre-service teacher professional education (PPG) MIPA group batch 2 in 2022/2023 which has proven to affect student academic achievement in differentiated learning subjects. The findings in this study are supported by previous findings which reported that motivation is very important for self-efficacy because only those who are motivated tend to try to be successful because motivation can increase the efficiency of individuals using their abilities and talents better and feel more satisfied (Deci & Ryan, 2016; Kharaem et al., 2012; Uzuntiryaki-Kondakci et al., 2017). In addition, a relationship was found between academic motivation and student and teacher self-efficacy which show has an effect on academic performance (Taheri-Kharameh et al., 2018) and there is a significant relationship between academic motivation and self-efficacy with academic achievement of prospective teachers (Nurafifah et al., 2021; Saracaloğlu & Dinçer, 2009).

This research has revealed that there is a relationship between academic motivation and self-efficacy in the academic achievement of prospective professional teachers who are registered as students in the 2022/2023 pre-service MIPA family PPG program 2022/2023. However, another important thing that has not been explored in this study is the relationship between academic motivation and self-efficacy on academic achievement in terms of the student's age, occupational, and gender aspects and how students' metacognitive skills and anxiety factors affect their academic achievement. Therefore it is suggested for further research to explore students' metacognitive skills and anxiety factors in terms of the student's age, work, and gender aspects. In addition, it is important to analyze the causal effects of metacognitive skills and student anxiety factors on the academic achievement of pre-service PPG program students in the following year's class.

4. CONCLUSION

In this study, academic motivation, self-efficacy, and academic achievement of PPG Pre-service MIPA clump 2 students in 2022/2023 in differentiated learning courses were studied. The results of the study show that there is a relationship between academic motivation and self-efficacy with student academic achievement in differentiated learning courses. The academic achievement of Pre-service PPG students can be predicted using the regression equation, meaning that every increase of one academic motivation score will increase the academic achievement score, while an increase in one academic self-efficacy score will increase the academic achievement score.

5. REFERENCES

Aharony, N., & Gazit, T. (2020). Students' information literacy self-efficacy: An exploratory study. *Journal of Librarianship and Information Science*, *52*(1), 224–236. https://doi.org/10.1177/0961000618790312.

Ahmadi, A., Ziapour, A., Lebni, J. Y., & Mehedi, N. (2021). Prediction of Academic Motivation Based on Variables of Personality Traits, Academic Self-Efficacy, Academic Alienation and Social Support in Paramedical Students. *Sage Journal: Community Health Equity Research & Policy*, *43*(2), 1–8. https://doi.org/10.1177/0272684X211004948.

Alfayez, A. F. (2022). Saudi Teachers' Self-Efficacy in Implementing the Arabic Language Integrative Curriculum. *Education Research International*, *2022*, 1–17. https://doi.org/10.1155/2022/6823935.

Amrai, K., Motlagh, S. E., Zalani, H. A., & Parhon, H. (2011). The relationship between academic motivation and academic achievement students. *Procedia - Social and Behavioral Sciences*, *15*, 399–402. https://doi.org/10.1016/j.sbspro.2011.03.111.

Andrei, C., Izabela, V. P., & Valentina, Z. (2014). Comparative Study between Study Tracks: Math and Sciences or Humanities, Regarding Academic Motivation and Learning Strategies in the 9th Grade Students. *Procedia - Social and Behavioral Sciences*, *128*, 432–437. https://doi.org/10.1016/j.sbspro.2014.03.183.

Ariff, S. S. M., Kumar, S. V., Azizi, M. N. Bin, & Hilmi, F. (2021). Relationship between Self-efficacy and Academic Motivation among University and College Students Enrolled in Kuala Lumpur during Movement Control Period (MCO). *Journal of Positive School Psychology*, *2022*(3), 3362–3374. https://api.taylorfrancis.com/content/books/mono/download?identifierName=doi&identifierValue=10.4324/9781003441298&type=googlepdf.

Basith, A., Syahputra, A., & Aris Ichwanto, M. (2020). Academic Self-Efficacy As Predictor Of Academic Achievement. *JPI (Jurnal Pendidikan Indonesia)*, *9*(1), 163. https://doi.org/10.23887/jpi-undiksha.v9i1.24403.

