

Analysis of the mental readiness of technology and engineering students before industrial work practice

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ABSTRACT

Industrial Work Practice is an important stage for Vocational High School students in applying the technical skills acquired during the learning process to the world of work. Internal readiness is a determining factor for students' success in facing industry challenges. This study aims to analyse the internal readiness of students at Lingsar State Vocational High School 1, majoring in technology and engineering, before participating in pre-school, and to identify factors that affect this readiness. The method used is a quantitative descriptive method; data are collected through interviews. Moreover, questionnaires showed that 84 students had high self-confidence, while 50 felt anxious due to a lack of technical skills, and 38 admitted they lacked sufficient industry experience. A total of 95 students assessed that practitioners' roles are critical in shaping their internal readiness, indicating that educators' mentoring has a significant influence on their readiness. Statistical analysis shows that perseverance and environmental support factors contribute to students' internal readiness. Soft skill training programs, work culture simulations and strengthening psychosocial support, to ensure students have optimal internal readiness before entering the workforce.



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INTRODUCTION

Fieldwork practice, known locally as education and training, is an essential component of vocational education that aligns students' academic competencies with real-world workplace demands. By engaging directly in industry settings, vocational high school students can apply their technical skills while cultivating professional attitudes. However, studies indicate that many graduates still lack sufficient work-readiness, particularly in internal attributes such as resilience, confidence, and adaptability (Arif et al., 2023). This shortfall is compounded by structural employment challenges, including limited job opportunities, low workforce quality, and suboptimal productivity, all of which contribute to persistently high youth unemployment rates (Wahyuni et al., 2021). To address this issue, the Indonesian government enacted the Minister of Manpower Regulation No. 3 of 2017, which promotes the link-and-match initiative between vocational schools and industry. As emphasised in the regulation, private companies are expected to provide fieldwork practice opportunities for vocational high school students, as well as internships for teachers in productive subject areas (Rahmawati & Patrikha, 2022).



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One of the pressing challenges in vocational education today is ensuring that graduates possess not only technical expertise but also the mental readiness and adaptive capacity required to succeed in increasingly competitive labour markets. Research indicates that many vocational high school (SMK) graduates in Indonesia continue to struggle with fundamental employability skills, including resume development, interview performance, and psychological adjustment to workplace demands (Lubis et al., 2023). This gap is exacerbated by inadequate organisational strategies and infrastructure that fail to align vocational training with real-world industry standards (Wahyuni et al., 2021). While hard skills remain essential, the development of soft skills such as communication, teamwork, and self-confidence plays a critical role in shaping graduate success (Sagirani, 2024). To address these deficiencies, fieldwork practice has been integrated as a strategic intervention, providing students with authentic exposure to workplace culture and operations, thereby easing their transition post-graduation. Vocational high schools are thus tasked not only with delivering technical instruction but also with producing graduates who are aligned with current job demands in terms of knowledge, competencies, and attitudes (Kurniawan & Mundilarno, 2023). However, despite the proliferation of SMKs in Indonesia, the persistent issue of low skill acquisition and readiness continues to hinder graduate competitiveness in the job market (Puspitasari & Bahtiar, 2022). Consequently, enhancing the relevance and responsiveness of vocational education through structured work-based learning remains a national imperative (Rahmawati & Patrikha, 2022).

Despite being positioned as a strategic source of skilled labour, graduates of vocational high schools in Indonesia consistently experience the highest unemployment rates among all education levels. According to the Central Statistics Agency, the open unemployment rate for vocational high school graduates reached 11.13% in 2021, exceeding that of general senior high school (9.09%) and even university graduates (5.98%) (Ahmad & Rachmawati, 2023; Hidayatulloh et al., 2021). This alarming trend underscores a systemic failure to prepare vocational students for real-world employment adequately. One root cause lies in the insufficient implementation of strategic educational infrastructure, including both physical facilities and career support services. Theoretically, this aligns with Human Capital Theory (Becker, 1993), which posits that investments in infrastructure, training systems, and workplace alignment directly influence the productivity and employability of graduates. Without access to modern equipment, industry-relevant learning environments, and structured guidance, students lack the contextual experience necessary to navigate job markets effectively. As Sumual et al., (2023), emphasise, work readiness is not solely the responsibility of educational institutions but requires multisector collaboration. Furthermore, Rohman et al., (2022), define work readiness as a comprehensive state encompassing physical, mental, and psychological preparedness attributes that cannot be developed in environments lacking adaptive learning tools. Preparing graduates for Industry 4.0 demands infrastructure that goes beyond classrooms; it requires a robust ecosystem of mentoring, simulation-based training, and industry integration to foster the core capabilities described by (McDonald & Paganelli, 2021).

Work readiness encompasses a combination of skills, knowledge, and personal attributes that enable individuals, particularly vocational high school students, to transition effectively into the labour market (Togher et al., 2023). Beyond technical competencies, readiness also involves understanding workplace dynamics and developing soft skills such as communication, problem-solving, emotional regulation, and teamwork, which are increasingly regarded as critical for long-term career success (Sagirani, 2024; Sumual et al., 2023). Vocational education aims to produce graduates who are not only skilled but also mentally prepared to enter complex and evolving work environments (Jafri et al., 2024; Elfranata et al., 2023). However, studies reveal that many students possess adequate hard skills but still lack psychological resilience and adaptability, contributing to high dropout rates and difficulty sustaining employment (Susanti. Factors such as self-concept, self-efficacy, and emotional maturity significantly influence one's ability to persevere and perform under pressure (Esa et al., 2022; Itryah & Anggraini, 2022). Muna et al. (2022) emphasise that students who can make independent career choices based on interest and motivation are more likely to develop a sense of purpose and long-term work engagement. Conversely, those with low self-esteem often experience internal stress, including test anxiety, which undermines their readiness to face real-world challenges (Rahmawati et al., 2021). Therefore, strengthening soft skills and psychological resilience must be prioritised alongside vocational training to ensure graduates are truly workforce-ready, not

just technically capable, but mentally and socially equipped for success (Sari & Mariyanti, 2024; Miftahuddin & Robani, 2023).

