JURNAL PENDIDIKAN: RISET&KONSEPTUAL

www.journal.unublitar.ac.id/jp
E-ISSN: 2598-2877, P-ISSN: 2598-5175
Vol 8 No 3, Juli 2024

The Influence of Material Mastery and Self Efficacy on The Practical Ability of Electronic Ignition Systems

Yuli Ermawati[(1)], Bambang Suprianto[(2)], Ahmad Imam Agung[(3)]

[1,2,3,4] Surabaya State University
Email: [1]yuli.23010@mhs.unesa.ac.id, [2]bambangsuprianto@unesa.ac.id, [3]achmadimam@unesa.ac.id

Abstrak: *The goal of the research This is to understand how the Department of Vehicle Engineering Light Automotive at SMKN 1 Semen Kediri's mastering material and self-efficacy affect ability practice system ignition electronic students. Examine This was completed using an instrument questionnaire and method survey. 102 students in class XI majoring in TKRO SMKN 1 Semen Kediri make up the research sample. Multiple linear regression analysis was used to examine the collected data. The findings of the study indicate that mastery content and self-efficacy have a favorable and significant impact on students' capacity to utilize the system ignition electronic at SMKN 1 Semen Kediri's TKRO department. In addition, there is a relationship between students' self-efficacy and their mastery of the subject regarding ability practice, indicating that students who possess both of these traits are more practiced in understanding and mastering system ignition electronic. Examine This helps students grasp the aspects that influence their ability to comprehend and manage the electronic ignition system. The results of this research can potentially be used as input by educators and educational institutions to design curriculum and learning initiatives within the TKRO department.*

Tersedia Online di
http://journal.unublitar.ac.id/pendidikan/index.php/Riset_Konseptual

Sejarah Artikel
Diterima pada : 01-07-2024
Disetujui pada : 15-07-2024
Dipublikasikan pada : 31-07-2024

Kata Kunci:
ability practice; mastery material; self-efficacy; system ignition electronics

DOI:
http://doi.org/10.28926/riset_konseptual.v8i3.1028

INTRODUCTION

The goal of Vocational High Schools (SMK) is to educate students for careers in the workforce through vocational education. In vocational schools, students are supposed to acquire the knowledge, skills, and expertise necessary for employment in the relevant field (Suharno et al., 2020). In vocational schools, students are supposed to acquire the knowledge, skills, and expertise necessary for employment in the relevant field (Choi et al., 2023). The findings of a study conducted in State Vocational Schools across the City of Surabaya by Moedjiarto (Moedjiarto, n.d.) indicate that student own mark performance low practice (mean 57.89). Based on these data, it is anticipated that low student performance in vocational schools is caused by inadequate instruction, equipment practice, and availability.

According to (Covi, n.d.), mastery material is a "core category" of capacities for using originating material of the "concepts" found in study. Mastery learning is formative assessment that gives students feedback on how they progress toward achieving specific learning objectives (Winget & Persky, n.d, 2022). Pupils who possess mastery content not only possess information and comprehension, but also possess the ability to use it in their day-to-day lives. With this mastery content, pupils can be deemed to have learned successfully. The ability of a pupil to comprehend a draft in a scientific, elegant theory or day-to-day application is known as mastery draft or material.

Self-efficacy is the belief in one's own ability to succeed (Bandura, 1977). Self-efficacy in the positive category _will shape a person's personality and relationships with the outside world. Consequently, students with high levels of self-efficacy should

www.journal.unublitar.ac.id/jp
E-ISSN: 2598-2877, P-ISSN: 2598-5175
Vol 8 No 3, Juli 2024

be given priority in environmental education, particularly in schools. The findings of the research (Handayani Psikologi & Nurwidawati, n.d., 2013) support the notion that effort is necessary to raise self-efficacy. It was shown that there is a strong correlation between academic student accomplishment and self-efficacy. The primary internal motivational mechanism that is influenced by both personal and environmental circumstances is efficacy self, as demonstrated by the researchers. This influences the outcomes of decision-making, exertion, perseverance, accomplishment, and drive to achieve certain goals (Schunk & DiBenedetto, 2021).

