Jurnal Kependidikan:
Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran
https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/index

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

Examining Academic Self Efficacy to Achieve Student Academic Performance: Evidence from Computer-Based Training

Arika Palapa
Politeknik Ilmu Pelayaran Semarang
***Corresponding Author. Email: arika@pip-semarang.ac.id**

Abstract: This study aims to investigate the impact of mastery goal orientation (MGO) and self-directed learning (SDL) on academic performance via academic self-efficacy (ASE). As a learning medium, computer-based training (CBT) attempts to boost student confidence. The study used a quantitative approach, with 142 merchant marine school students serving as participants. The questionnaire was used as a research tool to collect data. To assess and measure variable relationships, research data was examined using structural equation modeling. According to the findings of the study, MGO and SDL have a direct impact on ASE and academic achievement. The study revealed that ASE mediated MGO and SDL in relation to academic achievement. Individual ambition to acquire information and competence results in ASE, which indicated students' confidence. CBT allows students to broaden their learning interests. SDL and CBT complement each other in a mutually beneficial way. CBT is a learning tool; nevertheless, without SDL, it will be ineffective in improving academic achievement. SDL without CBT is less effective since students are unable to explore a broader range of information and expertise. When students use CBT as a learning medium, they frequently study and practice, gaining more knowledge and expertise. CBT is thought to be an effective learning medium for increasing student academic confidence and performance.

Article History
Received: 06-01-2023
Revised: 13-02-2023
Accepted: 22-02-2023
Published: 16-03-2023

Key Words:
Mastery Goal Orientation; Self-Directed Learning; Academic Self-Efficacy; Academic Performance; CBT.

How to Cite: Palapa, A. (2023). Examining Academic Self Efficacy to Achieve Student Academic Performance: Evidence from Computer-Based Training. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran, 9*(1), 80-91. doi:https://doi.org/10.33394/jk.v9i1.7074

https://doi.org/10.33394/jk.v9i1.7074

Introduction

Learning in the vocational school aims to develop student expertise (Kuntoro et al., 2019; Löfgren et al., 2020). Developing skills is not sufficient when only learning in the classroom. Skills development aims to increase expertise when working. Hence, a learning process focusing more on psychomotor aspects is needed. However, vocational learning lacks the development of psychomotor aspects to improve students' skills (Lim & Lee, 2018; Rahmatullah et al., 2021). Rahmatullah et al., 2021). The learning process at a merchant marine vocational school has a specificity that is different from other schools, with a laboratory designed to be similar to the original in the ship. The merchant marine vocational school laboratory provides simulators to assist students in comprehensively understanding the work on ships (Dionis et al., 2013; Fauzi et al., 2016). The learning process using a simulator at the vocational school allows learning only in the laboratory. Other laboratories that aim to improve student academic performance also have limitations, thus encouraging less optimal learning processes, which have implications for declining student academic performance (Veitch et al., 2018). Limited facilities and infrastructure in schools require an alternative tool for students to improve academic performance. The tool used in schools is computer-based training (CBT), which aims to provide learning experiences for students at school and can be

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

accessed elsewhere. CBT has several advantages, including time and space flexibility (Budhianto, 2020).

CBT is a tool used to increase student learning to obtain a more comprehensive learning experience (Laharnar et al., 2013). The learning experience of students who need a laboratory can use CBT as an alternative to understand and provide clearer visualization; it also increases students' cognitive and psychomotor abilities (Samsudi & Hosaini, 2020). CBT learning process has several issues related to motivation and independent learning. CBT is a tool that has the advantage of providing flexibility in terms of space and time. However, students' motivation and self-directed learning need further investigation. Merchants' marine schools require an application to improve student academic performance. Students use a website-based tool application to familiarize themselves with exam questions and improve their proficiency. The learning technique employs application-based CBT to enable students to learn independently (Handayani & Dewi, 2019). Self-directed learning is essential to offer students enhanced understanding. Self-directed learning is a vital component of developing pupils' knowledge. Self-directed learning is an essential aspect of improving students' knowledge. Merchant marine schools are expected to create skilled graduates working on ships. Self-directed learning is a method to improve skills and competencies. Self-directed learning advantage is that students can access it anytime to provide better enrichment (Karatas & Arpaci, 2021).

The tools used to undertake self-directed learning are an advantage that students can use to gain enrichment material. When students learn from the teacher, the time is limited; however, the CBT applications in self-directed learning students can access it anytime and anywhere (Kirana et al., 2021; Sadeck et al., 2020). Students become more familiar with self-directed learning and improve their competence. Students become more familiar with self-directed learning and improve their competence. *Student mastery goal orientation* is an effort and motivation to learn and view a mistake as corrective feedback to develop a better understanding. Mastery goal orientation is a student's positive motivation to improve abilities through learning to reduce failure and achieve goals (Lazarides et al., 2018).