Mental readiness in making career decisions encompasses affective, cognitive, and psychomotor aspects, collectively forming individuals' psychological readiness to enter the workforce (Hidayati, 2023). The affective aspect relates to the ability to manage emotions and motivation; the cognitive aspect refers to critical thinking and decision-making skills; while the psychomotor aspect reflects the readiness to carry out actions effectively in a work context. Work readiness is not merely about technical ability, but also heavily influenced by internal readiness, an individual's psychological and physical capacity to perform tasks efficiently (Hidayati, 2023). This internal readiness serves as foundational capital, enabling individuals to achieve optimal career outcomes. One key factor influencing internal readiness is adaptability, especially in responding to dynamic work environments. This adaptability is cognitively represented by the concept of career rigidity, which describes an individual's resistance to change or career flexibility (Lasut et al., 2024). High levels of career rigidity may hinder psychological readiness by limiting one's ability to adjust to shifting job demands. Furthermore, work readiness is described as a state of harmony among physical, internal, and existential maturity that enables individuals to perform work-related activities effectively (Riyanti & Kasyadi, 2021). However, this ideal condition is increasingly challenged by the rising mental health crisis among adolescents and young adults, which is becoming a significant global concern. Reports indicate that mental health issues are escalating, affecting young people's ability to cope with transitions, including entry into the labour market (Rahmahdiyyah & Pujiyanto, 2024). Therefore, psychological readiness must be considered a central component of the school-to-work transition process, requiring targeted interventions through career guidance, soft skills development, and continuous psychosocial support to prepare students for modern work environments.

Work readiness is deeply influenced by various internal factors, particularly self-regard, which shapes how adolescents perceive their abilities and interact with their social environment. Positive self-evaluation reinforces motivation and confidence, both of which are critical for navigating workplace challenges (Elfranata et al., 2023). Key components that determine internal readiness include prior experiences, psychological maturity, logical reasoning, emotional regulation, and the ability to collaborate and adapt in dynamic work environments (Susanti et al., 2024). In this context, self-efficacy plays a pivotal role. Students who believe in their capacity to succeed are more resilient and engaged during transitions such as internships or entry-level employment. External factors also contribute, including academic performance, parental support, social and career guidance, and hands-on experiences through industrial work practices (Riyanti & Kasyadi, 2021). The absence of psychological preparedness, marked by low self-confidence and poor stress management, can lead to failure to thrive during field placements or professional induction. Therefore, assessing students' internal readiness before fieldwork is crucial to ensuring successful adaptation. Future studies are needed to explore further the interplay among work readiness, vocational competence, and psychological constructs such as motivation and self-efficacy (Ismoyo & Wahjudi, 2023).

This study examines the internal readiness of engineering technology scholars before externship and the factors that impact it. The thing is to describe scholars' internal readiness before externship. Dissect the internal and external factors that impact their readiness before externship, which will eventually serve as the foundation for entering the world of work. The benefits of this study are anticipated to provide seminarists with an overview of how to design internal medication programs before externship, so that their expectations are met. Provide input to the artificial world to foster externship actors.

The novelty of this research lies in the mental readiness of Vocational High School students majoring in Technology and Engineering before participating in industrial work practices. This aspect has rarely been explored comprehensively in previous studies that have focused more on post-internship job readiness or on technical skills alone. This study offers an integrative approach by combining psychological instruments, such as the Big Five Personality Test, Grit Scale, and Self-Efficacy Test, thereby providing a more holistic picture of student readiness. In addition, this study identified in detail the sources of students' anxiety, especially a lack of technical skills and industry experience, which are the dominant factors inhibiting internal readiness. An important contribution

of this research is in the practical realm and vocational education policy, namely by recommending the integration of soft skills training, work culture simulation, and strengthening psychosocial support into the curriculum design of vocational high schools. This study provides a strong conceptual and practical foundation for developing a more comprehensive mental-readiness-based vocational education model.

METHOD

This study employed a quantitative descriptive approach to assess vocational students' internal work readiness prior to their fieldwork practice. The study involved 86 eleventh-grade students majoring in Engineering Technology at Vocational High School, Students 1 Lingsar, who were preparing for an externship. The total sampling technique was applied, in which the entire population was involved as respondents. This method was selected because the population size was both manageable and homogeneous, allowing researchers to obtain comprehensive data without introducing sampling error or generalisation bias. Data collection was conducted through a Likert-scale questionnaire assessing components of self-confidence, stress management, social adaptation, and work motivation. To enrich the psychological dimension, standardized instruments were employed: the Big Five Personality Test, which measures Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness (McDonald & Paganelli, 2021); the Grit Scale to evaluate perseverance toward long term goals; and a self efficacy Test to examine students' perceived ability to tackle work challenges (Itryah & Anggraini, 2022; Esa et al., 2022). The study also examined external factors, including the roles of teachers and schools in providing career guidance, family and peer support, prior externship experiences, and industry expectations (Sumual et al., 2023).

