

International Journal of Multidisciplinary Studies in Higher Education

Journal Homepage: https://ijmshe.com/index.php/pub/index

Research Article

Assessing Resources For Automotive Servicing Qualification At Nemsu: A Needs-Based Analysis And Proposed Intervention

Joseph M. Josoy¹

¹North Eastern Mindanao State University

Article Info

Article history:

Received: 23 January 2025 Revised: 09 April 2025 Accepted: 05 May 2025

Keywords:

Automotive Servicing, Technical-Vocational Education, Laboratory Resources, Resource Assessment, Training Facilities, Automotive Technology.

Abstract

This study investigates the current state of laboratory facilities essential for Automotive Servicing qualification, focusing on the perspectives of students and instructors at North Eastern Mindanao State University. Utilizing a self-made questionnaire, data were gathered from 80 student participants and 6 instructors to assess the accessibility and usability of tools, equipment, and materials. The results indicate that the institution possesses most of the necessary resources for the qualification; however, specific gaps remain that require addressing. Participants rated the majority of tools and equipment as highly useful, with materials consistently being acknowledged as very useful. Based on these findings, the study suggests obtaining the lacking resources, implementing proper maintenance protocols, and periodically evaluating the state of existing resources. The study proposes that continuous assessment and improvement initiatives are necessary for optimizing the learning experience.

Cite as: Josoy, J. (2025). Assessing Resources for Automotive Servicing Qualification at NEMSU: A Needs-Based Analysis and Proposed Intervention. International Journal of Multidisciplinary Studies in Higher Education, 2(2). https://doi.org/10.70847/611102

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

Introduction

Effective instruction within а technical-vocational context relies heavily on the interaction between educators and learners within a practical learning setting. In the context of automotive servicing, a skilled instructor cannot successfully deliver training without the suitable, functional presence of tools. equipment, and machinery. Furthermore, the educational environment needs to be conducive to active learning. Effective vocational and technical education relies on the availability and utilization of functional instructional resources for skill development; however, inadequate resources and underutilization can hinder program effectiveness and student readiness for entrepreneurial careers (Edokpolor, 2019: Ehimen & Onvia, 2017; Owoh, 2016; Peter et al., 2024). The quality of these resources directly impacts learners' skill growth, highlighting the importance of sufficient provisions and efficient use in vocational training programs (Jin et al., 2024; Edokpolor, 2019; Edokpolor & Dumbiri, 2019).

Effective technical training is a key contributor to the development of any nation as it produces a workforce that is productive and able to compete in the industry. Technical and vocational education faces challenges due to shortages of essential equipment and facilities, along with the poor functionality of outdated and inadequately maintained resources which affects student learning (Olojuolawe & Adeoluwa, 2022; Okenwa, 2017; Oviawe et al., 2019; Van Nguyen et al., 2023). Collaboration with industry and robust maintenance practices is essential to securing funding, maintaining resources, and enhancing the overall training experience for students, which is crucial for student employability and national development (Audu et al., 2013; Edokpolor, 2019; Okenwa, 2017).

Students in automotive laboratories often experience significant issues with material and tool availability, mainly due to the disparities in

laboratory facilities and inefficient resource management systems that restrict student's practical learning (Asniwaty et al., 2020; Jordan et al., 2011; Zarifin et al., 2020). The availability of quality materials, and proper management systems are important for students to gain practical skills and innovative problem-solving ability (Zarifin et al., 2020; Jordan et al., 2011). This may be because much of the main equipment is imported, leading to issues of supply and high cost. While existing literature highlights the importance of resources in technical and vocational education, there is a gap in understanding the specific state of these NEMSU-Cantilan Campus, resources at particularly in its Automotive Servicing program, therefore prompting this research. This study is meant to aid the facilitators and administrations to supply enough laboratory automotive technology to resources for maximize the learning potential of the students enrolled in Automotive Technology Program.

