

# Identify Factors That Influence Hard Skill Competency and Soft Skill Competency Through the Quality of Teaching in Aviation Vocational Education

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## ABSTRACT

**Objective:** This research analyzes factors influencing quality teaching to create complex skill competency (HSC) and soft skill competency (SSC) in education vocational graduates. Aviation vocational education produces aviation experts who can compete in the era of the global market. HSC is a technical skill, and SSC is an individual's interpersonal skill. The quality of vocational teaching has a vital role in creating graduate performance. **Method:** This research studies quantitative with a survey method. Samples are Aircraft Engineering students - Aviation Polytechnic in Indonesia, as many as 229 people – data retrieval using instrument research that has been fulfilled with validity and reliability tests. Analysis of research data uses Structural Equation Modeling (SEM). **Result:** This research shows that the formation performance of graduates (HSC and SSC) is determined by quality teaching. Lecturer Characteristics, Teaching Methods, and Laboratory Technicians are essential for increasing teaching quality in the formation of HSC – currently, SSC is developing through the pattern parenting student method. Students' success, integrity, and interpersonal skills reflect SSC. So that graduates are ready to compete in the job market. **Novelty:** Develop lecturers' characteristics and laboratory technicians to significantly increase the quality of education and prepare students to enter the world of work with relevant skills.

## INTRODUCTION

Vocational education aims to prepare competent students to be ready to work in the field according to field-selected skills. Competence is the main requirement in producing performance (Basri & Umar, 2021). Complex Skill Competency (HSC) and Soft Skill Competency (SSC) are elements essential for producing performance someone, and these two competencies complement each other. HSC is a technical ability that is directly related to specific job performance. SSC is a personal attribute that helps individuals work effectively with others. SSC develops through life experiences, interactions, and personal growth. Hard Skills are for carrying out specific responsibilities, but Soft Skills are for building relationships, fostering collaboration, and adapting to changing workplace conditions; developing and maintaining a balance between hard skills and soft skills is very important for one's career growth and success. Methods for developing hard skills and soft skills can be done through education, training, or experience. Therefore, vocational education graduates must have the skills to adapt to industrial changes (Hamdani et al., 2020). Integrating HSC and SSC competencies is necessary to meet current industry needs (Ardina et al., 2020). Thus, revitalizing vocational education will produce students with the competencies in critical thinking, collaboration, communication, and creativity to meet the demands of the 4.0 era (Sudiro, 2019).

Aviation education aims to produce graduates who are competent in aviation.

According to Civil Aviation Safety Regulations (CASR) states that every institution's education done vocational training in aviation must get approval from regulators. This regulation includes Training Pilots (CASR 141) and training aircraft mechanics (CASR 147). The regulation aims to produce the competence of graduates following aviation standards. Competence is the ability to work with every individual, encompassing knowledge, skills, and attitudes, to reach expected results following applicable standardization (Sutrisno & Zuhri, 2019). According to Annex 1-Personnel Licensing-International Civil Aviation Organization (ICAO). A license proves proof of ownership of aviation competency according to the field of expertise. In the aviation industry, technical skills are vital, such as pilots, aircraft mechanics, and air traffic controllers; pilots require technical competency in flight planning, aircraft systems, and situational awareness (Egnatia, 2023). Aircraft mechanics must have various skills and qualities to ensure a successful career in the aviation industry, including the ability to work effectively in a team, appreciate work results, be innovative, and be certified (Gentel, 2023). Therefore, The HSC is integral to aviation personnel's performance and career advancement.

However, with the development of information and communication technology, it is necessary to improve SSC to improve one's performance in facing the challenges that arise in the modern world of work. SSC is an individual's skills and life skills that can influence interpersonal and integrity, where interpersonal includes communication, cooperation, and self-management in the work environment. Performance is the result of an activity. Soft skills are an essential aspect of career success, and there is increasing recognition of the importance of soft skills in vocational education and training (Mahmood et al., 2019). To produce graduates who are superior and globally competitive requires a response from vocational education institutions. The success of the vocational education system in meeting the demands of Industry 4.0 must focus on curriculum development and training for high-skilled workers (Spottl & Windelband, 2020).