The primary instrument included adaptations of the Work Readiness Index (Brady, 2010) and the Emotional Quotient Index (EQI), grounded in Goleman's framework, as adapted by Chikobvu & Harunavamwe (2020). As explained by Ningsih et al., (2021), quantitative research emphasises data collection through measurement instruments and analysis using statistical procedures. The questionnaire was administered offline and analysed using SPSS version 23, involving descriptive statistics (mean, standard deviation, frequency, and percentage) and Pearson's product-moment correlation analysis for hypothesis testing (Ningsih et al., 2021). Instrument reliability was examined using Cronbach's Alpha, with a threshold of >0.70 indicating internal consistency (Wahyuni et al., 2021). The study employed an explanatory quantitative design to identify and analyse the relationships among Soft Skills (X_1), Hard Skills (X_2), and Work Readiness (Y) (Susanti Siregar et al., 2024). This framework enabled a comprehensive understanding of both internal psychological factors and the instructional and experiential components that influence student preparedness.

Based on the results of the reliability test using Cronbach's Alpha, a value of $\alpha = 0.936$ was obtained from 19 instrument items. This value indicates a very high level of internal consistency, exceeding the commonly accepted threshold of 0.70 in social science research. After standardisation, Cronbach's Alpha increased slightly to 0.939, confirming that internal consistency was maintained and even improved. These results indicate that the instrument items are strongly consistent in measuring the intended constructs. Therefore, the research instrument demonstrates excellent reliability and can be used with confidence to measure the variables under study with high accuracy.

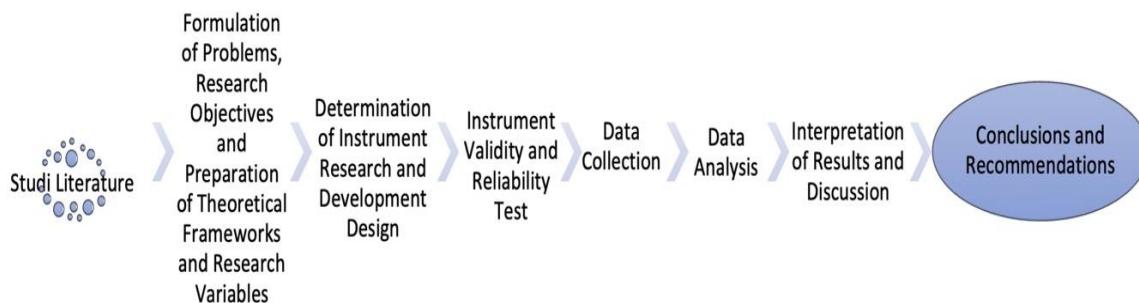


Figure 1. Flow Chart Research Method

The questionnaire items were developed to operationalise the conceptual framework of students' work-readiness into measurable indicators. Each item represents specific psychological and behavioural constructs related to internal work readiness, including self-efficacy, resilience (grit), emotional readiness, discipline and responsibility, and adaptability. These constructs were selected based on established theories of work readiness and personality development and aligned to assess students' preparedness for industrial work practice. The instrument employed a five-point Likert scale ranging from strongly disagree to agree strongly. A detailed description of the research instrument is presented in [Table 1](#).

Table 1. Research Instrument

No.	Indicator	Aspects/Constructs	Instrument Statement	Likert Scale
1	Confidence in completing industrial tasks	Self efficacy	I am confident I can complete the assigned work tasks during industrial practice.	1 – 5
2	Ability to cope with job challenges	Self efficacy	I feel capable of facing the challenges that will arise in the workplace.	1 – 5
3	Resilience in the face of failure	Resilience (grit)	I kept trying even though I had experienced several failures.	1 – 5
4	Commitment to long-term goals	Resilience (grit)	I am committed to pursuing my long-term career goals.	1 – 5
5	Managing emotions while working in a new environment	Emotional readiness	I can manage my emotions in a new, unfamiliar work environment.	1 – 5
6	Confidence in new situations	Emotional readiness	I am confident in facing new situations during practice	1 – 5
7	Responsibility for completing tasks	Discipline and Responsibility	I always complete my tasks on time without being reminded.	1 – 5
8	Rigour in work	Discipline and Responsibility	I always pay attention to detail in every task I do.	1 – 5
9	Willingness to keep learning	Adaptability	I am open to new experiences and willing to learn new things in the world of work.	1 – 5
10	Response to criticism or evaluation	Adaptability	I received criticism as input to improve my performance.	1 – 5

RESULTS AND DISCUSSION

Results

The data collected based on the questionnaire was analysed with the results in [Figure 2](#) as follows:

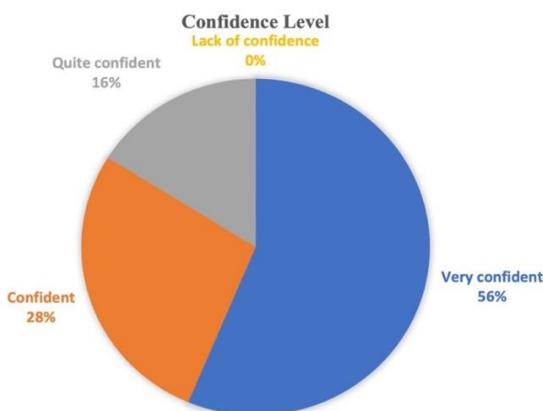
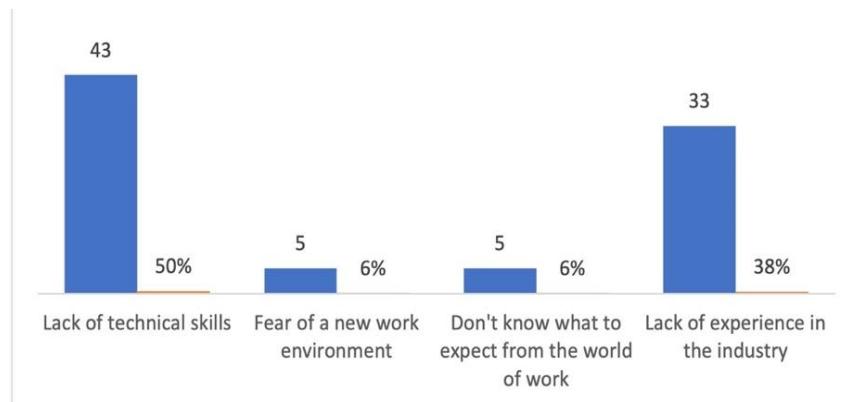


