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ICT-AUTOMOTIVE SKILLS OF SENIOR HIGH SCHOOL STUDENTS AND THEIR EMPLOYMENT READINESS IN THE TECH-SAVVY HIRING ERA: A CORRELATIONAL ANALYSIS.

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ABSTRACT

In today's rapidly evolving automotive industry, digital competence has become a critical factor in determining graduates' readiness for employment. As automotive technologies increasingly integrate computer-based diagnostics, software systems, and electronic controls, technical vocational education must ensure that students are equipped with relevant competencies that align with workforce demands. This study examined the relationship between ICT-Automotive skills and the employment readiness of Senior High School students within a technology-driven hiring environment. Findings revealed that students demonstrated a very satisfactory level of ICT-Automotive skills across key domains, including computer-aided diagnostics, automotive software literacy, use of digital instruments and sensors, and electronic troubleshooting systems. In addition, students exhibited a high level of employment readiness, particularly in job interview preparation, resume and application writing, adaptability to digital workplaces, and problem-solving and critical thinking. The results further indicated a statistically significant positive relationship between ICT-Automotive skills and employment readiness,

suggesting that stronger digital-technical competencies contribute meaningfully to workforce preparedness. The study concludes that integrating digital technologies within automotive training not only enhances students' technical expertise but also strengthens their cognitive, adaptive, and professional competencies required in modern workplaces. It underscores the importance of sustained institutional support, curriculum enhancement, industry collaboration, and continuous innovation in technical-vocational programs to maintain alignment with evolving automotive industry standards.

Keywords: *digital proficiency, workforce preparedness, technical-vocational education, industry alignment*

INTRODUCTION

Background of the Study

In today's global economy, digital fluency, notably Information and Communication Technology (ICT) skills, is increasingly recognized as a critical predictor of employability, particularly for young graduates entering the workforce. As industries adopt more technology-driven processes, employers now expect applicants to possess a baseline level of digital competence, including proficiency in productivity tools, communication platforms, data handling, and basic troubleshooting. Despite growing demand, a significant gap persists between the ICT competencies that senior high school students possess and the actual expectations of modern employers. International research has long emphasized that technological competencies, communication, and adaptability are critical in matching the demands of rapidly evolving labor markets. However, much of the literature focuses on tertiary-level learners or overlooks senior high school populations, leaving a gap in understanding how younger students are equipped for emerging digital economies (Carada et al., 2022).

Within the Philippines, the Senior High School (SHS) curriculum under the K–12 framework aims to build work readiness through tracks such as Technical-Vocational-Livelihood (TVL) and ICT. Studies have shown that TVL graduates demonstrate technical and soft skills, including technology literacy, yet comprehensive evaluations of ICT-specific readiness—especially beyond immersion experiences—are limited (Alinea et al. 2024). Thus, there remains a notable lack of research directly linking ICT skill levels to employment preparedness among SHS students in the broader national context.

In the South Central Mindanao region, broader workforce development strategies, such as the Mindanao Human Resource Development Strategy, underline a critical need to align educational provisions with regional labor market demands (Open Knowledge Repository, 2019. Despite these policy orientations, localized empirical studies assessing SHS students' ICT capabilities and their alignment with readiness for tech - savvy hiring processes remain scarce. Focusing even more closely on Sultan Kudarat, research on SHS graduates has primarily concerned the social benefits of work immersion—such as leadership, communication, and self-efficacy—with scant attention to their ICT competence in the context of job market entry (especially in platforms requiring digital skills) (Ejournal UPI, IEOM Society, 2022). This indicates a significant literature gap: there is minimal empirical exploration of how ICT mastery among SHS learners in Sultan Kudarat correlates with their readiness to navigate technology-centric hiring processes.

This study aligned with SDG 4 (Quality Education), by focusing on enhancing digital competencies among youth; SDG 8 (Decent Work and Economic Growth), by investigating how education prepares students for employment; and SDG 9 (Industry, Innovation, and Infrastructure), by emphasizing ICT skills as essential to modern economic participation.

This study assessed the ICT skills of Senior High School students in selected secondary schools in Isulan, Sultan Kudarat, and how these competencies relate to their employment readiness in today's technology-driven hiring landscape, filling a critical gap in localized educational and workforce preparedness research.

Research Questions

Generally, this study aimed to assess the ICT skills of Senior High School students in the selected secondary schools in Isulan, Sultan Kudarat, and examine how these competencies relate to their employment readiness in today's technology-driven hiring landscape.

Specifically, the research problem revolved around understanding the following key questions:

1. What is the level of ICT-Automotive Skills of Senior High School Students, in terms of:

    1.1. Computer-Aided Automotive Diagnostics;

    1.2. Automotive Software Literacy;

    1.3. Use of Digital Instruments and Sensors;

    1.4. and Electronic Systems Troubleshooting?

2. What is the level of the Employment Readiness of Senior High School Students, in terms of:

    2.1. Job Interview Preparedness;

    2.2. Resume and Application Writing;

    2.3. Adaptability to Digital Work Environments; and

    2.4. Problem-Solving and Critical Thinking?

3. Is there a significant relationship between the level of ICT-Automotive Skills and Employment Readiness of Senior High School Students?