The 2023 ASEAN TVET International Conference formulated that vocational people must have technical skills and soft skills to produce vocational graduates who are superior and globally competitive. Thus, it is necessary to study the factors that influence Hard Skill Competency and Soft Skill Competency by improving the quality of teaching in aviation vocational education in Indonesia. Technical and Vocational Education and Training (TVET) is education, training, and skills development related to various fields of work (Unesco-Univoc, 2021). The Aviation Polytechnic in Indonesia is a type of TVET. Aviation vocational education aims to produce graduates with professional aviation competence, ethics, global standards, and integrity. Aviation competency consists of technical competency as a form of professionalism that meets global standards and SSC as a form of integrity and ethics for aviation personnel. The results of integrating these two competencies can be realized through graduation performance.

The TVET process focuses on developing HSC and work habits, as well as understanding and appreciation that workers need to enter the world of work and make meaningful changes (Thompson, 1973). The modernization of vocational education requires that the educational components (Educators, Facilities and Resources, Teaching Process, and Learning Environment) be able to face educational challenges in the era of Industrial Revolution 4.0. One of the professional competencies of TVET lecturers is lecturer attributes (Jafar et al., 2020). Generally, a vocational lecturer's attributes refer to a professional educator's characteristics or traits. A professional lecturer's characteristics include pedagogical abilities, work commitment, and physical characteristics that shape a person's identity. The dimensions of vocational lecturer characteristics include being

professional, confident, open, aware, and empathetic. One type of facility and resource in aviation vocational education is a laboratory/workshop/workshop.

A laboratory is a facility that functions to carry out practicums. Laboratories/workshops are crucial in the learning process to produce graduate skills for science education. The laboratory/workshop functions as Learning Resources, methods, and educational infrastructure. Vocational education must be able to prepare graduates who can work. Based on this principle, TVET is obliged to provide quality laboratory facilities. The requirements for aviation vocational education laboratories/workshops must have adequate facilities following the desired competencies and the maximum number of cadets being taught at any time. Laboratory quality includes management of human resources (laboratory technicians), equipment, practical materials, and operational costs. Laboratory technicians manage equipment, prepare materials, ensure safety, monitor equipment conditions, and evaluate laboratory activities. Various factors, including availability of laboratory equipment and materials, quality of laboratory management, and competency of laboratory technicians, influence the effectiveness of laboratory activities in supporting the teaching and learning process. Therefore, laboratory technicians have an essential role in supporting the quality of teaching in vocational education, training, and efficient teaching.

Vocational teaching is a process of interaction between educators, students, and learning resources in the vocational education environment. The quality of learning is how high the quality of the information presented is so that students' understanding is more effective. The success of the learning process can be seen from product and process aspects. Therefore, the effectiveness of vocational learning principles must be carried out using the learning-by-doing and hands-on experience methods. This teaching method is carried out by actual conditions in the world of work, which will later become a profession. The vocational learning process expects students to be actively involved in solving problems, creating things, and developing HSC (Purwasih et al., 2021; Kong, 2021). However, SSC in the aviation sector is crucial in producing professional performance because aviation industry operations have high technology and risk and can guarantee flight safety. Therefore, the HSC and SCC of aviation personnel must be developed in life and at work.

The Industrial Revolution brought about rapid and dynamic changes in the aviation sector. So, the workforce needs to rely on more than technical competence. However, soft skills have an important role in facing future technological developments. So, every individual must have balanced soft and digitalization skills (Polakova et al., 2023). Therefore, vocational education institutions must assess the link and match of education with the industrial world. A competency suitability assessment is used to determine the effectiveness of the suitability of the learning experience provided with job requirements (Palupi, 2024). HSC can be measured and studied through formal education and training, and SSC can be studied and developed through experience and training. The learning process must analyze the achievement of suitability for competency formation – student skills. Analysis of transferable skills of vocational students is the basis for developing more practical vocational education to meet the demands of an increasing, complex, and dynamic job market (Rahayu, 2024). Vocational education must be able to organize HSC learning and SSC development simultaneously to produce graduate competencies that meet market demands. Three critical factors in forming student competency in aviation vocational learning are lecturers, laboratories/workshops, and the teaching process. Appropriate correlation between teaching methods and lecturers' HSC serves to improve understanding and development of technical skills to perform specific tasks or roles.