Figure 2. Test Results Student Confidence Level

Data show that students' self-confidence is powerful 84% report feeling either confident or very confident, and none express any lack of confidence. A total of 56 students stated they were very confident, while 28 felt confident, placing the majority firmly in the positive confidence category. Even the remaining 16 students reported being quite confident, suggesting that all students possess at least a moderate sense of self-assurance. These findings reflect an educational environment and student experiences that appear to foster confidence. Theoretically, this aligns with [Bandura's Self-Efficacy Theory \(1997\)](#), which posits that individuals' beliefs in their capabilities significantly influence their behaviour, perseverance, and success when facing challenges. In the context of work readiness, self-efficacy is a central indicator of mental preparedness: students who believe in their competence are more likely to remain resilient under pressure, adapt quickly, and stay motivated to grow. Bandura identifies key sources of self-efficacy: vicarious experience, verbal persuasion, and mastery experience, all of which can be traced in students' learning environments and pre-employment exposure. Therefore, high self-confidence is not only a psychological asset but also an objective indicator of vocational students' mental readiness to enter the workforce. This is supported by findings from [Talitha & Novi \(2024\)](#), which suggest that industrial work practices, access to labour market information, and the socioeconomic background of students' families partially influence their level of work readiness. Investing in confidence-building through structured learning and workplace exposure thus plays a critical role in preparing students to meet professional challenges with assurance and adaptability.

Locus of control positively influences the work readiness of mechanical engineering scholars ([Hidayatulloh et al., 2021](#)), with artificial work practices exerting a positive and significant influence on scholars' work readiness. Scholars' work-readiness is in the ready order, with a chance position of 75.91 per cent ([Ashdown et al., 2023](#)). This is supported by 7 pointers which include having logical and objective considerations, having the capability and amenability to work with others, being suitable to control oneself or feelings, having a critical station, having the courage to accept responsibility collectively, having the capability to acclimatize to the terrain and technological developments, having the ambition to advance and trying to follow developments in the field of moxie ([Hidayati, 2023](#)). There are influences of self-esteem and self-efficacy on scholars' work readiness, and of tone regard and tone regard together on scholars' work readiness ([Elfranata et al., 2023](#)). Social support and parental self-regulation have implications for the development of learning independence ([Yulianingsih & Fathiyah, 2025](#)).



[Figure 3. Graph Student Anxiety Level](#)

[Figure 3](#) shows that the main factor contributing to students' anxiety before entering the workforce is the lack of technical skills, affecting 50% of students. Additionally, 38% of students report a lack of industry experience, indicating that more than a third feel they lack sufficient work experience. Furthermore, 6% of students reported feeling anxious due to fear of the new work environment or uncertainty about what to expect in the workforce. These findings confirm that students' anxiety relates more to practical competency and authentic experiences rather than psychological or emotional factors. Educational institutions are expected to enhance practice-based

learning, such as technical training and internship programs, to prepare graduates better to enter the workforce with greater confidence and competence.

Anxiety affects job readiness. This study found that anxiety does not necessarily affect job readiness, task concentration, or the ability to form effective opinions (Togher et al., 2023). Anxiety also leads to inordinate solicitude about the judgment of others and the outgrowth of job readiness. Anxiety can lead to physical and internal prostration due to the need to keep allowing, performing, or a drop in energy or interest in preparing for work. Depression rates among recent graduates have a significant negative impact on their capability to demonstrate job readiness. Lack of tone provocation and incapability to form opinions and progress in their careers (Rahmahdiyyah & Pujiyanto, 2024). Emotional intelligence is a factor that affects job readiness (Miftahuddin & Muhammad, 2023).

The variable that most affects scholars' job readiness is artificial work practice, with a beta value of 0.477. The significance of practical experience in shaping the work readiness of vocational academy scholars (Sari & Mariyanti, 2024). The internal health of recent graduates in the study of job readiness is associated with better adaptation to the new work terrain, increased productivity, and advanced job satisfaction (Verbeek et al., 2022). Factors similar to social support, adaptability, and the capacity to manage depression, anxiety, stress, and religiosity can affect internal health and job readiness (Rahmahdiyyah & Pujiyanto, 2024).