Merchant marine schools aim to create competent workers in the shipping sector (Fan et al., 2017). Student learning through CBT requires motivation to develop academic self-efficacy (Hwang & Oh, 2021). Mastery goal orientation is important to encourage students' academic self-efficacy (Baghurst et al., 2015). Previous research which explores the relationship between mastery goal orientation and academic self-efficacy is limited (Datu et al., 2022; Lazarides & Raufelder, 2017). However, examining mastery goal orientation and academic self-efficacy is essential to understand how student academic confidence develops through motivation. This research relates the motivation of vocational school students specifically related to the practical aspect of seafarers. Previous research lacks exploring merchant marine vocational school students' abilities and skills from self-directed learning and goal orientation (Ghosh & Rubly, 2017). The learning process aims to increase self-confidence using learning media through CBT, which is needed to improve students' academic performance (Yuliana & Suhaimah, 2019). Previous research still needs to elaborate on self-directed learning in its effect on academic performance; Karatas & Arpaci (2021) suggest examining the relationship, especially in vocational school settings.

Academic performance reflects that students' capability to achieve competencies in gain results that describe students’ expertise (Alamri et al., 2020). The independent learning process through CBT encourages better student learning abilities which results in achieving academic performance. Self-directed learning activities provide opportunities for students to enrich themselves (Geng et al., 2019). Based on the theoretical and empirical gap, the study

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

examines mastery goal orientation and self-directed learning towards academic performance through academic self-efficacy in a merchant marine vocational school.

Self-directed learning is a process organized by schools to help comprehensive learning activities. Self-directed learning has the advantage that students have a flexible time and place to learn. Self-directed learning with flexibility has a longer time, so it is expected to have implications for more optimal student abilities. When students learn with better quantity and quality, confidence is vital. This study aims to test the effect of self-directed learning on academic self-efficacy (Prior et al., 2016). The learning process using independent learning aims to help students gain enrichment about material that has yet to be studied when studying in class so that there is a long time to repeat the material or deepen the discussion (Budhianto, 2020). The independent learning process requires facilities provided by the school and an application based on CBT. CBT-based application is a strategy to increase student learning quantity and quality. Based on this learning strategy, vocational school students have more opportunities to increase their confidence to master the expected competencies (Gao et al., 2021). When students have more learning opportunities, it has implications for increased ability and self-confidence. The indicator used is that students have a level of confidence to practice.

Mastery goal orientation is an effort students make to avoid failure by practising a lot—the exercises aimed at achieving satisfactory academic performance. Students aim to graduate and work in the shipping sector, so adequate academic performance is needed based on these goals. Learning activities have a goal to be achieved, namely mastering competencies and skills so that when students face exams, their abilities will be represented by the assessment results (Shukla et al., 2020). To get good assessment results, students try repetitive learning activities to ensure their abilities. One of the essential aspects of the learning process is the desire to achieve predetermined competencies. Learning activities are an essential aspect that is driven by mastery goal orientation. When students have a mastery goal orientation, it reflects an essential aspect that guides them. Mastery goal orientation is a guide to ensure that learning activities' goals are achieved. The learning process driven by mastery goal orientation will produce satisfactory academic performance, so mastery goal orientation influences academic performance. Mastery goal orientation is an important aspect in determining learning success. When students have a mastery goal orientation, there are targets to be achieved to encourage motivation to obtain satisfactory academic performance and pass (Lazarides & Raufelder, 2017). Graduation is achieved when students get results that exceed the standard on a national-scale competency test. In obtaining satisfactory results, it is necessary to have an effort to encourage students' learning abilities so that the cognitive and psychomotor aspects meet the minimum standards. Learning activities driven by mastery goal orientation reflect students' intentions to complete their education well.

Self-directed learning is a process of utilizing CBT. CBT is not only available through the laboratory but is web-based learning. Independent learning activities encourage students to have material enrichment from the teacher. Self-directed learning has flexibility in time and location, and the learning activities help students obtain more material (Hwang & Oh, 2021). When students take self-directed learning through CBT, these learning activities will encourage increased knowledge and skills through watching practical videos to provide insight to students. Self-directed learning activities encourage students actively to raise their intentions in completing the material to enhance academic performance (Khiat, 2017). The more students learn the material and increase their skills through the CBT videos; the more their academic performance will increase. In the vocational learning process, activities that support the laboratory are needed because the use of the laboratory is limited in terms of

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

time, so enrichment is needed to improve students' skills, one of which is self-directed learning (Lemmetty & Collin, 2020). The activities carried out are students following the plans contained in CBT to achieve the expected competency standards. Self-directed learning is associated with students' ability to perform managerial skills in compiling the learning process and conducting independent evaluations to obtain feedback that can improve student competence.