This study is mainly based on the constructivist theory by Piaget (1896), which says that educators act as a facilitator, supporting student-centered learning approaches. In this view, students learn more effectively when they actively participate in the learning process individually. Therefore, suitable training resources such as tools and equipment become essential for the effective practice of constructivist methods. Technical and vocational education resources include physical facilities, equipment, and instructional materials; the lack of which has a profound impact in vocational training programs and can affect students' abilities to participate in learning (Akinfolarin et al., 2012; Edokpolor, 2019). The adequacy, availability and alignment of these resources with the curriculum are crucial to ensure the effectiveness of teaching and learning to properly prepare students for a career and improve quality of vocational education (Samoilenko et al., 2021; Wu & Ye, 2018).

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

This study aims to evaluate the accessibility and operational status of tools and equipment within the Automotive Laboratory of a North Eastern Mindanao State University during the academic year 2023-2024.

Specifically, this study seeks to address the following:

- 1. What are the profiles of the end-user participants regarding:
 - 1.1 Age,
 - 1.2 Location, and
 - 1.3 Grade in Shop
- 2. What resources are accessible for instruction in the Automotive Servicing program?

Materials and Methods

This study employs a descriptive research design, which is suitable for quantifying the availability and functionality of tools and equipment in the automotive laboratory. This design is ideal for addressing the research questions of this study and for the realization of the study's purpose. This approach aims to provide an overview of current conditions, without any manipulation of variables, but rather documenting the existing state of resources in the lab.

The study will take place at North Eastern Mindanao State University in the Philippines, which offers the Automotive Servicing qualification. This institution was selected for its alignment with the goals of the research. The institution is expected to provide a relevant context and ample information for the study due to the presence of an established Automotive Servicing program. The researchers chose this setting because of the institution's capacity to support the study and to give substantial insights for the research.

The respondents for this study will consist of 80 students in their second year of the Automotive program, and 6 instructors in the same institution. The selection of second-year

- 3. What is the degree of functionality of these resources (tools, equipment, and machines) that are being used in the Automotive Servicing program?
- 4. What intervention measures can be suggested in light of these results?

This study is limited to an evaluation of the availability and operational status of training resources, including tools, equipment, and materials, specifically within the Automotive Technology Laboratory of a North Eastern Mindanao State University. The study focuses solely on the Automotive Servicing qualification. The results may not be applicable to other programs or institutions due to the variability of available resources.

students is based on their direct involvement with the automotive servicing qualification. The instructors will also be included because they are essential in using the training facilities, and their experiences will give a better understanding of the facilities from a teaching perspective. This purposive selection method will ensure data is collected from participants who possess a deep awareness of the resources used in the program, and thus providing a holistic insight into the state of these facilities.

This research utilizes a questionnaire based on the guidelines provided in the TESDA regulations regarding standard tools and equipment for the automotive servicing qualification. The questionnaire was designed to objectively assess the tools and equipment in the laboratory based on the objective of the study. Prior to its use, the questionnaire underwent a validation process to ensure its content validity and clarity. This included review by subject matter experts in automotive technology and technical-vocational education. The reliability of the questionnaire was assessed using Cronbach's alpha, which yielded a value of 0.82, indicating acceptable internal consistency. The questionnaires will be the

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

main tool of investigation that will provide an unbiased assessment of the resources available.

The researchers will first seek permission from the Campus Director of the institution. Upon approval, further permission will be obtained from the Department Chair of the Bachelor of Science in Industrial Technology (BSIT) program and the head of the training facility. The questionnaires will then be distributed to the identified participants. After collection of the completed questionnaires, data will be compiled, analyzed, and interpreted with the aid of the research adviser and a statistician to ensure precision.

The data collected will be analyzed using frequency counts, which will determine the number and percentage of responses to each question, specifically about the availability of the tools, equipment, and material. These frequency counts will help in determining the extent of availability and the level of functionality of the tools and equipment within the laboratory and align it to the statements of the problem.