METHODOLOGY

Research Design

This chapter explains the study's research design and procedures. It also indicates the statistical tools and analytical methods, or the measurement of the relevant data acquired.

According to Bhandari (2021), a correlational research design investigates relationships between variables without the researcher controlling or manipulating any of them. Further, a correlation reflects the strength and/or direction of the relationship between two (or more) variables. The direction of a correlation can be either positive or negative. Correlational research is ideal for gathering data quickly from natural settings. That helps one generalize findings to real-life situations in an externally valid way.

Respondents of the Study

The 50 TVL Senior High School students and 10 TVL teachers from selected secondary schools in Isulan, Sultan Kudarat, during the school year 2025-2026 were respondents of the study.

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Sampling Technique

The respondents were selected using various sampling techniques. First, the Total Enumeration Sampling Technique was used in selecting 10 TVL teachers from selected secondary schools in Isulan, division of Sultan Kudarat, for the school year 2025-2026. Second, the Simple Random Sampling technique was used to select 50 TVL Senior High School students.

Research Instruments

The study used a researcher-made survey questionnaire and a Five-Point Likert Scale to assess the level of ICT-Automotive Skills of Senior High School Students. The scale below was used:

RATING	RANGE OF MEANS	DESCRIPTIVE RATING	INTERPRETATION
5	4.20-5.00	Agree	Outstanding
4	3.40-4.19	Fairly Agree	Very Satisfactory
3	2.60-3.39	Neutral	Satisfactory
2	1.80-2.59	Fairly Disagree	Moderate
1	1.00-1.79	Disagree	Poor

Another rating scale designed was used to level of the Employment Readiness of Senior High School Students

RATING	RANGE OF MEANS	DESCRIPTIVE	INTERPRETATION
5	4.20-5.00	Agree	Very High
4	3.40-4.19	Fairly Agree	High
3	2.60-3.39	Neutral	Moderate
2	1.80-2.59	Fairly Disagree	Low
1	1.00-1.79	Disagree	Unstable

Data Gathering Procedure

To ensure reliable and authentic findings, the researcher adhered to a methodology that aligned with the objectives of their inquiry. Initially, the study's implementation required the endorsement of the DepEd-Division Superintendent and the CGS Dean through the affixation of their respective signatures on a formal document.

An additional letter of authorization was secured from the school principals, the TVL department head, and advisers. To ensure the accuracy of the data collected for this study, a survey questionnaire was utilized, developed, and assessed. The researcher employed a random sampling using self-generated random number tables to select participants for the study.

Before conduct, the study observed ethical considerations. The researcher sought approval to conduct the study from the EWMCI Research Ethics Committee (EREC). Provided that the health protocol was adhered to, the investigator initiated the face-to-face dissemination of the Survey Questionnaire. The outcomes derived from the distributed survey questionnaire were compiled, assessed, and analyzed.

Statistical Treatment

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Scope and Limitations

This study examined the relationship between the ICT-automotive skills of Senior High School students and their employment readiness in the context of the tech-savvy hiring era. It specifically involved the Grade 11 and Grade 12 Technical-Vocational-Livelihood (TVL) track students from selected secondary schools in Isulan, Sultan Kudarat, during the school year 2025–2026. The study used correlational research, employing validated survey questionnaires and skills assessment tools to gather data on students' proficiency in ICT-related automotive competencies and their preparedness for employment. The scope of the research was delimited to TVL students specializing in automotive who are actively enrolled during the said academic year, excluding students from other tracks or year levels. This focus was chosen to provide insights into how technological advancements and automation in the automotive industry shape students' readiness for employment, to align educational outcomes with evolving labor market demands in a technology-driven era.

RESULTS AND DISCUSSIONS

In today's global economy, digital fluency, notably Information and Communication Technology (ICT) skills)—is increasingly recognized as a critical predictor of employability, particularly for young graduates entering the workforce. Using a descriptive-correlational design, this study assessed the level of ICT skills of Senior High School students in selected secondary schools in Isulan, Sultan Kudarat, and how these competencies relate to their employment readiness in today's technology-driven hiring landscape. The result indicates that senior high school students possess a very satisfactory level of ICT-Automotive skills across all measured domains. Each specific area: Computer-Aided Automotive Diagnostics, Automotive Software Literacy, Use of Digital Instruments and Sensors, and Electronic Systems Troubleshooting, was rated as Very Satisfactory, leading to a Grand Mean interpretation of Very Satisfactory.

Also, result reveals that Senior High School students demonstrate a high level of employment readiness across all measured domains, including job interview preparedness, resume and application writing, adaptability to digital work environments, and problem-solving and critical thinking. The grand mean of 3.79 indicates that, overall, students possess the essential skills and competencies required to enter the workforce with confidence and effectiveness.