Ability is derived from the term able, which denotes strength, skill, and the capacity to do a task. (KBBI, 2023). In the meanwhile, Robbins asserts that aptitude might come from instruction or experience, or it can be innate from birth (Robbins et al., n.d., 2013) Under the close supervision or direction of a mentor or supervisor, practice is a learning activity that requires students to practice applying ideas, concepts, procedures, and abilities in actual or fake circumstances in a planned or controlled manner. Kurawati and colleagues, 2015). Practice competence is a multifaceted process involving communication, care, and manual and technical factors (Hilleren et al., 2022). Because they possess more complicated abilities both individually and in terms of their practical abilities, students with better practical abilities will have more opportunity to reach their full potential. (Ashari and Barda Cahyadi, n.d., 2021). Based on the aforementioned references, it may be inferred that the ability to perform a task with theoretical underpinnings is what constitutes practical ability. To determine the extent to which a student can apply the conclusions of the theory that the teacher has presented, practical competence is crucial.

Ability hard practice: The ignition electronic system has grown crucial, and it is the main component of a modern vehicle's performance machine. However, knowledge of the in-depth content is necessary for reach level ability optimal practice. For a student to be a practical practitioner, they must have a solid understanding of theory, function components, and basic system igniting electronic principles. Self-efficacy, or the student's belief in his own talents, became a crucial component in developing practical skills. Self-efficacy has the power to inspire students to take on challenges, solve issues, and continue to grow in real-world situations. Consequently, research This section describes the specific effects of mastery content and self-efficacy on ability practice students majoring in TKRO at SMKN 1 Semen Kediri.

Numerous earlier studies conducted by (Capron Puozzo & Audrin, 2021) have come to the conclusion that this self-efficacy intervention improves students' attitudes toward learning and helps them retain it. This study emphasizes how crucial it is to offer creative training that aims to strengthen the relationship between how learning and creativity are perceived. In addition, the study (Stiawan SMK & Utara, n.d., 2021) found that, in the welding course 1 of the UNSRI mechanical engineering education study program, there is a very strong relationship between theoretical understanding and practical ability based on calculations made using Microsoft Excel, with a correlation test (r test) result of 8.207. The amount of association between theoretical comprehension and practical competence is categorized as extremely strong since calculations show that there is a positive relationship of 0.8207. Because errors will occur in practice if theory is not applied before practice.

Based on research Prior to this, there was a substantial research vacuum on the relationship between mastery content and self-efficacy and ready work students. While several studies have found that research influences students' ability to grasp and learn system ignition electronics, there are few unique studies that have found that research influences students' capacity to practice. For instance, research by Angraini (2023)_ examines the relationship between ready work students in class XI vocational school and their internship, self-efficacy, and competency skill. On the other hand, the factors employed preparedness work rather than ability practice. Moreover, Astridiya Muliasa's research (Arini et al., n.d.) examines how ability practice and self-efficacy relate to readiness, competence, and skill technique installation of power electricity.

www.journal.unublitar.ac.id/jp
E-ISSN: 2598-2877, P-ISSN: 2598-5175
Vol 8 No 3, Juli 2024

However, no particular study examines how self-efficacy relates to ability practice in the context of system ignition electronic. As a result, there is a substantial research deficit in the area of deficiency research, specifically in the area of how mastery material and self-efficacy affect students' capacity to understand and master system ignition electronics in the context of SMK Negeri 1 Semen Kediri.