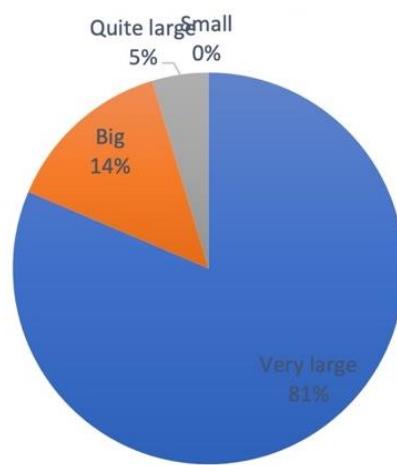


Figure 4. Graph of the Teacher's Role in the Mental Preparation of Students

Figure 4 explains the importance of teachers as mentors and motivators in students' mental development and emotional readiness. As many as 95% of students consider the role of teachers to be vital; educational institutions should continue to strengthen teachers' roles, not only as teachers but also as coaches of students' character and mentality. In Graph 3 above, the majority of students (81%) consider the role of teachers to be very important in helping students mentally prepare for the world of work. As many as 14% of students stated that the role of teachers is relatively significant, and the other 5% consider it quite large.

These findings support the view that preceptors not only deliver literacy accoutrements but also serve as facilitators of scholars' cognitive and motivational development. The role of preceptors in education should be expanded to include character development, internal readiness, and the formation of a positive attitude towards future challenges. The impact on children's intelligence can be the family environment or maternal parenthood. The child's academic readiness is determined by three factors: maternal parenthood, maternal education position, and children's social status. Their parental style and educational background influence children's social gestures (Mutiah et al., 2025). Strategy to strengthen internal readiness, organising a soft chops training program before Industrial Work Practices. Provide a simulation of an artificial work culture through mini-systems or case studies (Ashdown Franks et al., 2023). Adding collaboration with the artificial world in furnishing debriefing on the world of work (Cristiano et al., 2021).

Table 2. Statistical Factors that Support Discipline and Responsibility Attitudes

Discipline and Responsibility	N	Sum	Mean	Std. Error	Std. Deviation
Always complete tasks on time	86	347	4.03	.061	.563
Very attention to detail in my work	86	357	4.15	.065	.604
Doing the best in every job	86	369	4.29	.068	.630
Have full responsibility for the task	85	368	4.33	.061	.565
Valid N (listwise)	85				

Table 2 describes students' attitudes toward discipline and responsibility in their work behaviour. The results indicate that most students demonstrate a high level of discipline and responsibility in completing their tasks. The variable always completing tasks on time shows a mean score of 4.03 with a standard deviation of 0.563, indicating a relatively consistent habit of timely task completion among students. The variable paying close attention to detail in work has a mean of 4.15 and a standard deviation of 0.604, suggesting that students generally maintain strong attention to detail. The variable performing best across all job records has a mean score of 4.29 and a standard deviation of 0.630, reflecting students' strong effort to perform optimally. Meanwhile, the variable having full responsibility for the task achieves the highest mean score of 4.33 with a standard deviation of 0.565, indicating that students most consistently demonstrate responsibility compared to the other aspects.

Table 3. Factors that Support Perseverance and Persistence

Persistence and persistence factors (resilience scale)	N	Sum	Mean	Std. Error	Std. Deviation
Strive to achieve goals despite many failures	86	359	4.17	.071	.654
It is not easy to give up on difficult tasks	86	352	4.09	.059	.545
Commit to long-term goals	86	352	4.09	.051	.476
Often looking for other ways to solve problems when encountering obstacles	86	365	4.24	.068	.631
Believes that hard work is the key to success	86	370	4.30	.070	.652
Do not be tempted to abandon your goal even though there are other, easier options	86	353	4.10	.066	.614
Can maintain self-motivation to achieve career goals	85	351	4.13	.062	.573
Valid N (listwise)	85				

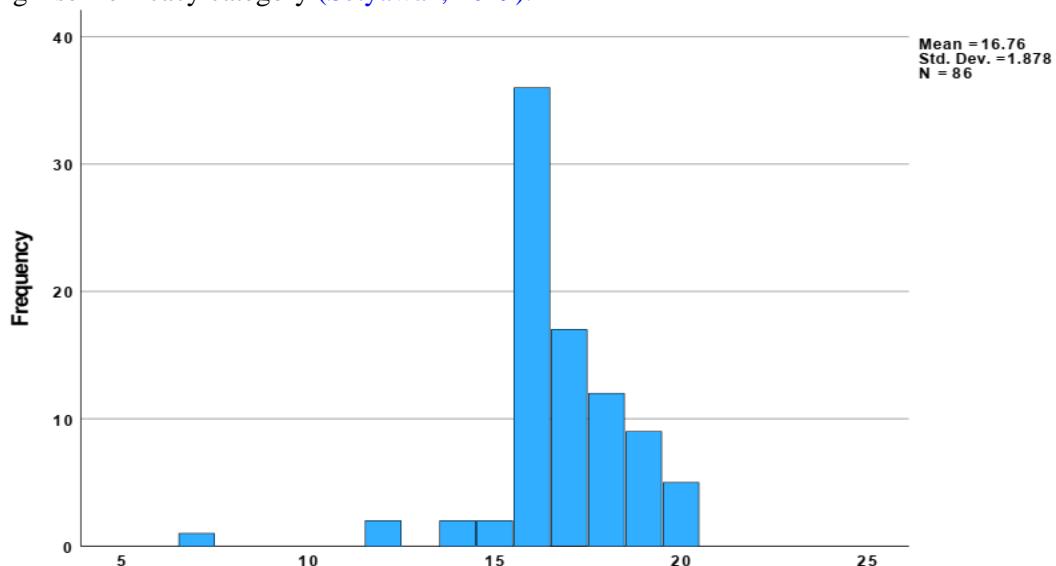
According to **Table 3**, the majority of students demonstrate a high level of perseverance and persistence in achieving their goals. The variable "Strive to achieve goals" has an average score of 4.17 with a standard deviation of 0.654, indicating that most students maintain a high level of effort even when facing obstacles. The variable "It is not easy to give up on complex tasks" has an average of 4.09 and a standard deviation of 0.545, indicating that students generally exhibit resilience when confronted with challenges. The variable Commit to long-term goals also has an average of 4.09 with a standard deviation of 0.476, reflecting a relatively uniform commitment among students.