Appropriate teaching methods will allow students to acquire and improve technical skills through direct experience following their responsibilities. Lecturers must be able to develop and select practical learning tools to improve students' technical abilities and soft skills. The problem-based learning (PBL) model is of good quality and can improve students' knowledge, critical thinking, psychomotor skills, and attitudes (Hidayati, 2024). These learning outcomes are influenced by the lecturer's guidance given to students. Collaborative guidance and demonstration methods with learning equipment with the latest technology have implications for student work readiness (Inderanata, 2023). Lecturers with competence, work skills, work engagement, and career skills are assets of vocational education institutions. Competence and work skills are significantly related to work engagement and lecturers' careers (Pareses, 2024).

Tenure has a moderating role in work autonomy and work involvement. Positive correlation research shows that the longer the work period, the stronger the relationship between work autonomy and engagement (Mulyana, 2024). Therefore, increasing students' HSC can be achieved through education, training, and practical demonstrations. Quality laboratory facilities must support successful practical learning. Laboratory quality is influenced by the standardization of equipment and competent laboratory technicians. The laboratory technician's job is to ensure the quality of laboratory operations. The higher the competency of the laboratory technician, the more creative and innovative, and the higher the quality of the laboratory. The development of SSC for aviation students can be done through character-building training by student caregivers in dormitories and lecturers while teaching.

The results of the teaching process contribute to the effectiveness and success of graduates in the workplace. The lecturer's personality characteristics, behavior, knowledge, and teaching qualifications influence the effectiveness of vocational teaching. In addition, the lecturer's attitude influences the quality of teaching. Thus, the characteristics of lecturers and laboratory technicians are a novelty that must be studied more deeply in vocational aviation education. They are developing the characteristics of lecturers and laboratory technicians related to the quality of vocational education to prepare graduates with HSC and SSC to compete in the global market. So, this research aims to identify factors that influence HSC and SSC in aviation vocational education. This development has implications for the ability of aviation vocational education to create and develop hard and soft skills simultaneously to increase graduates' absorption capacity.

## RESEARCH METHOD

This research uses a survey method. Survey research uses questions as research instruments given to respondents to obtain data to test hypotheses. The population and sample are aviation vocational education students at Indonesia's Air Transportation Human Resources Development Center (ATHRDC). The total sample was 229 respondents. The research instrument uses a questionnaire with a 4-point Likert scale. Instrument validation uses CVR, Item Total Correlation, and Item Fit, and reliability tests use reliability composite Cronbach Alpha. Research data collection using questionnaires given to students as respondents. Data collection uses a purposive sampling technique. The research procedure is as follows: 1) identification of the problem; 2) theoretical review; create research instruments; 3) test of the validity and reliability of the instrument; 4) data collection; 5) data analysis; 6) discussion; 7) conclusion. Research data analysis uses Structure Equation Modeling (SEM) with Adanco software. The stages of SEM analysis are measurement models and structural equations (Henseler et al., 2016). Measurement models that function

to validity and reliability research variable instruments. Meanwhile, Structural equation analysis aims to analyze the relationship between research variables. The path coefficient value is used to describe the relationship between research variables. To get a clear concept, this research is shown in Figure 1.

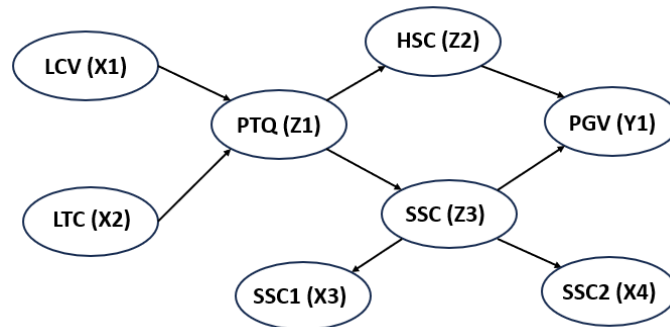


Figure 1. Relationships between variable study.

## RESULTS AND DISCUSSION

### Results

The stages of model measurement analysis consist of 1) Convergent validity, which checks the significance of the variable manifest factor loading; The loading factor value in convergent validation for exploratory research is more significant than 0.600 (Ghozali et al., 2015). Suppose the manifest variable is a latent reflection. In that case, the researcher must check the convergent validity by observing each variable's Average Variance Extracted (AVE) or Composite Reliability (CR) value. The threshold value for meeting the convergent validity criteria:  $AVE > 0.500$  and  $CR > 0.700$ ; 2) the cross-loading value determines Discriminant Validity. Variables have good discriminant validity if the AVE value of each variable should be greater than the square of the correlation between the two variables. Discriminant validity aims to compare the level of correlation between the AVE of one variable and the AVE of another variable (Fornell & Larcker, 1981). The results of model measurement are shown in Tables 1 and 2.