Blašková, M. (2014). Influencing Academic Motivation, Responsibility and Creativity. *Procedia - Social and Behavioral Sciences*, *159*, 415–425. https://doi.org/10.1016/j.sbspro.2014.12.399.

Calkins, L., Wiens, P., Parker, J., & Tschinkel, R. (2023). Teacher Motivation and Self-Efficacy: How do Specific Motivations for Entering Teaching Relate to Teacher Self-Efficacy? *Journal of Education*, *7*, 1–7. https://doi.org/10.1177/00220574221142300.

Cassidy, S. (2012). Exploring individual differences as determining factors in student academic achievement in higher education. *Studies in Higher Education*, *37*(7), 793–810. https://doi.org/10.1080/03075079.2010.545948.

Clark, M. H., & Schroth, C. A. (2010). Examining relationships between academic motivation and personality among college students. *Elsevier: Learning and Individual Differences*, *20*(1), 19–24. https://doi.org/10.1016/j.lindif.2009.10.002.

Creswell, J. W. (2014). Research Design: Qualitative, Quantitaive and Mixed Methods Approaches. In *News.Ge* (Fourth Edi). SAGE Publications, Inc..

Deci, E., & Ryan, R. (2013). *Intrinsic Motivation and Self-Determination in Human Behavior*. Springer New York, NY. https://doi.org/https://doi.org/10.1007/978-1-4899-2271-7.

Deci, E., & Ryan, R. (2016). Optimizing students' motivation in the era of testing and pressure : A self-determination theory perspective. In W. C. Liu, J. C. K. Wang, & R. M. Ryan (Eds.), *Building autonomous learners* (pp. 9–29). Springer. https://doi.org/https://doi.org/10.1007/978-981-287-630-0_2.

Dickinson, D. L. (2002). A bargaining experiment to motivate discussion on fairness. *Journal of Economic Education*, *33*(2), 136–151. https://doi.org/10.1080/00220480209596463.

Donche, V., Coertjens, L., Daal, T. van, Maeyer, S. De, & Petegem, P. Van. (2014). Understanding differences

in student learning and academic achievement in first year higher education: an integrated research perspective. In V. D. David Gijbels (Ed.), *Learning patterns in higher education : dimensions and research perspectives*. Routledge..

Ferreira, M., Cardoso, A. P., & Abrantes, J. L. (2011). Motivation and relationship of the student with the school as factors involved in the perceived learning. *Procedia - Social and Behavioral Sciences*, *29*, 1707–1714. https://doi.org/10.1016/j.sbspro.2011.11.416.

Fettahloğlu, P., & Ekici, G. (2011). Affect of teacher candidates' academic self-efficacy beliefs on their motivations towards sciences. *Procedia - Social and Behavioral Sciences*, *15*, 2808–2812. https://doi.org/10.1016/j.sbspro.2011.04.193.

Gbollie, C., & Keamu, H. P. (2017). Student Academic Performance : The Role of Motivation , Strategies , and Perceived Factors Hindering Liberian Junior and Senior High School Students Learning. *Hindawi: Education Research International*, 1–12. https://doi.org/10.1155/2017/1789084.

Gosselin, J. T., & Maddux, J. E. (2003). Self-Efficacy. In *" Handbook of Self and Identity* (Ed. Mark R, pp. 218–238). The Guilford Press.

Hatlevik, O. E., Throndsen, I., Loi, M., & Gudmundsdottir, G. B. (2018). Students' ICT self-efficacy and computer and information literacy: Determinants and relationships. *Elsevier: Computers & Education*, *118*, 107–119. https://doi.org/10.1016/j.compedu.2017.11.011.

Hill, A. P. (2013). Motivation and university experience in first-year university students: A self-determination theory perspective. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *13*, 244–254. https://doi.org/10.1016/j.jhlste.2012.07.001.

Jung, K.-R., Zhou, A. Q., & Lee, R. M. (2017). Self-efficacy, self-discipline and academic performance: Testing a context-specific mediation model. *Elsevier: Learning and Individual Differences*, *60*, 33–39. https://doi.org/10.1016/j.lindif.2017.10.004.