When students often open CBT to self-directed learning, they gain more knowledge and skills. This can spur students' academic abilities and academic self-efficacy at both terms of cognitive and psychomotor to produce academic performance. Mastery goal orientation is a motivational concept that encourages students to learn by improving their abilities to avoid failure. Students with a mastery goal orientation use learning strategies to elaborate material to understand material to improve their understanding of new material (Celuch et al., 2021). Students with mastery goal orientation produce a comprehensive understanding and academic self-efficacy of cognitive and psychomotor aspects. Students with mastery goal orientation have satisfactory academic performance in producing academic performance through a continuous learning process (Frommelt et al., 2021). Student learning activities encourage academic self-efficacy, cognitive, and psychomotor aspects to increase. Learning activities that use CBT are prone to implications for both positive and negative aspects depending on the difficulties encountered in the application. This study examines CBT application to strengthen mastery goal orientation toward academic performance (Alimen et al., 2019; Phan et al., 2019; Tan et al., 2017). Self-directed learning is essential in shaping students' academic performance, so CBT will encourage optimal learning abilities. There are technological challenges when students operate CBT, so the learning process depends on the ability to use CBT. CBT is easy to use and operate to improve student's learning abilities and tends to be enjoy (Denovan et al., 2020; Sulistyaningsih & Sugiman, 2016). Self-directed learning is used to provide enrichment to students so that the appearance of CBT significantly strengthens academic performance.

Research Method

The effect of variables was investigated using a quantitative approach in this study. Correlational research investigates variable relationships (Shafait et al., 2021). This study employed exogenous variables such as mastery goal orientation and self-directed learning, mediating variables such as academic self-efficacy, and endogenous variables such as academic performance. As participants, the study included 142 merchant marine vocational high school students. The sample criterion was a student who has already experienced CBT as a self-directed learning tool. The questionnaire was a research instrument; therefore, the student filled it in to obtain research data. The questionnaire ranges from 1, representing very disagree, to 5, indicating very agree. This study examined the validity, reliability, and hypothesis testing to analyze research data and draw conclusions. The research employed Lisrel 8.8 application as a structural equation model to examine the variable relationship.

Results and Discussion

The research was analyzed for validity, reliability, and hypothesis testing. Validity test results determine through the loading factor in each indicator.

Jurnal Kependidikan:
Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran
https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/index

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

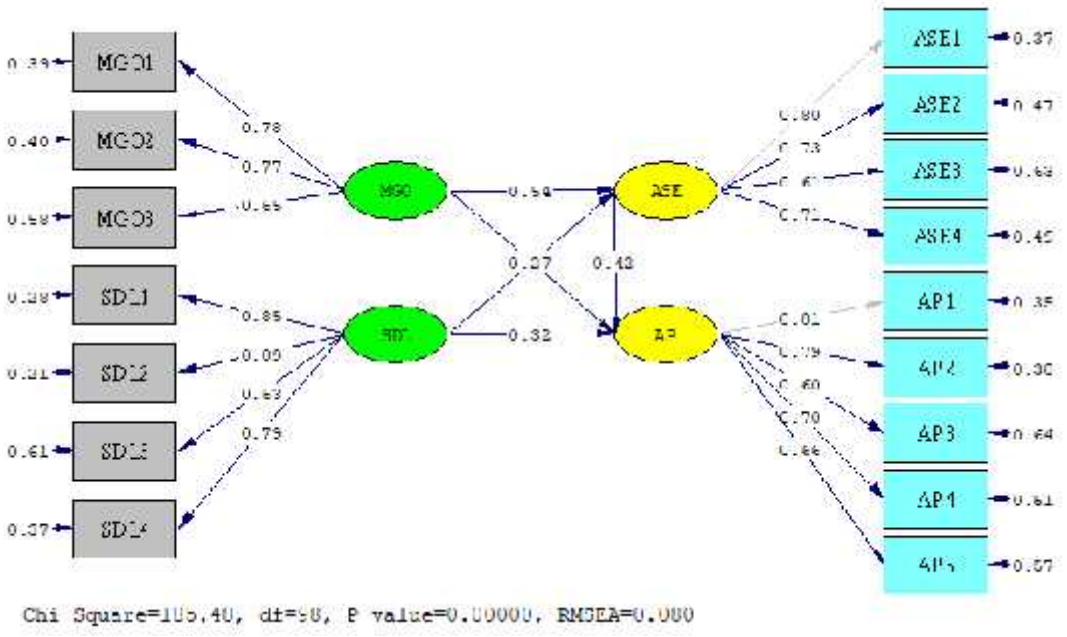

Figure 1. Loading Factor Result

The loading factor results in Figure 1 indicate that all indicators have valid results ≥0.6. The lowest loading factor is AP3 (0.60), and the highest is SDL2 (0.89). Reliability test measure consistency with the role of thumb using Cronbach's alpha ≥0.7. The research indicates reliability test results in each variable Academic Performance (0.815), Mastery Goal Orientation (0.800), Academic Self Efficacy (0.846), and Self-Directed Learning (0.867).