Finally, it has been shown that there is a statistically significant positive relationship between the level of ICT-Automotive Skills and the employment readiness of Senior High School students ($r = 0.272$, $p \approx 0.035 < 0.05$). This suggests that students who demonstrate higher competency in computer-aided automotive diagnostics, automotive software literacy, use of digital instruments and sensors, and electronic systems troubleshooting are more likely to be

prepared for employment in automotive-related fields. While individual skill components show varying correlations—some slightly negative and others moderately positive—the overall trend reflects that ICT-Automotive Skills contribute meaningfully to employment readiness.

Conclusion

The following conclusions were made considering this study's findings:

First, the students were well-prepared in the theoretical and practical integration of digital technologies for automotive applications, reflecting strong competencies in modern automotive ICT tools and processes. Further, the students were not only equipped with technical and professional skills but also exhibited cognitive and adaptive abilities that align with the demands of modern workplaces. Finally, it was concluded that students who demonstrated higher competency in ICT-Automotive skills were more likely to be prepared for employment in automotive-related fields.

Recommendations

Considering the findings of the study, the following were recommended:

1. Department of Education (DepEd): DepEd can strengthen ICT-Automotive infrastructure and access in schools by providing up-to-date diagnostic tools, software licenses, and digital sensors. This ensures that students continue to develop high-level technical skills while bridging gaps in schools with limited resources. Additionally, integrating ICT-Automotive competencies into national TVL curriculum standards will formalize its role in preparing students for workforce demands.

2. School Administrators: Administrators may create structured industry-partnership programs that allow students to gain real-world exposure, such as internships or simulated workplace projects. By connecting classroom skills to actual automotive workplaces, students' employment readiness can be enhanced while ensuring their ICT skills are applied meaningfully.

3. Curriculum Planners: Curriculum designers can embed applied problem-solving and critical thinking modules within ICT-Automotive courses. For example, scenario-based exercises that require students to troubleshoot electronic systems or adapt digital tools to evolving automotive technologies will strengthen both technical proficiency and workplace adaptability.

4. TVL Teachers: Teachers are encouraged to balance technical instruction with career-readiness coaching, such as mock interviews, resume preparation, and digital workplace etiquette. They can also integrate reflective practice, asking students to document how ICT skills translate into practical problem-solving in automotive contexts, reinforcing the connection between technical mastery and employability.

5. Future Researchers: Researchers can explore the impact of emerging digital technologies on student employability, focusing on areas like AI-assisted diagnostics or augmented reality automotive training. Investigating these technologies can identify ways to enhance ICT skills and ensure students remain competitive in a rapidly evolving automotive industry.

Compliance with Ethical Standards

Ethical Considerations

In preparation for implementation, all plans and recommendations were presented to East-West Mindanao Colleges Inc. to ensure compliance with prescribed procedures and protocol, which focused on examining the ICT skills of Senior High School students in selected secondary schools in Isulan, Sultan Kudarat. It was imperative to emphasize the paramount importance of ethical considerations.

Before commencing the study, the following ethical principles were highlighted: Informed Consent:

Before participation, consent was obtained from all school heads involved in the study. They must possess a comprehensive understanding of the study's objectives, methodologies, potential risks, and benefits. Furthermore, participation remained entirely voluntary, allowing the participants to withdraw from the study at any juncture without adverse consequences.

Anonymity and Confidentiality:

To safeguard identities and responses, rigorous measures were followed to ensure anonymity and confidentiality. Rather than using actual names, pseudonyms or codes were used to uphold the participants' privacy. The collected data was securely stored with access restricted solely to the research team.

Avoiding Harm:

Delicate subjects, such as the challenges inherent in their roles, were discussed with potential emotional and psychological impact on participants. Strategies were in place to minimize distress, and a support system was readily available to assist participants.

Researcher-Participant Relationship:

The researcher maintained a professional and respectful rapport when engaging with the school heads.

Any actions that might harm the participants were scrupulously avoided, ensuring their utmost dignity and respect throughout the research process.

Data Protection:

Adherence to data protection regulations and laws was observed to safeguard the participants' personal information. Stringent measures were employed to ensure the secure storage and transmission of data.

Voluntary Participation:

Participants were assured that their participation in the study was devoid of any coercion or external pressure.

Researcher Bias:

The researcher remained vigilant regarding potential biases that might influence data collection and analysis, upholding objectivity and transparency throughout the research endeavor.

Institutional Approval:

Before initiating the study, the researcher sought ethical clearance from the pertinent institutional review boards or ethics committees.

Honesty and Integrity:

The research findings were reported truthfully and accurately, free from manipulation or distortion to align with preconceived notions or biases.

Beneficence:

The potential benefits of the research in educational practices and policies were thoughtfully considered, ensuring that the study contributes to the education system.

Cultural Sensitivity:

The researcher demonstrated cultural sensitivity by respecting local customs, beliefs, and practices in the research setting, refraining from imposing external values on participants. Inclusion and Diversity:

The study's structure prioritized inclusivity and diversity, encompassing a wide spectrum of students and attitudes towards learning in the 21st century

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With sincere gratitude, the researcher extends her deepest appreciation to everyone who became a part of this meaningful academic journey**.**

Declaration AI Tools Utilization

I do hereby declare the use AI tools, such as Chat GPT and Grammarly for grammar checking and setence organization purposes only.

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