Karaguven, M. H., & Yukseloglu, S. M. (2013). Vocational Self-efficacy and Academic Motivation Levels of Technical and Vocational Pre-service Teachers (Example of Marmara University). *Procedia - Social and Behavioral Sciences*, *106*, 3366–3374. https://doi.org/10.1016/j.sbspro.2013.12.389.

Kharaem, R. A., Narimani, M., & Kharaem, S. A. (2012). A comparison of self-efficacy beliefs and achievement motivation in students with and without learning disability. *Journal of Learning Disabilities*, *1*(3), 85–104. https://doi.org/JLD-1-3-91-4-5.

Khasawneh, E., Gosling, C., & Williams, B. (2021). The effect of self-efficacy on maths anxiety among paramedic students. *Australian Journal of Paramedicine*, 1–7. https://doi.org/10.33151/ajp.18.814.

Kohan-Mass, J., & Tal, L. (2019). Differences in self-efficacy beliefs between girls in the top 1.5% and the top 3% in general cognitive ability who participate in gifted programs. *Gifted Education International*, *35*(1), 20–36. https://doi.org/10.1177/0261429417753130.

Komarraju, M., & Nadler, D. (2013). Self-efficacy and academic achievement: Why do implicit beliefs, goals, and effort regulation matter? *Learning and Individual Differences*, *25*, 67–72. https://doi.org/10.1016/j.lindif.2013.01.005.

Komarraju, Meera, & Karau, S. J. (2005). The relationship between the big five personality traits and academic motivation. *Elsevier: Personality and Individual Differences*, *39*(3), 557–567. https://doi.org/10.1016/j.paid.2005.02.013.

Koyuncuoğlu, Ö. (2021). An Investigation of Academic Motivation and Career Decidedness among University Students To cite this article : An Investigation of Academic Motivation and Career Decidedness among University Students. *International Journal of Research in Education and Science (IJRES)*, *7*(1), 125–143. https://doi.org/10.46328/ijres.1694.

Kwarteng, J. T., & Sappor, P. (2021). Preservice Teachers' Self-Efficacy in Teaching Cost Accounting. *Education Research International*, *2021*, 1–11. https://doi.org/10.1155/2021/9140161.

Lei, W., Zhang, H., Deng, W., Wang, H., Shao, F., & Hu, W. (2021). Academic self-efficacy and test anxiety in high school students: A conditional process model of academic buoyancy and peer support. *Sage Journal: School Psychology International*, 1–10. https://doi.org/10.1177/01430343211039265.

Li, Y. (2022). Analysis of Psychological Disorders and Adaptive Influence of Blended Learning of College Students. *Computational Intelligence and Neuroscience*, 1–12. https://doi.org/10.1155/2022/5418738.

Maddux, J. E., & Kleiman, E. M. (2018). Self-efficacy. In *The psychology of thinking about the future* (G. Oetting, pp. 174–198). The Guilford Press..

Mahama, I., Yusuf Dramanu, B., & Asamoah-Gyimah, K. (2023). Predictive Abilities of Curiosity, Creativity, and Motivation on Academic Performance of High School Students in Ghana. *Education Research International*, 1–10. https://doi.org/10.1155/2023/4626945.

Mamolo, L. A. (2022). Online Learning and Students' Mathematics Motivation, Self-Efficacy, and Anxiety in

the "new Normal." *Education Research International*, *2022*, 1–10. https://doi.org/10.1155/2022/9439634.

McGeown, S. P., Putwain, D., Simpson, E. G., Boffey, E., Markham, J., & Vince, A. (2014). Predictors of adolescents' academic motivation: Personality, self-efficacy and adolescents' characteristics. *Elsevier: Learning and Individual Differences*, *32*, 278–286. https://doi.org/10.1016/j.lindif.2014.03.022.

Niehaus, K., Rudasill, K. M., & Adelson, J. L. (2012). Self-Efficacy, Intrinsic Motivation, and Academic Outcomes Among Latino Middle School Students Participating in an After-School Program. *Hispanic Journal of Behavioral Sciences*, *34*(1), 118–136. https://doi.org/10.1177/0739986311424275.