Results

Drafila	Té a un a	En	Danaantaaa
Profile	Items	Frequency	Percentage
	16-17 years old	8	10%
AGE	18-19 years old	52	65%
	20-21 years old	18	23%
	22 years and above	2	2%
	Total	80	100%
	Magasang	5	6.25%
	Pag-antayan	28	35%
LOCATION	Linintian	19	23.75%
	Magosilom	20	25%
	Calagdaan	7	8.75%
	San Pedro	1	1.25%
	Total	80	100%
	1.0 - 1.5	50	62.5%
GRADE IN SHOP	1.6 - 2.0	26	32.5%
	2.1 - 2.5	4	5%
	2.6 - 3.0	0	0%
	Total	80	100%

Table 1. Profile of the Student Respondents

Table 2. Available Tools and Equipment for teaching Automotive Servicing Laboratory at NEMSU

Description	Required Quantity (TESDA)	Available Quantity	Remarks
TOOLS			
Micrometer Caliper	2 set	2 set	complete
Box Wrench	2 set	2 set	complete
Socket Wrench	2 pcs	3 sets	complete
Pliers	2 pcs	5 sets	complete
Screw Driver	2 set	6 sets	complete

¹Corresponding Author: Joseph M. Josoy

*Corresponding Email: jjosoy@nemsu.edu.ph

IJMSHE Volume 2 Issue 2 | E-ISSN: 3082-3021 | DOI: https://doi.org/10.70847/611102

Wire Stripper	2 pcs	3 pcs	complete
Mechanic's Hammer	2 pcs	1 pc	Lack 1
Apron	5 pcs	4 pcs	Lack 1
Goggle	5 pcs	4 pcs	Lack 1
Glove	5 pcs	5 pcs	complete
Torque Wrench	1 set	1 set	complete
Feeler Gauge	1 set	1 set	complete
Battery Tester	1 set	2 sets	complete
Hydrometer	1 set	1 set	complete
Dial Gauge	1 set	2 sets	complete
Bore Gauge	1 set	3 sets	complete
EQUIPMENT			
Motor Vehicle	1 unit	1 unit	complete
Engine	1 unit	3 units	complete
Hydraulic Jack/lift	1 set	1 unit	complete
Growler Tester	1 unit		Lack 1
Ignition Timing Light	1 set	1 set	complete
Tachometer	1 set	1 set	complete
Differential and Front Axle	1 set		Lack 1
Multimeter	2 pcs	4 pcs	complete
MATERIALS			
Engine Oil	1 gallon	1.8 liters	Lack 2.2 liters
Grease	1 liter	300 ml	Lack 700ml
Sealant/Adhesive	3 liters	0.8 liters	Lack 2.2 liters
Hydraulic oil	3 liters	650 ml	Lack 2.35 liters
Automatic Transmission	3 liters	1.7 liters	Lack 1.3 liters
Wheel Wedges	2 pcs	2 pcs	Complete
Test Lamp	2 pcs	4 pcs	complete

Table 3. Extent of Usefulness of the Tools and Equipment for teaching Automotive Servicing Laboratory at NEMSU

Description	Weighted Mean	Verbal Description
TOOLS		_
Micrometer Caliper	4.5	Very Useful
Box Wrench	4.4	Very Useful
Socket Wrench	4.6	Very Useful
Pliers	4.7	Very Useful
Screw Driver	4.6	Very Useful
Wire Stripper	4.1	Very Useful
Mechanic's Hammer	3.7	Useful
Apron	2.9	Useful
Goggle	3.1	Useful
Glove	3.3	Useful
Torque Wrench	3.4	Useful
Feeler Gauge	3.5	Useful
Battery Tester	4.1	Very Useful
Hydrometer	4.2	Very Useful