Table 1. Cronbach alpha, AVE, loading factor values of research variables.

Variable	$\alpha$	AVE	Item	L.F	Variable	$\alpha$	AVE	Item	L.F
Lecturer Character (X1)	0.914	0.537	X11	0.742	Teaching Quality (Z3)	0.800	0.402	Z11	0.871
			X12	0.844				Z12	0.877
			X13	0.698				Z13	0.780
			X14	0.712				Z14	0.904
			X15	0.684				Z15	0.798
			X16	0.804				Z21	0.936
Laboratorium Technician (X2)	0.831	0.377	X17	0.716	Hard Skill Competency (Z2)	0.922	0.695	Z22	0.824
			X21	0.668				Z23	0.771
			X22	0.666				Z24	0.765
			X23	0.636				Z25	0.816
			X24	0.627					

Table 2. Cronbach alpha, AVE, loading factor of soft skills competency.

Variable	Sub Variable	$\alpha$	AVE	Item	L.F
Soft Skills Competency	Integrity (Z3.1)	0.831		X31	0.774

Variable	Sub Variable	$\alpha$	AVE	Item	L.F
(Z3)			0.556	X32	0.795
				X33	0.737
				X41	0.850
				X42	0.804
				X43	0.775
	Interpersonal (Z3.2)		0.668	X44	0.826
		0.910		X45	0.830

The results of the structural equation analysis are shown in Figure 2.

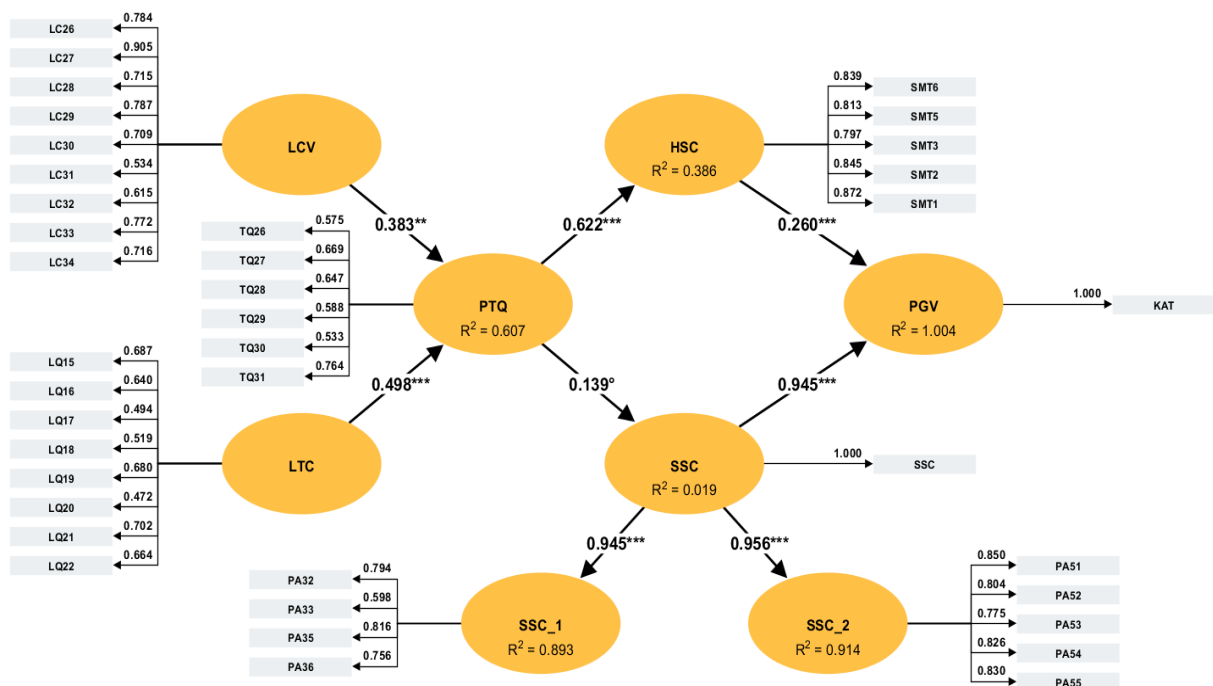


Figure 2. Results of Structural Equation Modeling

The results of this research's Standardized Root Mean Square Residual (SRMR) values are shown in Table 3.