The variable, often looking for other ways to solve problems when encountering obstacles, has an average of 4.24 with a standard deviation of 0.631, indicating that students tend to seek alternative solutions when facing difficulties. The variable "Believes that hard work is the key to success" had the highest average of 4.30 and a standard deviation of 0.652, highlighting that students strongly value effort as a pathway to achievement. The variable "Do not be tempted to abandon your goal even though there are other, easier options" has an average of 4.10 and a standard deviation of 0.614, suggesting that students resist shortcuts and remain focused on their objectives. Finally, the variable 'Can maintain self-motivation to achieve career goals' has an average of 4.13 and a standard deviation of 0.573, indicating that students generally sustain motivation toward their career ambitions. Overall, these results demonstrate that students possess high levels of resilience, persistence, and intrinsic motivation, which are essential for achieving long-term success.

Table 4. Factors of Students' Efficacy Attitudes

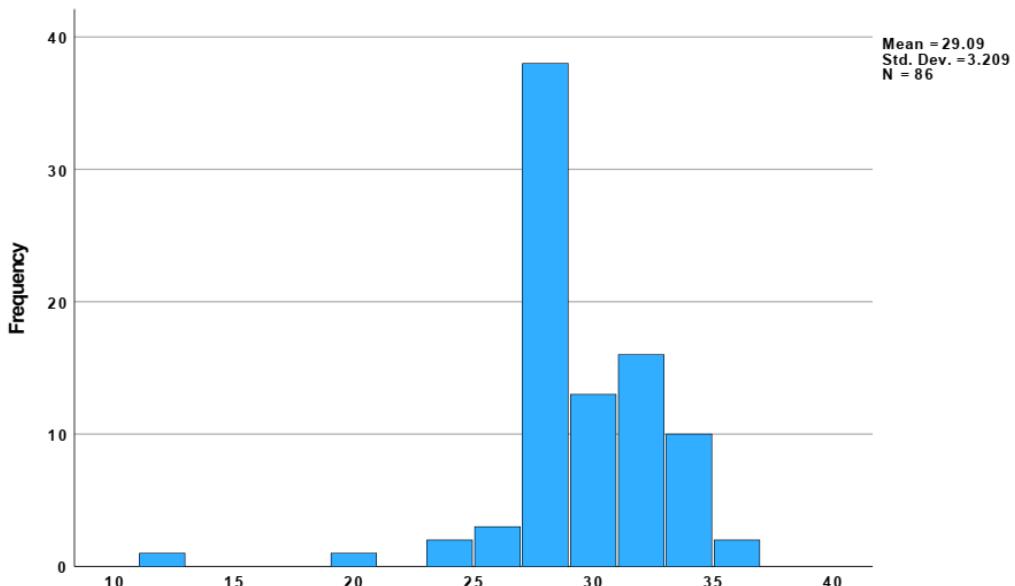
Students' confidence in self-efficacy	N	Sum	Mean	Std. Error	Std. Deviation
Confident in being able to complete tasks in the world of work	86	351	4.08	.053	.490
Be able to handle work challenges with confidence	86	349	4.06	.048	.443
Able to make the right decision	86	339	3.94	.051	.469
Can work independently without much direction	86	324	3.77	.085	.792
It is not easy to hesitate in taking steps to get the job done	86	339	3.94	.065	.601
Can learn new skills quickly if needed	86	346	4.02	.062	.573
Able to find solutions when facing problems at work	86	352	4.09	.059	.545
Confident in overcoming difficulties in a new work environment	86	341	3.97	.053	.496
Valid N (listwise)	86				

Based on **Table 4**, students generally demonstrate a high level of self-efficacy in facing work-related challenges. The variable "Confident in being able to complete tasks in the world of work" has a mean of 4.08 and a standard deviation of 0.490, indicating that most students feel capable of performing their tasks effectively. The variable "Be able to handle work challenges with confidence" has a mean of 4.06 and a standard deviation of 0.443, indicating strong confidence in overcoming work-related difficulties. Able to make the right decision has a mean of 3.94 and a standard deviation of 0.469, suggesting that students are generally confident in their decision-making and exhibit relatively low variation. The variable Can work independently " obtained a mean of 3.77 and a higher standard deviation of 0.792, indicating more variability in students' ability to work independently. It is not easy to hesitate in taking steps to get the job done, with a mean of 3.94 and a standard deviation of 0.601, showing students tend to act decisively when completing tasks. The variable "Can learn new skills quickly if needed" has a mean of 4.02 and a standard deviation of 0.573, indicating good adaptability in acquiring new skills. Able to find solutions when facing problems at work has the highest mean of 4.09 with a standard deviation of 0.545, suggesting students are confident in problem-solving. Finally, Confidence in overcoming difficulties in a new work environment has a mean of 3.97 and a standard deviation of 0.496, indicating that students generally feel able to adapt to new work contexts. Overall, the results indicate that students' self-efficacy is relatively high, particularly in adaptability, problem-solving, and learning new skills, although only 41.3% fall into the 'high' self-efficacy category (Setyawan, 2019).