Table 1. Direct Effect

Variable	S.E	CR	P	Result
MGO → ASE	0.233	5.16	0.000	Supported
SDL → ASE	0.411	4.38	0.000	Supported
MGO → AP	0.398	2.07	0.001	Supported
SDL → AP	0.347	3.08	0.000	Supported
ASE → AP	0.290	2.47	0.000	Supported

The results of hypothesis testing in Table 1 show that mastery goal orientation significantly affects academic self-efficacy (β = 5.16, sig. 0.000). Mastery goal orientation has a significant effect on academic performance (β = 2.07, sig. 0.001). Self-directed learning has a significant effect on academic self-efficacy (β = 4.38, sig. 0.000) and academic performance (β = 3.08, sig. 0.000). Thus, research indicates academic self-efficacy has a significant effect on academic performance (β = 2.47, sig. 0.000).

Table 2. Indirect Effect

Variable	S.E	CR	P	Result
MGO → ASE → AP	1.601	7.94	0.000	Supported
SDL → ASE → AP	1.626	6.65	0.000	Supported

Table 2 shows the indirect effect of mastery goal orientation on academic performance through academic self-efficacy. The test results show that the indirect effect is significant (β = 7.94, sig. 0.000). Indirect effect also tested self-directed learning towards academic performance through academic self-efficacy, the result is significant (β = 6.65, sig. 0.000). The test results indicate that academic self-efficacy partially mediates mastery goal

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

orientation and self-directed learning on academic performance. The detailed figure of the research framework is represented in Figure 2.

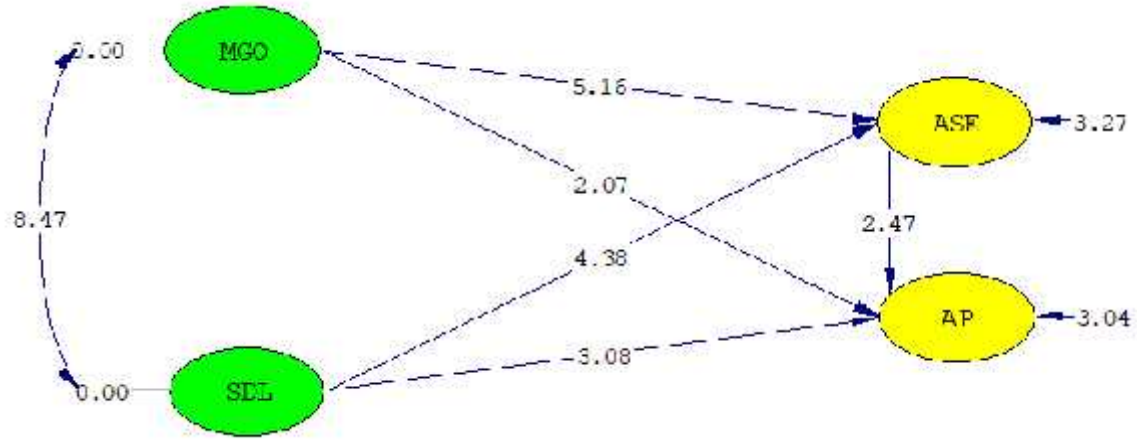

Figure 2. Structural Model

The learning process held with self-directed learning is an important aspect of improving students' understanding and competence. *Mastery goal orientation* is a concept that aims to increase students' understanding so that there is a desire to acquire competence. Mastery goal orientation is clarity for students to plan for the future (Jahedizadeh et al., 2016). The process passed by the existence of this planning makes students want to learn as much as possible. Activities held in the self-directed learning process are the implementation of mastery goal orientation to gain competence. Learning activities are processes carried out by students to improve their abilities both in cognitive and psychomotor aspects (Luo et al., 2020). Mastery goal orientation is clarity that students have to master a material so that both cognitive and psychomotor aspects of students can understand and implement. Vocational schools that focus on psychomotor aspects driven by mastery goal orientation will produce students who graduate with adequate quality (Mao et al., 2020). The quality of students with mastery goal orientation will clarify learning at Merchant marine school. Students who want to work on other ships or shipping can have clear goals affecting self-directed learning. Mastery goal orientation is a concept of student motivation to acquire knowledge and skills to increase their competencies (Lüftenegger et al., 2014). The competence aspect is essential in vocational schools to improve the work experience. This research has proven that motivating students to acquire new competencies and develop and improve their skills and knowledge affects self-directed learning through CBT. The learning process through CBT is an implementation part of the motivation that arises in students.