¹Corresponding Author: Joseph M. Josoy

*Corresponding Email: jjosoy@nemsu.edu.ph

Dial Gauge	4.0	Very Useful
Bore Gauge	4.0	Very Useful
EQUIPMENT		
Motor Vehicle	4.5	Very Useful
Engine	4.7	Very Useful
Hydraulic Jack/lift	3.8	Useful
Growler Tester	3.5	Useful
Ignition Timing Light	3.9	Very Useful
Tachometer	3.8	Useful
Differential and Front Axle	4.0	Very Useful
Multimeter	4.0	Very Useful
MATERIALS		
Engine Oil	4.8	Very Useful
Grease	4.7	Very Useful
Sealant/Adhesive	4.7	Very Useful
Hydraulic Oil	4.7	Very Useful
Automatic Transmission	4.8	Very Useful
Wheel Wedges	4.6	Very Useful
Test Lamp	4.2	Very Useful

Legend: 3.9 – 5.0 = Very Useful; 2.7 – 3.8 = Useful; 1.0 – 2.6 = Not Useful

Discussion

The data in Table 1 shows that the majority of the student respondents (65%) are between 18 and 19 years old, followed by 23% between 20 and 21. This indicates a student body primarily composed of young adults at NEMSU. The location data reveals that most students come from Pag-Antayan (35%), followed bv Magosilom and Linintian (25%, and 23.75%) respectively), which may indicate the geographic accessibility of NEMSU in the area. The students' shop grades show a considerable number of respondents with grades ranging from 1.0 to 1.5 (62.5%) which indicates high performance in the practical component of the Automotive Servicing program, with a lesser number having grades of 1.6 to 2.0 (32.5%). This distribution underscores a strong emphasis on practical competence and may be attributable to the learning environment at NEMSU and the effectiveness of the implemented program, which emphasizes the importance of resources in technical and vocational education (Owoh, 2016). Additionally, the alignment of practical training with relevant equipment can enhance student performance, which directly impacts their ability to develop skills necessary for the industry (Jin et al., 2024).

Table 2 indicates that NEMSU has most of the required tools and equipment for the Automotive Servicing program, as indicated by their compliance with TESDA standards. Some resources, such as the Mechanic's Hammer, Apron, Goggle, Growler Tester, Differential and Front Axle are not fully available which highlights existing resource gaps. The lack of consumable materials such as engine oil, grease, sealant. hydraulic oil, and automatic negatively impact transmission can the instructional capabilities. This confirms the views of Crotty (2005), stating that the absence of necessary resources negatively impacts educational performance, and it is supported by findings of Oviawe et al. (2019), noting that resource availability is crucial for vocational training programs. Furthermore, similar issues, such as outdated or broken equipment due to poor maintenance, also hamper the provision of effective instruction (Okenwa, 2017).

As indicated in Table 3, most tools, equipment, and materials used for instruction at NEMSU are rated "Very Useful" by the respondents. Notably, items like Micrometer Caliper, Box Wrench,

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

Socket Wrench, Pliers, and Screw Driver are deemed highly beneficial. The data indicates that tools like the Mechanic's Hammer, Apron, Goggles, Glove, Torque Wrench and Feeler Gauge, as well as the Growler tester and Tachometer are only rated as "Useful". This underscores that the tools and equipment are generally perceived as effective in enhancing the teaching and learning process. The positive ratings of materials support the idea that these resources are highly appropriate for the program as suggested by Martin, Fritzsche, & Ball (2006) that adequate resources result in effective learning. However, the lower scores for some items highlight areas that may need further evaluation and improvement, thus highlighting that specific resources are needed for effective teaching (Ehimen & Onyia, 2017). Furthermore, the quality of the resources and their effective management is needed for students' learning (Zarifin et al., 2020).

Proposed Intervention Program

Title: Improving Automotive Servicing Program at NEMSU Through Enhanced Resource Management and Updated Curriculum

Background:

The study reveals that, despite most tools and equipment being available and rated as useful, some significant gaps still exist, including the lack of specific equipment and materials, at NEMSU. This proposed program aims to address these gaps and improve the quality of the Automotive Servicing program by implementing the following objectives, thereby confirming the need to act based on the data, as mentioned in the research of Darling-Hammond (2000; 2007).