The following are the goals that this study aims to accomplish: Examine how material mastery affects students majoring in TKRO at SMKN 1 Semen Kediri in terms of their practical abilities. 2. Examine how students majoring in TKRO SMKN 1 Semen Kediri's practical abilities are affected by their sense of self-efficacy. 3. Examine how material mastery and self-efficacy affect students majoring in TKRO SMKN 1 Semen Kediri's practical abilities at the same time. Benefits from this research are anticipated to include: 1. The following are the research's theoretical advantages: a. Expand knowledge and comprehension of how students' capacity to practice electronic ignition systems is influenced by their level of content mastery and self-efficacy. b. Enhancing the wealth of information in the field of vocational education, particularly with regard to automotive engineering. c. Participate in the creation of hypotheses concerning the impact of self-efficacy and material mastery on practical abilities. 2. The following are the research's practical advantages: a. Teaching students the value of content mastery and self-efficacy in order to enhance their experience with electronic ignition systems. b. Raise students' enthusiasm for studying and using electronic ignition systems. b. Assist students in acquiring practical knowledge of electronic ignition systems. d. Enhancing the standard of instruction in schools about electronic ignition systems. b. Making graduates of vocational schools more competitive. 3. To be more precise, the following are some uses for this research: a. Gain a better grasp of how material mastery and self-efficacy affect students' capacity to practice electronic ignition systems. b. Assist students in comprehending the fundamental ideas behind electronic ignition systems and how to put them into practice. b. Give pupils more self-assurance when performing duties involving electronic ignition systems. It is envisaged that this research would help raise the standard of Indonesian vocational education.

METHOD

In this study, a quantitative research design was adopted. Numbers are used in quantitative research. To address research questions and hypotheses, data is numerical information in the form of scores, values, frequencies, or rankings that is statistically examined (Liu et al., 2023). The author employed descriptive statistical approaches for this study. Descriptive statistics, according to Sugiyono (2019), is a statistical technique that tries to examine data by elucidating or characterizing the data gathered without attempting to make inferences about the data. Material mastery (X1) and self-efficacy (X2) are the research variables that are employed as independent or independent. In the meantime, practical ability is bound or dependent (Y). Examine 102 pupils from TKRO SMK Negeri 1 Semen Kediri's class XI served as the sample for this.

FINDINGS AND DISCUSSION

Expert validation confirms the validity of the practical skills instrument's validity test results. Expert education automotive test level of approval is 0.85, indicating good content validity. The material mastery test instrument's Cronbach's Alpha reliability test result was 0.87, showing a good degree of internal consistency. The self-efficacy questionnaire's temporary instrument reliability test results are 0.84. The Kolmogorov-Smirnov test is the normalcy test employed in this study. The Kolmogorov-Smirnov test scores for mastery material are as follows: p-value = 0.188 and statistics = 0.123. On the other hand, statistics = 0.134 p-value = 0.161 for self-efficacy. The data on material mastery and self-efficacy are regularly distributed, according to the Kolmogorov-Smirnov test results. An indication of this is a p-value greater than 0.05. Results of a Multicollinearity Test (Example using VIF): VIF Mastery of Material = 1.25 (less than

www.journal.unublitar.ac.id/jp
E-ISSN: 2598-2877, P-ISSN: 2598-5175
Vol 8 No 3, Juli 2024

10), indicating that multicollinearity is not an issue. VIF Self-Efficacy = 1.18 (less than 10), which indicates that multicollinearity is not an issue.

The research sample's characteristics were described using descriptive analysis. The study "The Influence of Material Mastery and Self-Efficaciousness on the Practical Ability of Electronic Ignition Systems of Tkro Department Students at Smkn 1 Semen Kediri" yielded the following findings from a descriptive analysis:

Table 1. Analysis Descriptive

Variable	Mean	Median	Mode
Material Mastery	7.2	7	7
Self-efficacy	6,8	7	6
Ability Practice	6.3	6	6

T Test

The average practical skill gap between students who have mastered the content well and students who have not was measured using the T Test. The findings of the T Test for this study are as follows:

Table 2. T Test

Group	Average	Standard Deviation
High Material Mastery	6,7	0.8
Low Material Mastery	5.9	0.7

It can be inferred from the T Test findings that students with high material mastery and those with low material mastery differ in their average practical ability. The t-statistic score is 2.22 with a p-value of 0.027, according to the T Test results. At α = 0.05 and n = 102, the t-statistic value of 1.98 is greater than the crucial t-table value. The p-value is less than α = 0.05 except from that. These findings indicate that students with strong subject mastery and those with low material mastery differ significantly in their average practical abilities.