Mastery goal orientation is essential to the learning process to increase the individual desire to obtain satisfactory learning outcomes. This study has proven that mastery goal orientation influences academic performance. This study illustrates that when students have the motivation to understand new insights and skills and develop their competencies comprehensively, it affects academic performance (Sadeck et al., 2020). A student with abilities and an on going learning process to improve cognitive and psychomotor aspects have a vital role in determining learning success described in academic performance. Learning in the classroom will be important in determining the success of learning (Alimen et al., 2019). One of the factors is not only determined by the teacher, facilities, and materials but the motivation contained in students when students have a mastery goal orientation (Shukla et al., 2020). Then there is clarity of goals that students want to achieve when they graduate. When they are in school, students have a strong motivation to achieve the desired

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

job after graduating, which is a means to improve their abilities and competencies so that students realize when they graduate. The learning process held at the school is oriented towards increasing the competence of merchant marine school students to have an important role in determining academic performance (Leal-Rodríguez & Albort-Morant, 2019). Students will take competency exams nationally to test their understanding and skills in shipping. The educational process held in schools will help prepare for the exam. Students with a mastery goal orientation will prepare for exams optimally so that there is a role for students to study hard, which has positive implications for academic performance (Skaalvik & Federici, 2016). Students who realize they need to learn continuously have a better academic aspect. The learning process held in schools determines the level of student academic performance.

Self-directed learning is a process that students do by using CBT to get material enrichment. The conventional learning process is carried out with material the teacher presents in the classroom and the laboratory. Students who want to acquire competence have the initiative to do self-directed learning. In addition, the teacher provides self-directed learning as a complement to the conventional learning process. The addition of these materials and enrichment affects the academic performance of students. This study has proven that self-directed learning affects students' academic performance. The learning process of CBT media has proven critical in influencing academic performance (Murniati, 2016), so regular use is vital in improving competence. The learning process held with CBT learning media has a vital role in providing the material that can complement the learning process so that students get complete material. Independent learning activities do not only focus on cognitive aspects but also psychomotor aspects, where students with laboratory limitations can obtain additional material and practice through visualization available in CBT (Khiat, 2017; Pan, 2020). The self-directed learning process involves planning the study material so students can study individually or in groups (Zamnah & Ruswana, 2019). The plan is used as an evaluation consisting of several chapters, and each chapter analyzes the student's ability level. Self-directed learning has an evaluation that aims to provide feedback on student competencies to be used as a reference for carrying out the learning process. This research has proven that self-directed learning is essential in determining learning success, represented by academic performance.

This study proves that the role of learning carried out individually or in groups as an additional alternative and enrichment can be important in determining student academic performance. Students get learning that can provide complete material by using self-directed learning provided by the teacher through CBT. Learning orientation is a motivation within students to have competencies under their expectations. The context of this research is at the merchant marine school, so the mastery goal orientation is competence in the shipping field that will be used when working. Students want superior competence in the shipping field to have fluency in work so that during education, students are motivated to learn and take the initiative to carry out learning activities independently through CBT. The CBT facilities provided by the school are an essential aspect in determining the success of learning by being represented by academic performance (Shafait, Yuming, et al., 2021). This study proves that self-directed learning mediates the effect of mastery goal orientation on academic performance, which indicates that someone motivated to carry out learning activities and acquire specific competencies will be diligent in using CBT to obtain additional materials and competencies used for exams and obtain good academic performance. Mastery goal orientation is a motivation within students to gain competence. Efforts to obtain these competencies have an output, namely academic performance, which describes the ability of

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

students to obtain materials and competencies during their education at the merchant marine school. The organized learning process is an effort and media used to increase students' knowledge and skills to operate on the ship when they work. These learning activities are supported by self-directed learning to achieve satisfactory academic performance.

The results showed that mastery was important in encouraging students' motivation to acquire skills and knowledge through the learning process using the media available at school. Media learning is a computer with a CBT component in encouraging student learning. Learning activities are held oriented toward the motivation of students to be able to practice through the learning process that is already available by using various learning instruments such as videos and other tools to increase confidence (Gao et al., 2021). These learning outcomes have a positive effect on students' academic self-efficacy. Arouses student motivation is vital in providing enthusiasm and encouragement toward student self-confidence, an essential part of the learning process (Teuber et al., 2021). Student self-confidence arises when teachers have a presentation about the usefulness of tools and encouragement to shape student behavior related to academic performance. The research confirms that mastery goal orientation has a positive influence on the academic self-efficacy of students. The results indicate that the orientation to be able to study the learning process comprehensively has a positive influence on student self-confidence. Self-confidence is developed slowly, but the teacher gradually generates students' confidence through the learning process, which shows progress in improving skills through learning experiences (Srivastava & Dangwal, 2017).

The study results also showed that self-directed learning increases student confidence. *Self-directed learning* is a process that provides enrichment about the material taught to students so that learning can be carried out flexibly. Self-directed learning encourages students to develop material the teacher has delivered during the learning process (Adinda & Mohib, 2020). *Independent learning activities* are a process that arises when students have an interest in learning resources that add knowledge and skills. Schools that provide facilities in the form of CBT to improve student's skills and knowledge have the opportunity to improve self-directed learning (Harasym et al., 2013). The results showed that self-directed learning affects the self-efficacy of academic students, so the learning process has a positive role. Students who study with more frequency influence their self-confidence presented by academic self-efficacy.