Objectives:

- 1. To guarantee that the program has all of the necessary tools, equipment, and materials required for effective student learning by complying to TESDA standards.
- 2. To improve instruction by ensuring that faculty has adequate access to the necessary resources.
- 3. To ensure that the Automotive Servicing curriculum aligns with industry standards and available resources to improve the quality of education.

Methods:

- 1. Conduct a thorough inventory of existing tools, equipment, and materials used in the Automotive Servicing program at NEMSU.
- 2. Procure all identified missing tools, equipment, and materials necessary for the program.
- 3. Repair or upgrade existing tools and equipment to ensure they are fully functional and up-to-date.
- 4. Provide training for instructors to efficiently use all tools and equipment, including newly procured or upgraded ones.
- 5. Review and update the Automotive Servicing curriculum, aligning it with industry standards and available resources.

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

Expected Outcomes:

- 1. Students will gain access to complete and up-to-date learning resources which will enhance their learning experience.
- 2. Instructors will have the means to deliver high-quality, comprehensive training.
- 3. NEMSU will produce highly competent graduates who are well-prepared for a career in the automotive industry and will be competitive in the workforce.

Budget:

The budget for this program will be determined based on the costing of the materials needed to bridge the gaps in resources. A detailed inventory will be conducted to ensure that a

Conclusions

Based on the findings, it is concluded that while NEMSU possesses a largely adequate set of resources for the Automotive Servicing qualification, significant gaps remain, including specific tools, equipment, and consumable materials. The study revealed a positive perception of the available resources, particularly materials, alongside high student performance in practical assessments, yet highlighted the need for improvement in specific tools and equipment. Addressing these resource

Acknowledgments:

I would like to express my heartfelt gratitude to all those who contributed to the completion of this research paper. First and foremost, I extend my deepest appreciation to my family, wife, Luz D. Josoy and my kids, for their invaluable guidance and support throughout the research process. Their insights and encouragement were precise cost will be available. Furthermore, the budget will also include training for educators to utilize the resources to their maximum potential.

gaps and ensuring effective teaching is essential to enhancing the learning experience and maximizing student career readiness. The proposed intervention program, therefore, seeks to improve resource management and update the curriculum to fill these gaps by securing needed resources, upgrading equipment, training instructors, and ultimately enhancing student preparation for a career in the automotive industry, thereby ensuring adherence to TESDA guidelines for technical-vocational programs.

instrumental in shaping the direction of this study. Additionally, I am grateful to the participants who took part in this study, without whom this research would not have been possible. Your willingness to share your experiences enriched this finding.

Conflicts of Interest: The authors declare no conflict of interest.

Disclosure Statement: The authors utilized the Scispace AI-powered search engine for research and synthesis, Grammarly and QuillBot for language editing and paraphrasing purposes during the preparation of this manuscript. All content was reviewed and validated by the authors, who take full responsibility for the accuracy, originality, and integrity of the work.

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

References

- Aggrey, D., Jnr., E., & Aggrey, R. (2022). The Utilisation of Educational Resources on Academic Achievement: A Case of Boa Amponsem Senior High School and Dunkwa Senior High Technical School. Asian Journal of Education and Social Studies. https://doi.org/10.9734/ajess/2022/v26i2 30623
- Akinfolarin, C., Ajayi, I., & Oloruntegbe, K. (2012). An Appraisal of Resource Utilization in Vocational and Technical Education in Selected Colleges of Education in Southwest Nigeria. Education 3-13, 40(2), 41–45. https://doi.org/10.5923/J.EDU.20120201 .08
- Alshaboul, Y. (2018). Jordanian Pre-service EFL Teachers' Perspectives about Phonological Awareness: Contributions to reading development. American Journal of Education, 5(2), 173-188. https://doi.org/10.30958/AJE.5-2-5
- Asniwaty, A., Sumarto, S., Abdullah, A., & Setiawan, A. (2020). Gaps in automotive laboratory facilities in vocational high schools with vocational technology education colleges. IOP Conference Series: Materials Science and Engineering, 830(4), 042068. https://doi.org/10.1088/1757-899X/830/ 4/042068
- Audu, R., Umar, I., & Idris, A. (2013). Facilities Provision and Maintenance : Necessity for Effective Teaching and Learning in Technical Vocational Education. International Journal of Vocational and Technical Education, 5(3), 28-32. https://doi.org/10.9790/7388-0312832
- Cano, J., Ranis, D., Guiltiano, J., Hilarion, A., Tomabini, J., Licayan, S., & Muring, B.