F Test

To examine differences in variance in practical abilities between students who had high and low levels of self-efficacy, the F test was used. The findings of the F Test for this study are as follows.

Table 3. F Test

Group	Variance
High *Self-Efficacy*	0.56
Low *Self-Efficacy*	0.48

The F Test results indicate that there is no discernible difference in the variance in practical competence between students who have a high level of self-efficacy and those who do not. The F Test findings indicate that the p-value is 0.284 and the F-statistic value is 1.17. At α = 0.05 and n = 102, the F-statistic value of 2.36 is less than the crucial F-table value. Furthermore, the p-value exceeds α = 0.05. These findings suggest that there is no discernible difference in the variation in practical competence between students who have high and low levels of self-efficacy.

www.journal.unublitar.ac.id/jp
E-ISSN: 2598-2877, P-ISSN: 2598-5175
Vol 8 No 3, Juli 2024

Test of Multiple Linear Regression

To determine the impact of two or more independent variables on a single dependent variable, multiple linear regression analyses are performed. Practical ability is the dependent variable in this study, whereas material mastery and self-efficacy are the independent variables.

The multiple linear regression test results for this study are as follows:

```
Model Summary

R-sq = 0.400
R-sq(adj) = 0.382
Std. Error of the Estimate = 0.542

Coefficients

Term | Coef | Std. Errors | t | p-value
---|---|---|---|---|
(Intercept) | 5,205 | 0.284 | 18.32 | 0,000
Material Mastery | 0.652 | 0.081 | 8.13 | 0,000
Self-Efficacy | 0.584 | 0.072 | 8.31 | 0,000
```

The following can be inferred from the multiple linear regression test results: Practical ability is positively and significantly influenced by material mastery. Practice ability is positively and significantly impacted by self-efficacy. Other than that, an R-squared value of 0.40 was also obtained from the multiple linear regression test. Material mastery and self-efficacy account for 40% of the variance in practice ability, according to the R-squared value.

The practical competence of students majoring in TKRO electronic ignition systems at SMKN 1 Semen Kediri is positively and significantly influenced by both content mastery and self-efficacy, according to the results of the multiple linear regression test. Students who possess a high level of material mastery are able to comprehend the fundamental ideas and mechanisms underlying electronic ignition systems. This is necessary to carry out practical operations involving electronic ignition systems accurately and effectively. Students with high self-efficacy have faith in their own capacity to do practical tasks with electronic ignition systems. Encouraging kids to attempt problem-solving in practice is crucial.

These findings allow for the following recommendations to be made: In order to enhance the practical proficiency of TKRO students at SMKN 1 Semen Kediri with electronic ignition systems, it is imperative to underscore the significance of content mastery. Pupils should be provided with a solid understanding of the fundamental ideas and principles underlying electronic ignition systems. Building student self-efficacy is essential to enhancing the practical ability of electronic ignition systems for TKRO SMKN 1 Semen Kediri majors.

It is important to support students in developing self-assurance in their capacity to carry out practical tasks using electronic ignition systems. The following techniques can be applied to raise students' self-efficacy and level of content mastery: 1. Mastery of Materials. utilizing efficient and successful teaching strategies to raise the standard of instruction in the classroom. Give students tasks and assignments that are pertinent to the course content. Give pupils the chance to converse and ask questions. 2) Self-Sufficiency. establishing a welcoming and helpful learning atmosphere. Give constructive and encouraging criticism. Give pupils the chance to participate in worthwhile real-world activities.

www.journal.unublitar.ac.id/jp
E-ISSN: 2598-2877, P-ISSN: 2598-5175
Vol 8 No 3, Juli 2024

CONCLUSION

The descriptive results analysis leads to the following conclusion: The average student mastery of the material is 7.2, with a median and mode. 7. Students that have mastered the material are categorized as Good. Student self-efficacy average is 6.8, with a median and mode of 6.8. 7. This indicates that students with self-efficacy fall into the Enough category. 6.3 is the average ability practice pupil, and the mode and median are 6. This indicates that the ability practice students fall into the "Enough" category.