Conclusion

The study's results proved that mastery goal orientation and self-directed learning affect academic self-efficacy. The study's results proved mastery goal orientation and self-directed learning affect academic performance. The test results also analyzed the effect of academic self-efficacy on academic performance, which produces a positive effect. This study indicates that academic self-efficacy partially mediates the effect of mastery goal orientation and self-directed learning on academic performance. The study results indicate that schools must provide CBT facilities to encourage students to increase their self-confidence and have implications for academic performance.

Recommendation

Based on the study's results, it is necessary to familiarize students with operating CBT technology to develop academic self-efficacy and performance. Research proves that self-directed learning is essential in determining academic performance; schools should encourage and provide facilities to make students comfortable. Research indicates teachers can provide

CBT facilities through materials and audiovisuals to improve student competence. Teachers, as facilitators, should provide creative media to develop student understanding, for example, tutorial videos to enrich student knowledge. Creative media also increase student interest in learning.

References

Adinda, D., & Mohib, N. (2020). Teaching and instructional design approaches to enhance students' self-directed learning in blended learning environments. *Electronic Journal of E-Learning*, *18*(2). https://doi.org/10.34190/EJEL.20.18.2.005

Alamri, M. M., Almaiah, M. A., & Al-Rahmi, W. M. (2020). Social media applications affecting students' academic performance: A model developed for sustainability in higher education. *Sustainability (Switzerland)*, *12*(16). https://doi.org/10.3390/su12166471

Alimen, R. A., Ortega, N. B., Galve, R. M., & Bito-onon, L. B. (2019). Computer-Based Training (CBT): Innovation and Influence Towards Teaching-Learning Process at JBLFMU-Molo. *TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation*, *12*(4), 821–825. https://doi.org/10.12716/1001.12.04.22

Baghurst, T., Tapps, T., & Kensinger, W. (2015). Setting Goals for Achievement in Physical Education Settings. *Strategies*, *28*(1). https://doi.org/10.1080/08924562.2014.980876

Budhianto, B. (2020). Mempengaruhi Keberhasilan Pembelajaran Daring (E - Learning). *Jurnal AgriWidya*, *1*(1).

C. Frommelt, M., Schiefele, U., & Lazarides, R. (2021). Teacher Enthusiasm, Supportive Instructional Practices, and Student Motivation in Mathematics Classrooms. *Interdisciplinary Education and Psychology*, *2*(3). https://doi.org/10.31532/interdiscipeducpsychol.2.3.005

Celuch, K., Milewicz, C., & Saxby, C. (2021). Student and faculty interaction in motivated learning for face-to-face and online marketing classes. *Journal of Education for Business*, *96*(6). https://doi.org/10.1080/08832323.2020.1848767

Datu, J. A. D., Valdez, J. P. M., & Yang, W. (2022). The academically engaged life of mastery-oriented students: Causal ordering among positive emotions, mastery-approach goals, and academic engagement. *Revista de Psicodidactica*, *27*(1). https://doi.org/10.1016/j.psicod.2021.02.001

Denovan, A., Dagnall, N., Macaskill, A., & Papageorgiou, K. (2020). Future time perspective, positive emotions and student engagement: a longitudinal study. *Studies in Higher Education*, *45*(7). https://doi.org/10.1080/03075079.2019.1616168

Dionis, A., Pérez, M. V., Padrón, F., & García, J. A. (2013). Nautical web-based asynchronous training environments: Student motivators. *Journal of Maritime Research*, *10*(2).

Fan, L., Fei, J., Schriever, U., & Fan, S. (2017). The communicative competence of Chinese seafarers and their employability in the international maritime labour market. *Marine Policy*. https://doi.org/10.1016/j.marpol.2017.05.035

Fauzi, A., Bundu, P., & Tahmir, S. (2016). The development of maritime english learning model using authentic assessment based bridge simulator in merchant marine polytechnic, Makassar. *International Journal of Environmental and Science Education*, *11*(10).

Gao, H., Ou, Y., Zhang, Z., Ni, M., Zhou, X., & Liao, L. (2021). The Relationship Between Family Support and e-Learning Engagement in College Students: The Mediating Role

of e-Learning Normative Consciousness and Behaviors and Self-Efficacy. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.573779

Geng, S., Law, K. M. Y., & Niu, B. (2019). Investigating self-directed learning and technology readiness in blending learning environment. *International Journal of Educational Technology in Higher Education*, *16*(1). https://doi.org/10.1186/s41239-019-0147-0

Ghosh, S., & Rubly, C. (2017). Seafarers' perceptions of training towards compliance with the ballast water management (BWM) convention. *Australian Journal of Maritime and Ocean Affairs*. https://doi.org/10.1080/18366503.2017.1326092

Handayani, A., & Shinta Dewi, I. (2019). Students and Teachers' Perception of Using CBT Seagull Training Lab for Learning Maritime English in PIP Semarang. *KnE Social Sciences*. https://doi.org/10.18502/kss.v3i23.5135