Table 3. SRMR value results.

	Good of Fit Model Saturate	Good of Fit Model Estimate	Remark
SRMR	0.063	0.069	Fit Models

Table 4. Results of coefficient of determination value (R<sup>2</sup>).

Construct	(R <sup>2</sup> )
Quality Teaching (Z1)	0.607
Hard Skill Competency (Z2)	0.386
Soft Skills Competency (Z3)	0.019
Integrity (X3)	0.893
Interpersonal (X4)	0.914
Graduate Performance Vocational (Y)	1,004

This research has a second-order variable, the Soft Skills Competency (SSC) variable, so it is necessary to see the results of the relationship between the SSC variable and the Integrity and Interpersonal sub-variables. The results of this relationship are shown in Table 5.

**Table 5.** Result of path coefficient between SSC variables on sub-variables.

No.	Effects Variable to Sub Variable	Original coefficient	Standard Bootstrap Results			Remark
			Standard error	t- value	p-value (2-sided)	
Direct Effects						
1	Soft skill Competency -> Student Integrity	0.945	0.016	57,920	0,000	s***
2	Soft Skill Competency -> Student Interpersonal	0.956	0.011	88,072	0,000	s***

The analysis results in Table 6 show that soft Skill competency is directly and significantly influenced by student integrity by 94.500% and by student interpersonal skills by 94.500%. The results of the analysis of the relationship between research variables are shown in Figure 6.

**Table 6.** Results of total effects inference between variable research.

No.	Effects	Original coefficient	Standard Bootstrap Results			Remark
			Standar d error	t- value	p-value (2-sided)	
Direct Effects						
1	Lecturer Characteristics -> Teaching Quality	0.383	0.126	3,029	0.002	s**
2	Laboratory Technicians -> Teaching Quality	0.498	0.119	4,170	0,000	s***
3	Teaching quality -> Hard Skill Competency	0.622	0.057	10,876	0,000	s***
4	Teaching Quality -> Soft Skill Competency	0.139	0.072	1,835	0.066	ns °
5	Hard Skill competency -> Graduates Performance	0.260	0.015	17,803	0,000	s***
6	Soft Skill Competency -> Graduates Performance	0.945	0.019	50,895	0,000	s***
Indirect Effects						
1	Lecturer Characteristic -> Hard Skill Competency	0.238	0.077	3,078	0.002	s
2	Lecturer Characteristics - > Graduates Performance	0.112	0.049	2,287	0.022	s
3	Laboratory Technician -> Hard Skill Competency	0.309	0.087	3,554	0,000	s
4	Laboratory Technician -> Graduates Performance'	0.146	0.050	2,908	0.004	s
5	Teaching quality -> Graduate Performance	0.293	0.073	4,018	0,000	s

## **Discussion**

This study analyzes the factors influencing Hard Skill Competency and Soft Skill Competency. Based on the results in Table 1, this research produced loading factor values for all manifest variables ( $0.627 - 1.000$ )  $> 0.600$ . Cronbach Alpha value ( $0.800-0.922$ )  $> 0.700$ , (Eisingerich & Rubeca, 2020). AVE value for the laboratory Technician Variable:  $0.377 < 0.500$  and AVE value for Teaching Quality:  $0.402 < 0.500$ . However, the reliability value for these two variables is more significant than 0.70. So, these two variables can be declared reliable. Based on the applicable validity and reliability test requirements, the variables Characteristics of Vocational Lecturers, Laboratory Technicians, Teaching Quality, Hard Skill Competency, Soft Skill Competency, and Graduate Performance, and their constituent manifest variables can be declared valid and reliable.

Based on the results in Table 2, this research resulted in the loading factor value for all manifest variables being more significant than 0.700, the AVE value of the integrity sub-variable and the Interpersonal sub-variable being more significant than 0.50, and the Cronbach Alpha value of the integrity sub-variable:  $0.831 > 0.700$ ; Interpersonal sub variable:  $0.910 > 0.700$ . Referring to the validity and reliability results, the Soft Skills Competency variable, integrity sub-variable, Interpersonal sub-variable, and the constituent manifest variables can be declared valid and reliable. So, Structural equation analysis can be continued.