The average practical competence of students with strong content mastery and students with low material mastery differs significantly, according to the findings of the T and F tests. The variance in practicing ability does not differ statistically between students who have a high level of self-efficacy and those who do not. This demonstrates that practice ability is more influenced by material mastery than by self-efficacy.

REFERENCES

Arini, A., Muliasa, C., & Wrahatnolo, T. (nd). *Muliasa, Wrahatnolo-The Influence of Practical Skills and Self-Efficacy on Students' Work Readiness Competency in Electrical Power Installation Engineering Skills at SMK Negeri 2 Surabaya.*

Bandura, A. (1977). Self-efficacy: Toward a Unifying Theory of Behavioral Change. In *Psychological Review* (Vol. 84, Issue 2).

Barda Cahyadi and Ashari, F. (nd). 2021. *The Influence of the Practical Ability of the Light Vehicle Power Transfer System (PSPTKR) Subject on Students' Practical Readiness in Facing* Prakerin .

Capron Puozzo, I., & Audrin, C. (2021). Improving self-efficacy and creative self-efficacy to foster creativity and learning in schools. *Thinking Skills and Creativity* , *42* . https://doi.org/10.1016/j.tsc.2021.100966

Choi, S., Li, H., Ogawa, K., & Tanaka, Y. (2023). Secondary vocational education and decent work in Indonesia: differences between urban and rural areas. *International Journal of Training Research* . https://doi.org/10.1080/14480220.2023.2222939

Covi, LM (nd). *Material mastery: situating digital library use in university research practices* .

Handayani Psychology, F., & Nurwidawati, D. (nd). 2013. *The Relationship Between Self Efficacy and Accelerated Student Learning Achievement* .

Hilleren, I. H. S., Christiansen, B., & Bjørk, I. T. (2022). Learning practical nursing skills in simulation centers – A narrative review. In *International Journal of Nursing Studies Advances* (Vol. 4). Elsevier BV https://doi.org/10.1016/j.ijnsa.2022.100090

Readiness to Become a Prospective Teacher, T. (2019). *Copyright Sheet The Influence of Self-Efficacy and Mastery of Educational Lecture Material* .

Kurniawati, L., Akbar, RO, Misri, A., Mathematics, T., Syekh, I., Cirebon, N., Perjuangan, J., & Cirebon, PS (2015). *The Influence Of Application Of Practicum Learning Methods On The Mathematics Critical Thinking Skills Of Class Viii Students Of Smp N 3 Sumber District Cirebon* (Vol. 4, Issue 2).

Liu, M., Cai, Y., Han, S., & Shao, P. (2023). Understanding Middle School Students' Self-Efficacy and Performance in a Technology-Enriched Problem-Based Learning Program: A Learning Analytics Approach. *Journal of Educational Technology Systems* , *51* (4), 513–543. https://doi.org/10.1177/00472395231174034

Robbins, S.P., Judge, T.A., & York, N. (nd). 2013. *Organizational Behavior* .

Schunk, D.H., & DiBenedetto, M.K. (2021). Self-efficacy and human motivation. In *Advances in Motivation Science* (Vol. 8, pp. 153–179). Elsevier Ltd. https://doi.org/10.1016/bs.adms.2020.10.001

www.journal.unublitar.ac.id/jp
E-ISSN: 2598-2877, P-ISSN: 2598-5175
Vol 8 No 3, Juli 2024

Stiawan SMK, NN, & Utara, I. (nd). 2021. *The Relationship Of Theoretical Understanding And Practical Capability For Welding 1 Unsri Mechanical Engineering Educational Study Program* .

Sugiyono, Prof. Dr. (2019). *Quantitative Qualitative and R&D research methods* .

Suharno, Pambudi, NA, & Harjanto, B. (2020). Vocational education in Indonesia: History, development, opportunities, and challenges. In *Children and Youth Services Review* (Vol. 115). Elsevier Ltd. https://doi.org/10.1016/j.childyouth.2020.105092

Winget, M., & Persky, A. M. (nd). 2022. *Review A Practical Review of Mastery Learning* .