(2024). Perceived Effects of Tools and Equipment Concerning Office Skills Development of BSOA Students. International Multidisciplinary Research Journal. https://doi.org/10.54476/ioer-imrj/58277 0

- Crotty, R. (2005). Resources for medical education and medical workforce planning. Australian Health Review, 29(2), 152-155. https://doi.org/10.1071/AH050152
- Díaz, I., Salinas, C., & Medina, L. (2023). Shaping Better Futures: Inside-Out Colombian English Language Teachers' Gaps and Practices. Profile: Issues in Teachers' Professional Development. https://doi.org/10.15446/profile.v25n2.9 5969
- Du Plessis, P., & Mestry, R. (2019). Teachers for rural schools – a challenge for South Africa. South African Journal of Education. https://doi.org/10.15700/saje.v39ns1a17 74
- Edokpolor, J. (2019). Resource adequacy and utilization and teaching and learning effectiveness in Vocational Education Programmes in Nigerian universities. Contemporary Educational Researches Journal, 9(2), 78-89. https://doi.org/10.18844/CERJ.V9I2.406 2
- Edokpolor, J., & Dumbiri, D. (2019). RESOURCE ADEQUACY AND UTILIZATION FOR TEACHING AND LEARNING EFFECTIVENESS IN VOCATIONAL EDUCATION PROGRAMMES IN SOUTH-SOUTH NIGERIAN UNIVERSITIES. Journal

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

of Vocational Education Studies, 2(1), 29-37. https://doi.org/10.12928/joves.v2i1.727

- Ehimen, T., & Onyia, A. (2017). Availability and Utilization of Teaching Resources for Effective Technical Vocational Education and Training For Youth Empowerment in Edo State. International Journal of Vocational and Technical Education, 6(1), 1-11.
- С., Embodo, & Alonzo, P. (2024).SUFFICIENCY OF INSTRUCTIONAL RESOURCES AND PERFORMANCE OUTCOMES OF TECHNOLOGY AND LIVELIHOOD **EDUCATION** EPRA STUDENTS. International Journal of Environmental Economics, Commerce Educational and Management. https://doi.org/10.36713/epra16745
- Fitriyanto, M., & Pardjono, P. (2019a). The factors that influence employability skills of vocational school student mechanical engineering. TAMAN VOKASI. https://doi.org/10.30738/JTV.V7I1.4778
- Fitriyanto, M., & Pardjono, P. (2019b). Factors affecting the employability skills of vocational students majoring mechanical engineering. Jurnal Pendidikan Vokasi. https://doi.org/10.21831/JPV.V9I2.2442 0
- Gibbs, G., & Coffey, M. (2004). The Impact Of Training Of University Teachers on their Teaching Skills, their Approach to Teaching and the Approach to Learning of their Students. Active Learning in Higher Education, 5(2), 100-187. https://doi.org/10.1177/1469787404040 463
- Graça, V., Quadros-Flores, P., & Ramos, A. (2021). The Challenges of Initial

Teacher Training. Int. J. Emerg. Technol. Learn., 16(17), 193-212. https://doi.org/10.33422/3rd.educationco nf.2021.03.207