Structural equation model analysis aims to determine the relationship between variables. Structural equation analysis produces Standardized Root Mean Square Residual (SMSR), Determination Coefficient ( $R^2$ ), and Path Coefficient values. The SMSR value shows the goodness of model fit. Hu and Bentler (1999) state that the model can be categorized as fit if the SMSR value is  $< 0.080$ . The  $R^2$  value measures the model's ability to explain other variables with endogenous variables. Correlation coefficient classification:  $R^2 > 0.670$ : good;  $0.330 < R^2 < 0.67$ : moderate; and  $0.19 < R^2 < 0.330$ . The path coefficient value functions to analyze the relationship between research variables.

The result of the structural equation analysis is shown in figure table 3 above. The SRMR value of this research was  $0.064 < 0.080$ . This value shows that this research model can be declared fit. This means that the sample's diversity matches the population's diversity. Thus, the model used is following the observed empirical data.

Referring to the results of the Coefficient of Determination ( $R^2$ ) in Table 4 can be explained as follows: The characteristics of vocational lecturers and laboratory technicians simultaneously influence the quality of teaching by 68.20%. Meanwhile, the remaining 31.800% is influenced by other variables not tested in this study. This value can be categorized as vital. Self-efficacy has high practical relevance to teaching behavior, and the competence of technicians and laboratory assistants positively influences laboratory services partially and comprehensively; 2) Teaching quality influences HSC by 39.200%. This value is in the sufficient category. This result is supported by study results (Jumadin et al., 2020), which show that the quality of vocational program student learning is related to student academic performance; 3) The quality of teaching influences the formation of SSC of 0.090%. The quality of teaching is independent of the formation of SSC. Soft skills: The Malaysian Ministry of Higher Education identifies the hope of education and students, but not all soft skills; 4) The formation of SSC resulted in student integrity of 94.000% and student interpersonal performance of 91.400%. This value can be categorized as vital; 5) HSC and SSC simultaneously influence graduate performance of 100.400%. This value can be categorized as vital. This means that HSC and SSC provide all the information needed



to predict graduate performance.

The results of the structural equation analysis shown in Table 5 show that the formation of Student Integrity by the student care program directly reflects the students' SSC (94.500%) and Student Interpersonal (95.60%). These results show that responsibility, honesty, discipline, and hard work display a person's personality attributes and characteristics. These elements can influence interpersonal relationships in the work environment to create higher performance in a person's professional life. Integrity significantly and positively influences teacher performance, and different age categories and lecturer behavior influence student motivation outcomes (Noori et al., 2020).

When vocational education has students with high integrity, it will produce graduates who have high performance in the workplace. Integrity refers to adhering to ethics, exercising sound judgment, and fostering trust, respect, and a positive work environment. Therefore, integrity plays an essential role in employees, and high employee integrity results in better performance (Rahim et al., 2020). Integrity, competence, and discipline work simultaneously significantly influence employee performance (Sutaguna et al., 2023; Hasan, 2021). The need for soft skills in graduates has created a new low in graduate absorption. Therefore, graduates need to be more competent to survive or get a job in the market. Interpersonal skills encourage students to develop self-awareness, communication, collaboration, conflict management, leadership, and attitude. In aviation, interpersonal skills and social intelligence are criteria for personal selection. This skills training can reduce human error, such as speaking frequency, consistent communication patterns, and shared mental models. This program is called Crew Resources Management (CRM) in the aviation sector. CRM must be applied to the entire organization. Successful performance is directed at operational goals and requires the integration of various categories of knowledge, namely the integration of CRM with technical skills (MacLeod, 2021). Developing interpersonal skills means empowering professionals in leadership and management roles to create strong, compelling, and successful teams. Thus, interpersonal skills are an essential component of soft skills that contribute to higher performance in the workplace.

It forms soft skills for aviation vocational education through a cadet parenting system. Cadet parenting is a pattern of forming attitudes and behavior carried out systematically, structured in stages, and continuously during the educational process to develop students' Soft Skills. The implementation of parenting is carried out using methods: instructive, educative, suggestive, group discussions, habituation, giving sanctions, guidance, and counseling. This method means that the student care program effectively forms SSC in the educational environment. Improving the quality and success of child care is carried out by applying science. Collaboration between units related to child care according to management principles will increase the implementation and benefits of care by children and parents (Lansford et al., 2022). This is done by understanding family and community needs, getting support from stakeholders, planning workforce training and supervision, and building a culture of feedback and continuous improvement.