Nurafifah, F. F., Sudrajat, A., & Akbar, Z. (2021). The Effect of Academic Motivation and Information Literature Self-Efficiency on Student Academic Achievement. *International Journal of Multicultural and Multireligious Understanding*, *8*(8), 421–429. https://doi.org/10.18415/ijmmu.v8i8.2952.

Onena, A. S., & Ulusoya, F. M. (2012). The effects of academic motivations of secondary school students on their attitudes towards the chemistry course. *Procedia - Social and Behavioral Sciences*, *46*, 5397 – 5401. https://doi.org/10.1016/j.sbspro.2012.06.446.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68. https://doi.org/10.1037/0003-066X.55.1.68.

Saracaloğlu, A. S., & Dinçer, I. B. (2009). A study on correlation between self-efficacy and academic motivation of prospective teachers. *Procedia - Social and Behavioral Sciences*, *1*(1), 320–325. https://doi.org/10.1016/j.sbspro.2009.01.060.

Shamdas, G. (2023). The Relationship between Academic Self-Efficacy and Cognitive Learning Outcomes of High School Students in Biology Subjects through Problem-Based Learning Model. *Journal of Research in Science Education*, *8*(7), 5466–5473. https://doi.org/10.21070/acopen.8.2023.5317.

Shams, F., Mooghali, A. R., Tabebordbar, F., & Soleimanpour, N. (2011). The mediating role of academic self-efficacy in the relationship between personality traits and mathematics performance. *Procedia - Social and Behavioral Sciences*, *29*(2011), 1689–1692. https://doi.org/10.1016/j.sbspro.2011.11.413.

Shane-Simpson, C., Desens, E., Kleutsch, A., & Obeid, R. (2022). Relationships Among Study Guide Format, Academic Motivation, Self-Efficacy, and Student Grades. *Sage Journal: Teaching of Psychology*, *1*(1), 1–10. https://doi.org/10.1177/00986283221134594.

Skaalvik, E. M., & Skaalvik, S. (2016). Teacher Stress and Teacher Self-Efficacy as Predictors of Engagement, Emotional Exhaustion, and Motivation to Leave the Teaching Profession. *Creative Education*, *7*(13), 1785–1799. https://doi.org/10.4236/ce.2016.713182.

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*(1), 65–94. https://doi.org/10.1037/0033-2909.133.1.65.

Sugiyono. (2014). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Alfabeta.

Sun, Y. (2022). Strategies for Ideological and Political Education in Colleges and Universities Based on Deep Learning. *Computational Intelligence and Neuroscience*, 1–9. https://doi.org/10.1155/2022/5322677.

Taheri-Kharameh, Z., Sharififard, F., Asayesh, H., Sepahvandi, M., & Hoseini, M. H. (2018). Relationship between academic self-efficacy and motivation among medical science students. *Journal of Clinical and Diagnostic Research*, *12*(7), 7–10. https://doi.org/10.7860/JCDR/2018/29482.11770.

Tan, C., Yi, L., Haider, A., Kwen, L., Mamnoon, R., Li, K., & Liu, M. (2022). The Influence of Teachers' Management Efficiency and Motivation on College Students' Academic Achievement under Sustainable Innovation and the Cognition of Social Responsibility after Employment. *Journal of Environmental and Public Health*, *2022*, 1–9. https://doi.org/10.1155/2022/1663120.

Tohidi, H., & Jabbari, M. M. (2012). The effects of motivation in education. *Procedia Social and Behavioral Sciences*, *31*(2011), 820–824. https://doi.org/10.1016/j.sbspro.2011.12.148.

Tsang, S. K. M., Hui, E. K. P., & Law, B. C. M. (2012). Self-efficacy as a positive youth development construct: A conceptual review. *The Scientific World Journal*, 1–7. https://doi.org/10.1100/2012/452327

Tschannen-Moran, & Hoy, W. (2001). Teacher Efficacy: Capturing an Elusive Construct. *Teaching and Teacher Education*, *17*, 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1.

Uzuntiryaki-Kondakci, E., Demirdöğen, B., Akın, F. N., Çelikkiran, A. T., & Aydin-Günbatar, S. (2017). Exploring the Complexity of Teaching: The Interaction between Teacher Self-regulation and Pedagogical Content Knowledge. *Chemistry Education Research and Practice*, *18*(1), 1–9. https://doi.org/10.1039/C6RP00223D.