Harasym, P. H., Tsai, T. C., & Munshi, F. M. (2013). Is problem-based learning an ideal format for developing ethical decision skills? *Kaohsiung Journal of Medical Sciences*, *29*(10), 523–529. https://doi.org/10.1016/j.kjms.2013.05.005

Hwang, Y., & Oh, J. (2021). The relationship between self-directed learning and problem-solving ability: The mediating role of academic self-efficacy and self-regulated learning among nursing students. *International Journal of Environmental Research and Public Health*, *18*(4). https://doi.org/10.3390/ijerph18041738

Jahedizadeh, S., Ghanizadeh, A., & Ghonsooly, B. (2016). The role of EFL learners' demotivation, perceptions of classroom activities, and mastery goal in predicting their language achievement and burnout. *Asian-Pacific Journal of Second and Foreign Language Education*, *1*(1). https://doi.org/10.1186/s40862-016-0021-8

Karatas, K., & Arpaci, I. (2021). The role of self-directed learning, metacognition, and 21st century skills predicting the readiness for online learning. *Contemporary Educational Technology*, *13*(3). https://doi.org/10.30935/cedtech/10786

Khiat, H. (2017). Academic performance and the practice of self-directed learning: The adult student perspective. *Journal of Further and Higher Education*, *41*(1). https://doi.org/10.1080/0309877X.2015.1062849

Kirana, F. H., Lathif, T., Suryanto, M., & Safitri, E. M. (2021). Perspektif Pengguna Terhadap Penerapan Aplikasi Microsoft Teams. *Jurnal Informatika Dan Sistem Informasi (JIFoSI)*, *02*(1).

Kuntoro, T., Sudana, I. M., & Anis, S. (2019). The implementation of competency certification test for vocational students of Light Vehicle Engineering Program by LSP-P3 in Banyumas. *Journal of Vocational and Career Education*, *4*(2), 74–82.

Laharnar, N., Glass, N., Perrin, N., Hanson, G., & Kent Anger, W. (2013). A training intervention for supervisors to support a work-life policy implementation. *Safety and Health at Work*, *4*(3). https://doi.org/10.1016/j.shaw.2013.07.001

Lazarides, R., Buchholz, J., & Rubach, C. (2018). Teacher enthusiasm and self-efficacy, student-perceived mastery goal orientation, and student motivation in mathematics classrooms. *Teaching and Teacher Education*, *69*. https://doi.org/10.1016/j.tate.2017.08.017

Lazarides, R., & Raufelder, D. (2017). Longitudinal effects of student-perceived classroom support on motivation - A latent change model. *Frontiers in Psychology*, *8*(MAR). https://doi.org/10.3389/fpsyg.2017.00417

Leal-Rodríguez, A. L., & Albort-Morant, G. (2019). Promoting innovative experiential learning practices to improve academic performance: Empirical evidence from a

Spanish Business School. *Journal of Innovation and Knowledge*, *4*(2). https://doi.org/10.1016/j.jik.2017.12.001

Lemmetty, S., & Collin, K. (2020). Self-Directed Learning as a Practice of Workplace Learning: Interpretative Repertoires of Self-Directed Learning in ICT Work. *Vocations and Learning*, *13*(1). https://doi.org/10.1007/s12186-019-09228-x

Lim, J., & Lee, Y. (2018). Latent Profile Analysis on Vocational Competency of Students in Vocational High Schools and Vocational Program of General High School. *Korean Society for the Study of Vocational Education*, *37*(4). https://doi.org/10.37210/jver.2018.37.4.23

Löfgren, S., Ilomäki, L., & Toom, A. (2020). Employer views on upper-secondary vocational graduate competences. *Journal of Vocational Education & Training*, *72*(3), 435–460. https://doi.org/10.1080/13636820.2019.1635633

Lüftenegger, M., van de Schoot, R., Schober, B., Finsterwald, M., & Spiel, C. (2014). Promotion of students' mastery goal orientations: does TARGET work? *Educational Psychology*, *34*(4). https://doi.org/10.1080/01443410.2013.814189

Luo, W., Foo Seong Ng, D., Nguyen, D., Ng, P. T., & Salleh, H. (2020). Transformational leadership and its relations to teacher outcomes in Singapore: Mastery goals and self-efficacy as mediators. *Leadership and Policy in Schools*. https://doi.org/10.1080/15700763.2020.1811879

Mao, J., Chen, J., Ling, Y., & Huebner, E. S. (2020). Impact of Teachers' Leadership on the Creative Tendencies of Students: The Mediating Role of Goal-orientation. *Creativity Research Journal*, *32*(3). https://doi.org/10.1080/10400419.2020.1821569

Murniati, E. (2016). Computer based test (CBT) sebagai alternatif instrumen evaluasi pembelajaran. *Jurnal Ilmiah Teknologi Informasi*, *15*(3).