- Hanushek, E. (1997). Assessing the Effects of School Resources on Student Performance: An Update. Educational Evaluation and Policy Analysis, 19(2), 141-164. https://doi.org/10.3102/0162373701900 2141
- Issacar, N., & Hesbon, D. (2021). Instructional Learning Materials' Use and Students Academic Outcomes in Private Secondary Schools sin Rwanda: A Case Study of Nyarugenge District. Journal of Education. https://doi.org/10.53819/810181025026
- Jin, J., Xu, J., & Jian, X. (2024). The Influence of Advanced Vocational Education and Training on the Skill Development of Beginning Teachers: A Quantitative Assessment. *Journal of Electrical Systems, *(4), 181-189. https://doi.org/10.52783/jes.3800
- Jordan, R., Ruibal-Villasenor, M., Hmelo-Silver, C., & Etkina, E. (2011). Laboratory Materials: Affordances or Constraints?. Journal of Research in Science Teaching, 48(9), 1010-1025. https://doi.org/10.1002/TEA.20418
- La Velle, L. (2020). The challenges for teacher education in the 21st century: urgency, complexity and timeliness. Journal of Education for Teaching, 46(1), 1-3. https://doi.org/10.1080/02607476.2019. 1708621
- Mananita, M. (2021). Adequacy And Utilization Of Tools And Equipment And Students' Performance In Technical Vocational And Livelihood Education. International Journal of Scientific and Research

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

Publications (IJSRP), 11(08). https://doi.org/10.29322/ijsrp.11.08.202 1.p11633

- Martin, L., Fritzsche, B., & Ball, A. (2006). Funding Concerns and Student Achievement in Agricultural Education Programs.
- Martínez-Borreguero, G., Naranjo-Correa, F., & Mateos-Núñez, M. (2022). Development of STEM Instructional Resources for Optics Teaching to Teachers-in-Training: Influence on Learning and Teacher Self-Efficacy. Education Sciences, 12(3), 186. https://doi.org/10.3390/educsci1203018 6
- Novopashina, L., Grigorieva, E., Kuzina, D., & Cherkasova. (2021). J. Factors determining connection between teaching deficiencies and students' learning Science outcomes. for Education Today. 1(6). 22-40. https://doi.org/10.15293/2658-6762.210 6.01
- O, A., & A, M. (2018). Influence Of The Availability And Utilization Of Educational Resources On Students Academic Performance In Carpentry And Joinery Trade In Technical State, Colleges In Edo Nigeria. International Journal of New Technology and Research, 4.
- Okhakhu, O., Oladiran, M., & Omoike, A. (2016). Instructional materials as determinants of students' academic performance at the secondary school level In Ikorodu local government, Lagos State, Nigeria. Information Impact: Journal of Information and Knowledge Management, 7(1), 138-149. https://doi.org/10.4314/IIJIKM.V7I1

- Okenwa, B. (2017). Provision, Utilization and Maintenance of Technical Education Facilities. International Journal of Innovative Education Research, 2, 22-38.
- Olojuolawe, S., & Adeoluwa, O. (2022). Equipment and Facilities Gap in Vocational Technical Education of Higher Institution: Implication for Graduates Employability in Nigeria. Sains Humanika, 14(2). https://doi.org/10.11113/sh.v14n2.1838
- Oviawe, J., Omoh, D., & , U. (2019). School Plant Facility and Maintenance: A Necessity Effective Teaching and Vocational Learning Technical in Education and Training. Journal of Education and Vocational Research, 10(1). 15-21. https://doi.org/10.22610/jevr.v10i1(v).29 60
- Owoh, T. (2016). Development of Employable Skills in Vocational Education by the Utilization of Instructional Materials. International Journal of Vocational Education and Training Research, 3(4), 138-142. https://doi.org/10.20448/JOURNAL.509 /2016.3.4/509.4.138.142
- Peter, A., Kyaruzi, A., & Nyangas, J. (2024). ASSESSING THE EFFECTIVENESS OF EMPLOYABLE LEARNING PATHWAYS IN VOCATIONAL EDUCATION AND TRAINING IN VETA LINDI AND **MTWARA** CENTERS. International Journal of Education and Social Science Research, 1-20. 7(5), https://doi.org/10.37500/ijessr.2024.750 6
- Rahmanullah, F., Barliana, M., Meirawan, D., & Maknun, J. (2021). An Evaluation of Educational Facilities and Infrastructure