**Figure 5.** Score Graph of Student Discipline Attitude and Responsibility

Based on [Figure 5](#), the frequency distribution shows the pattern of data for the caution variable, which includes aspects of discipline and pupil responsibility in completing tasks. The average score on this variable was 16.76, with a standard deviation of 1.878, indicating that scholars' maturity is at a reasonably high level of discipline and responsibility and is relatively invariant. The frequency distribution shows that most scholars have scores between 15 and 20, indicating that their caution is relatively high. Some individuals have lower scores below 10, reflecting variations in the position of discipline and responsibility. The graph also shows that the distribution of data tends to be centred around average scores, which can be interpreted as the maturity of scholars having harmonious patterns of geste in terms of caution.

The relatively slight standard deviation (1.878) indicates that the data are not very dispersed, suggesting that most scholars have fairly consistent character in terms of discipline and responsibility. These results show that scholars' prudence in the environment of discipline and responsibility is at a pretty good position. The results of the exploration analysis show that the average position of scholars' work-readiness scores is in the low range (33), indicating that they are not ready to enter the world of work and contend in the encyclopedic domain ([Jafri et al., 2024](#)). The donation of learning achievement, K3 knowledge, and practical experience together to job readiness is 21.5. The Industrial Work Practices experience is vitally important for supporting scholars' work-readiness, as it offers numerous benefits ([Puspitasari & Bahtiar, 2022](#)).



[Figure 6](#). Student Toughness Scale Score Graph

Based on [Figure 6](#), the frequency distribution shows that students' perseverance and persistence in facing academic challenges are relatively high. The graph shows the data distribution, with a mean of 29.09 and a standard deviation of 3.209, indicating that the majority of students have scores in a relatively centralised range around the average. Visually, the graph shows a near-normal distribution, with the highest frequency between 25 and 35, indicating that most students have a stable level of resilience in completing assignments and overcoming academic obstacles. Few individuals have a score below 20, which suggests that a small percentage of students may have difficulty maintaining perseverance and persistence in the learning process. The distribution of the data also showed that the variation in scores was not very large, as indicated by the relatively small standard deviation (3.209). This indicates that students have a fairly uniform pattern of resilience, with little difference between individuals in terms of academic fighting power. These results suggest that the majority of students exhibit strong perseverance and high resilience in the face of educational challenges, with a small percentage requiring additional interventions to improve their resilience. Students must have high motivation to achieve the desired goals ([Miftahuddin & Muhammad, 2023](#)).

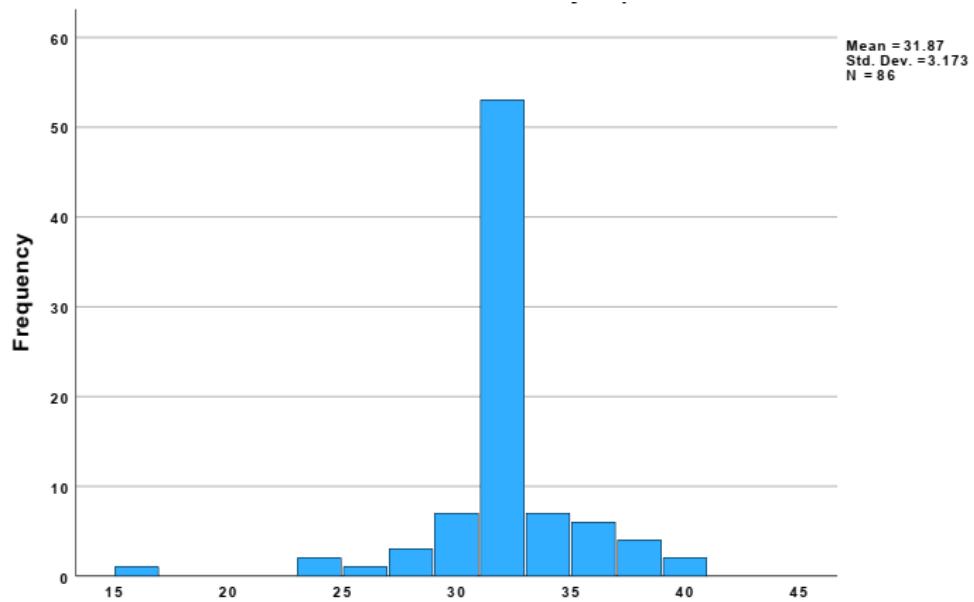


Figure 7. Students' Self-Efficacy Attitude Scores

Based on Figure 7, the frequency distribution shows the pattern of students' confidence in their abilities (Self-efficacy). From the analysis, the mean (Mean) was 31.87, the standard deviation (Std. Dev) was 3.173, and the sample size (N) was 86. The distribution graph indicates that most learners have moderate to high self-confidence, with peak frequencies between 30 and 35. This aligns with findings that show students generally exhibit strong self-efficacy, reflecting confidence in facing academic tasks and completing assignments effectively. Self-efficacy, as conceptualised by [Bandura \(1997\)](#), is not an isolated trait but is closely intertwined with the teaching approaches students experience. Instructional methods that foster autonomy, intrinsic motivation, and learner ownership, such as project-based learning, guided inquiry, and differentiated instruction, are shown to enhance students' belief in their capabilities, thus reinforcing both academic and vocational readiness.