Based on the structural equation analysis shown in Table 6, Lecturer Characteristics directly influence Teaching Quality by 38.300%, and Laboratory Technicians directly influence Teaching Quality by 49.800%. Self-efficacy has high practical relevance to teaching behavior, and the competence of technicians and laboratory assistants has a positive influence on laboratory services both partially and comprehensively; 2) Teaching Quality has a direct influence on HSC 62.200%, but Teaching Quality does not significantly influence the formation of Soft Skill Competency. Soft skills: The Malaysian Ministry of

Higher Education identifies the hope of education and students, but not all soft skills; 3) The performance of vocational graduates is directly shaped by HSC of 26.000% and Soft Skill Competency of 94.500%.

The results of this analysis mean that collaboration between Lecturer Characteristics and Laboratory Technicians in vocational education can strongly influence Teaching Quality. Vocational Characteristic Lecturer elements include practical communication skills, self-confidence, awareness of student characteristics, empathy, and learning environment management. Lecturers' practical communication skills are essential in creating quality teaching for transmitting knowledge, classroom management, and the learning process. This ability is a basic need for students' academic and professional success. Omar et al. (2020) state that knowledge, skills, and attributes have a significant role in ensuring the level of competence of TVET educators so that the level of competence demonstrates that effective educators have to create a good learning environment. The ethics program is focused on the integrity of employees at the company. These values are enforced through job training, periodic ethics classes, and strict disciplinary measures. Professional educators must demonstrate high quality in carrying out teaching tasks. Professionalism reflects a lecturer's attitude towards his profession. A lecturer's attitude will be influenced by the characteristics he has. Therefore, the better the characteristics of vocational lecturers, the more significant the direct impact on the quality of teaching. So, improving the character of lecturers requires a continuous development program.

Meanwhile, HSC vocational graduates are directly formed by the practical teaching process. The effectiveness of vocational teaching can be achieved using learning-by-doing and hands-on experience methods. This learning process is carried out where students are directly involved in practical activities or experiences. Student skills are obtained from quality TVE laboratories. In the laboratory, there is a significant relationship between the five dimensions of the laboratory learning environment (resources, teaching, materials, models, equipment) and the performance of chemistry TVET students. Therefore, laboratory technicians are resources who play a crucial role in ensuring laboratory quality. Competent technicians can contribute to the success of laboratory operations and the quality of practical results. This, in turn, can positively impact students' learning experiences and their development as aviation professionals (Kit Ng et al., 2023). Online laboratory activities can effectively motivate students to learn about aviation and improve their aviation knowledge cognitively and socially, and engineering educators can use technology.

In this way, the synergy of lecturer characteristics and the quality of laboratory technicians can influence the quality of teaching by selecting appropriate teaching methods according to the specified hard skills. This synergy has significant benefits in facilitating understanding and development of skills, including strengthening understanding of concepts, improving skills, motivating students, building problem-solving skills, remembering old information, encouraging, collaborating, preparing for the world of work, and reducing gaps in theory and practice. A practical teaching approach in developing technical competencies to create graduates to face challenges in the real world. So, referring to the analysis above, the quality of performance of vocational education graduates must be formed simultaneously between HSC and SSC. HSC provides the basic knowledge and specific technical skills needed to carry out certain job duties and responsibilities as a professional. The higher the HSC of vocational education students, the better the graduates' performance. SSC significantly impacts an individual's productivity and success in the workplace and various situations in everyday life. Soft Skill

Competencies are becoming increasingly important in an increasingly diversified and dynamic work environment. Someone with a good balance between hard and soft skills tends to be more successful and effective in their work.

## CONCLUSION

**Fundamental Finding:** The results of this research data analysis show that the performance of aviation vocational education graduates is determined by the quality of the student's complex and soft skills. The quality of vocational teaching influences these two competencies. Lecturer characteristics and the capability of laboratory technicians are essential factors in forming complex skill competency, and student parenting is an effective method for developing soft skill competency. **Implication:** Creating synergy between the character of lecturers and the abilities of laboratory technicians is an essential factor in the vocational learning process to produce graduates with strong technical abilities. So, vocational education must be able to provide both hard skills and soft skills. **Limitation:** Subject research is limited to aircraft maintenance training organizations at aviation vocational higher education. **Future research:** additional variables such as learning culture and soft skills.

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