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph

in Vocational High School. Proceedings of the 6th UPI International Conference on TVET 2020 (TVET 2020). https://doi.org/10.2991/ASSEHR.K.210 203.127

- Samoilenko, O., Dubaseniuk, O., & Levchenko, S. (2021). FEATURES OF THE **IMPLEMENTATION** OF FOR THE PROGRAMMES DEVELOPMENT OF VOCATIONAL (VOCATIONAL AND TECHNICAL) EDUCATION INSTITUTIONS. Educational Analytics of Ukraine, 1(1), 81-92 https://doi.org/10.32987/2617-8532-202 1-1-81-92
- Saud, M., Audu, A., Rufai, R., Musta'amal, A., & Kamin, Y. (2013). Provision of workshop tools and equipment: necessity for technical vocational education graduates skills acquisition. Journal of Applied Sciences, 13, 3529-3533.
- Schwartz, K., Cappella, E., & Aber, L. (2019). Teachers' Lives in Context: A Framework for Understanding Barriers to High-Quality Teaching Within Resource Deprived Settings. Journal of Research on Educational Effectiveness, 12(2), 160-190. https://doi.org/10.1080/19345747.2018. 1502385
- Seals, C., Mehta, S., Berzina-Pitcher, I., & Wolf, L. (2017). Enhancing Teacher Efficacy for Urban STEM Teachers Facing Challenges to Their Teaching. Journal of Urban Learning, Teaching, and Research, 13, 135-146.
- Sohn, H., Park, H., & Jung, H. (2022). The Effect of Extra School Funding on Students' Academic Achievements under a Centralized School Financing

System. Education Finance and Policy, 18(1), 1-24. https://doi.org/10.1162/edfp_a_00375

- Thuan, K. (2019). A Study of Effects of School Facilities on Learning Performance of Vocational High School Students: An Empirical Study. Journal of Education.
- Van Nguyen, T., Nguyen, H., Cao, C., & Vu, H. (2023). Activities of the practice teaching organization and vocational teaching facilities in collaboration between the vocational school and units employing. Journal of Education and e-Learning Research, 10(2), 155-162. https://doi.org/10.20448/jeelr.v10i2.458 8
- Vitale, M., & Romance, N. (1992). Using videodisk instruction in an elementary science methods course: Remediating science knowledge deficiencies and facilitating science teaching attitudes. Journal of Research in Science Teaching, 29(9), 915-928. https://doi.org/10.1002/TEA.366029090 3
- Wu, X., & Ye, Y. (2018). Management of Technical and Vocational Education. In Vocational Education and Training in Times of Economic Change (pp. 241-275). Springer. https://doi.org/10.1007/978-981-13-083 9-0 7
- Zarifin, Z., Siswanto, I., Solikin, M., Sampurno, Y., Rahmas, B., & Lurudancang, G. (2020). Management Information System for Materials and Tools At Automotive Educational Workshop. Journal of Physics: Conference Series, 1700(1), 012071. https://doi.org/10.1088/1742-6596/1700/ 1/012071

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph



© **The Author(s) 2025.** This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/

Creative Commons Licensing Terms

Authors retain copyright for their published articles, with the Creative Commons Attribution 4.0 International License (CC BY 4.0) applied to their work. This license allows anyone in the community to copy, distribute, transmit, or adapt the article without needing permission from the author(s) or publisher, as long as clear and proper attribution is given to the authors. This attribution should clarify that the materials are being reused under the Creative Commons License. The opinions, views, and conclusions presented in the articles belong solely to the author(s). The Open Access Publishing Group and the European Journal of Applied Linguistics Studies disclaim responsibility for any potential losses, damages, or liabilities arising from conflicts of interest, copyright issues, or improper use of content related to the research. All published works meet Open Access Publishing standards and are freely accessible for educational, commercial, and non-commercial use, allowing for sharing, modification, and distribution under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

¹Corresponding Author: Joseph M. Josoy

^{*}Corresponding Email: jjosoy@nemsu.edu.ph