In vocational settings, learning experiences that simulate real-world applications, such as artificial work practices, not only develop domain-specific skills but also cultivate adaptive behaviours and professional confidence ([Surya et al., 2023](#)). Educators play a pivotal role in shaping these outcomes as highlighted by [Dewi et al., \(2024\)](#), the role of instructors (often serving as industry facilitators or tutoring manufacturers) significantly influences students' preparation for the workforce. This implies that instructional design should go beyond the delivery of content and actively integrate practices that stimulate student autonomy, mastery experiences, and goal setting – all core contributors to self-efficacy. Moreover, studies emphasise the synergistic impact of work-based learning and students' interests on job readiness ([Wahyuni et al., 2021](#)), underscoring the need for responsive pedagogical frameworks. These frameworks must balance structured guidance with opportunities for self-directed exploration, enabling students to internalise their learning journey and emerge not only competent but mentally prepared to meet workplace expectations. Highlight the importance of self-awareness and self-confidence in improving learning outcomes by increasing academic motivation. This research contributes to the theoretical understanding of the psychological factors that influence learning achievement and has practical implications for the development of educational interventions ([Kurniasih et al., 2025](#)).

Table 5. CPS Test Results

		N	%
Cases	Valid	84	97.7
	Exclude ^a	2	2.3
	Total	86	100.0

a. Listwise deletion based on all variables in the procedure

Based on [Table 5](#) of the Case Processing Summary test results, as many as 97.7% of the data were considered valid for analysis. In comparison, 2.3% of the data were excluded due to noncompliance with the processing criteria (listwise deletion). The data used in the study were highly complete, with only a small amount excluded. Listwise deletion means that if a variable is missing for a case, the entire case is removed from the analysis, leaving only fully complete cases for further analysis. The total number of samples is 86 students; the high data validity (97.7%) ensures that statistical analysis can be carried out with optimal accuracy. However, there are 2 deletions, which may be concerning if the amount of deleted data increases in other analyses.

Discussion

The development of vocational students' work-readiness is shaped by a constellation of interconnected psychological, instructional, and environmental factors, most notably self-efficacy, emotional intelligence, anxiety regulation, and resilience. Research indicates that structured career guidance and counselling programs account for approximately 32.26% of the variance in work readiness among vocational high school students ([Arif et al., 2023](#)). These programs enhance students' occupational orientation while fostering career maturity. At the individual level, self-efficacy consistently emerges as a critical psychological predictor, encouraging students to believe in their ability to succeed, take ownership of their learning, and remain persistent in the face of academic or technical challenges ([Itryah & Anggraini, 2022](#); [Puspitasari & Bahtiar, 2022](#)). The current study's Cronbach's Alpha score of 0.936 further confirms high internal consistency in assessing the discipline, responsibility, and intrinsic motivation character traits, which are essential to entrepreneurial initiative and adaptability in dynamic work environments ([Sulaiman et al., 2022](#)).

Despite these promising insights, vocational students' readiness is not evenly distributed across populations. While many demonstrate high levels of self-efficacy, others remain vulnerable, particularly those struggling with stress management and lacking autonomy in career-related decision-making, as is often noted among female students ([Hidayati, 2023](#)). Emotional intelligence (EI) plays a vital role in this regard. Components such as self-awareness, self-regulation, empathy, and social motivation equip students to navigate interpersonal dynamics, mitigate performance anxiety, and maintain composure under pressure. Students with higher EI tend to transition more smoothly into new workplace settings, forming productive networks and sustaining professional relationships that contribute to long-term employability ([Ocampo et al., 2022](#); [Miftahuddin & Robani, 2023](#)).

Psychological resilience and mental readiness are indispensable for maintaining productivity under real-world demands. Students exposed to authentic industrial work practices who also demonstrate high self-efficacy exhibit significantly better job-readiness outcomes, accounting for as much as 46.4% of the variance in some cases ([Neswari & Dwijayanti, 2022](#)). Resilience empowers learners to recover from setbacks and persist through uncertainty, while anxiety regulation supports task focus and performance stability. These soft traits are often developed through iterative exposure to challenges and responsibilities, including internships and school-industry collaborations. Meanwhile, psychological constructs such as internal locus of control and future time orientation are positively associated with self-directed career planning, thereby strengthening the ability to forecast, strategise, and invest in long-term goals ([Muna et al., 2022](#)).

Several hindrances continue to undermine students' full potential. Emotional dysregulation, such as excessive self-doubt or avoidance behaviours, can erode confidence and delay progress. Additionally, overreliance on parents or guardians for career direction diminishes autonomy, especially in contexts where cultural norms may prioritise obedience over initiative ([Hidayati, 2023](#); [Yalcin et al., 2021](#)). Interventions should therefore adopt a holistic approach that combines psychosocial support, practical experience, and scaffolded decision-making skills. By empowering students with both technical competency and psychological flexibility, vocational institutions can foster work-ready graduates who are not only skilled but also self-aware, future-focused, and resilient in navigating the evolving demands of the labour market.

CONCLUSION

Based on the findings, it can be concluded that students of Vocational High School Students 1 Lingsar majoring in Engineering Technology exhibit a generally high level of mental readiness, particularly in confidence, perseverance, and self-efficacy, which are essential for preparing them for industrial work placements. Most students show strong internal psychological assets, with high average scores in grit and self-efficacy, indicating their capacity to face academic and career challenges effectively. Teacher support and school guidance play a significant role in fostering this readiness, although limitations in technical skills and prior industry exposure remain challenges for some students. These results suggest the need for vocational education to integrate practice-oriented instructional models, such as immersive internship experiences, workplace simulations, and project-based assignments, to strengthen both technical competence and mental preparedness. Furthermore, schools should implement dedicated soft skills modules focusing on persistence, emotional regulation, and goal-setting strategies, complemented by personalised mentoring programs to support students with lower self-efficacy. At the policy level, mental readiness indicators should be included alongside cognitive and technical assessments to ensure a holistic approach to student development. By systematically embedding these strategies, vocational education can move beyond skill delivery to cultivate graduates who are adaptive, resilient, and workforce-ready.

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