Van Zyl, L. E., Klibert, J., Shankland, R., See-To, E. W. K., & Rothmann, S. (2022). The General Academic Self-Efficacy Scale: Psychometric Properties, Longitudinal Invariance, and Criterion Validity. *Journal of Psychoeducational Assessment*, *40*(6), 777–789. https://doi.org/10.1177/07342829221097174.

Vavropa, S., Hladik, Y., & Hrbackova, K. (2012). The Determinants of Self-Regulated Learning Development in Students of Helping Professions. *Procedia - Social and Behavioral Sciences*, *69*, 332–340. https://doi.org/10.1016/j.sbspro.2012.11.418.

Wang, J., Stebbins, A., & Ferdig, R. E. (2022). Examining the effects of students' self-efficacy and prior knowledge on learning and visual behavior in a physics game. *Elsevier: Computers & Education*, *178*, 104405. https://doi.org/10.1016/j.compedu.2021.104405.

Wei, Y., Shi, Y., MacLeod, J., & Yang, H. H. (2022). Exploring the Factors That Influence College Students' Academic Self-Efficacy in Blended Learning: A Study From the Personal, Interpersonal, and Environmental Perspectives. *SAGE Open*, *12*(2), 1–12. https://doi.org/10.1177/21582440221104815.

Wolters, C. A., Pintrich, P. R., & Karabenick, S. A. (2005). Assessing Academic Self-Regulated Learning. In K. A. M. & L. H. Lippman (Ed.), *What Do Children Need to Flourish?* (pp. 251–270). Springer Science+Business Media. https://doi.org/https://doi.org/10.1007/0-387-23823-9_16.

Wu, L., & Ma, C. (2022). An Empirical Study on the Relationship among Mental Health, Learning Engagement, and Academic Self-Efficacy of Senior High School Students. *Journal of Environmental and Public Health*, 1–8. https://doi.org/10.1155/2022/4253142.

Yarin, A. J., Encalada, I. A., Elias, J. W., Surichaqui, A. A., Sulca, R. E., & Pozo, F. (2022). Relationship between Motivation and Academic Performance in Peruvian Undergraduate Students in the Subject Mathematics. *Education Research International*, *2022*, 1–11. https://doi.org/10.1155/2022/3667076.

Yeşilyurt, E., Ulaş, A. H., & Akan, D. (2016). Teacher self-efficacy, academic self-efficacy, and computer self-efficacy as predictors of attitude toward applying computer-supported education. *Computers in Human Behavior*, *64*, 591–601. https://doi.org/10.1016/j.chb.2016.07.038.

You, S., Kim, E. K., Lim, S. A., & Dang, M. (2021). Student and Teacher Characteristics on Student Math Achievement. *Journal of Pacific Rim Psychology*, *15*, 1–13. https://doi.org/10.1177/1834490921991428.

Yu, L., & Shen, J. (2022). Analysis of the Correlation between Academic Performance and Learning Motivation in English Course under a Corpus-Data-Driven Blended Teaching Model. *Scientific Programming*, 1–11. https://doi.org/10.1155/2022/3407270.

Yusuf, M. (2011). The impact of self-efficacy, achievement motivation, and self-regulated learning strategies on students' academic achievement. *Procedia-Social and Behavioral Sciences*, *15*, 2623–2626. https://doi.org/10.1016/j.sbspro.2011.04.158.

Zeinalipour, H. (2022). School Connectedness, Academic Self-Efficacy, and Academic Performance: Mediating Role of Hope. *Psychological Reports*, *125*(4), 2052–2068. https://doi.org/10.1177/00332941211006926.

Zhen, R., Liu, R.-D., Ding, Y., Wang, J., Liu, Y., & Xu, L. (2017). The mediating roles of academic self-efficacy and academic emotions in the relation between basic psychological needs satisfaction and learning engagement among Chinese adolescent students. *Learning and Individual Differences*, *54*, 210–216. https://doi.org/10.1016/j.lindif.2017.01.017.

Zimmerman, B. J. (2010). Self-efficacy and educational development. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 202–231). Published online by Cambridge University Press. https://doi.org/10.1017/CBO9780511527692.009.