Pan, X. (2020). Technology Acceptance, Technological Self-Efficacy, and Attitude Toward Technology-Based Self-Directed Learning: Learning Motivation as a Mediator. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.564294

Phan, H. P., Ngu, B. H., Lin, R. Y., Wang, H. W., Shih, J. H., & Shi, S. Y. (2019). Predicting and enhancing students' positive emotions: An empirical study from a Taiwanese sociocultural context. *Heliyon*, *5*(10). https://doi.org/10.1016/j.heliyon.2019.e02550

Prior, D. D., Mazanov, J., Meacheam, D., Heaslip, G., & Hanson, J. (2016). Attitude, digital literacy and self efficacy: Flow-on effects for online learning behavior. *Internet and Higher Education*. https://doi.org/10.1016/j.iheduc.2016.01.001

Rahmatullah, B., Praherdhiono, H., & Wedi, A. (2021). Analisis Kompetensi Technological Pedagogical and Content Knowledge Pada Guru Sekolah Vokasi Kemaritiman. *Edcomtech: Jurnal Kajian Teknologi Pendidikan*, *6*(2). https://doi.org/10.17977/um039v6i12021p186

Sadeck, O., Chigona, A., & Cronjé, J. (2020). Understanding e-Learning Acceptance Among Teachers: A Grounded-in-Theory Approach. *The Electronic Journal of E-Learning*, *18*(6).

Samsudi, W., & Hosaini, H. (2020). Kebijakan Sekolah dalam Mengaplikasikan Pembelajaran Berbasis Digital di Era Industri 4.0. *Edukais : Jurnal Pemikiran Keislaman*, *4*(2). https://doi.org/10.36835/edukais.2020.4.2.120-125

Shafait, Z., Khan, M. A., Sahibzada, U. F., Dacko-Pikiewicz, Z., & Popp, J. (2021). An assessment of students' emotional intelligence, learning outcomes, and academic efficacy: A correlational study in higher education. *PLoS ONE*, *16*(8 August). https://doi.org/10.1371/journal.pone.0255428

Vol. 9, No. 1 : March 2023
E-ISSN: 2442-7667
pp. 80-91
Email: jklppm@undikma.ac.id

Shafait, Z., Yuming, Z., Meyer, N., & Sroka, W. (2021). Emotional intelligence, knowledge management processes and creative performance: modelling the mediating role of self-directed learning in higher education. *Sustainability (Switzerland)*, *13*(5). https://doi.org/10.3390/su13052933

Shukla, K. D., Kuril, S., & Chand, V. S. (2020). Does negative teacher behavior influence student self-efficacy and mastery goal orientation? *Learning and Motivation*, *71*. https://doi.org/10.1016/j.lmot.2020.101653

Skaalvik, E. M., & Federici, R. A. (2016). Relations between classroom goal structures and students' goal orientations in mathematics classes: When is a mastery goal structure adaptive? *Social Psychology of Education*, *19*(1). https://doi.org/10.1007/s11218-015-9323-9

Srivastava, S., & Dangwal, K. L. (2017). Constructivism: A paradigm to revitalize teacher education. *International Journal of Applied Research*, *3*(5).

Sulistyaningsih, E., & Sugiman, S. (2016). The effect of CBT national examination policy in terms of senior high school students' cognitive readiness and anxiety facing mathematics tests in DIY Province. *Jurnal Riset Pendidikan Matematika*, *3*(2). https://doi.org/10.21831/jrpm.v3i2.10868

Tan, L. S., Koh, E., Lee, S. S., Ponnusamy, L. D., & Tan, K. C. K. (2017). The complexities in fostering critical thinking through school-based curriculum innovation: research evidence from Singapore. *Asia Pacific Journal of Education*, *37*(4). https://doi.org/10.1080/02188791.2017.1389694

Teuber, Z., Tang, X., Salmela-Aro, K., & Wild, E. (2021). Assessing Engagement in Chinese Upper Secondary School Students Using the Chinese Version of the Schoolwork Engagement Inventory: Energy, Dedication, and Absorption (CEDA). *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.638189

Veitch, E., Smith, J., Molyneux, D., & Veitch, B. (2018). Investigating the influence of bridge officer experience on ice management effectiveness using a marine simulator experiment. *Proceedings of the International Conference on Offshore Mechanics and Arctic Engineering - OMAE*. https://doi.org/10.1115/OMAE2018-78080

Yuliana, K., & Suhaimah, S. (2019). Analisis Penerimaan Sistem Computer Based Test (CBT) Dengan Menggunakan Technology Acceptance Model (TAM) (Studi Kasus SMKN 1 Banjarmasin). *Lentera: Jurnal Pendidikan*, *14*(2). https://doi.org/10.33654/jpl.v14i2.904

Zamnah, L. N., & Ruswana, A. M. (2019). Implementation of self-directed learning model to improve students' self-regulated learning and self-confidence. *Journal of Physics: Conference Series*, *1188*(1). https://doi.org/10.1088/1742-6596/1188/1/012081