The Twin Tower: Integrating Soft Skill and Hard Skill of Generation Z Through Vocational Curricullum Development

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ABSTRACT

This study aims to identify the skill gap between the competencies of Generation Z and the needs of the industry, especially in the hospitality sector. Through systematic literature review and semi structured in-depth interviews with five managers of global hotel companies, this study employed thematic analysis. The study found that although Generation Z has relatively mastered technical skills (hard skills), they still have difficulty in understanding and implementing standard operating procedures (SOP) consistently and completely. On the other hand, soft skills such as communication, initiative, work motivation, and the ability to build relationships with customers are also still relatively low. This gap is a major challenge in increasing the employability of vocational high school graduates as Generation Z in the digital era and Industry 4.0. Therefore, the development of vocational high school curriculum needs to be carried out holistically by integrating project-based learning, problem-solving, and instilling the values of empathy, responsibility, and digital literacy. Close collaboration between the world of education and industry is the key to creating graduates who are adaptive, professional, and ready to face changes in the world of the tourism and hospitality industry.

1. INTRODUCTION

Change is the only constant in the hospitality industry. The industry is projected to continue its growth into 2025, driven by the increasing number of Generation Alpha travelers, the growth of the wellness market, the increasing popularity of workation due to the remote working trend, and the increasing demand for transformational travel experiences from travelers across generations (Aksoy et al., 2022). The sector is expected to continue to experience significant transformation consistently into 2025 and beyond (World Travel & Tourism Council, 2023). This condition requires the tourism workforce to have a high readiness to adapt to change, both in terms of technical and non-technical skills (Seyitoğlu et al., 2023).

The hospitality sector is currently positioning itself as a career destination that not only promises economic stability but also offers opportunities for self-development and professional development. Therefore, the upskilling and reskilling processes are critical as a strategy to strengthen workforce competency. Upskilling refers to improving existing skills to meet evolving job requirements (Purwanto et al, 2024). It helps employees adapt to new technologies, service standards, and guest expectations without changing their job roles. On the other hand, reskilling teaches individuals entirely new skills that can empower them to shift into various jobs within the firm. This is critical when business structures transform and certain jobs become obsolete (Tian, 2024). Both processes require integration between hard skills—such as operational, technological, and procedural abilities—and soft skills—such as communication, leadership, teamwork, and problem-solving. These two skills are determining factors for success in facing the challenges of a dynamic industry (ILO, 2022; Cambridge & Ghosh, 2020).

This study is guided by the 21st Century Skills Framework developed by the Partnership for 21st Century Learning (P21), which emphasizes the importance of a comprehensive and integrated skill set essential for success in today's complex and fast-changing world. The framework groups essential competencies into three broad categories: (1) Life and Career Skills—which include flexibility, adaptability, initiative, social and cross-cultural skills, productivity, and leadership; (2) Learning and Innovation Skills—often referred to as the "4Cs": critical thinking, communication, collaboration, and creativity; and (3) Information, Media, and Technology Skills—reflecting the increasing importance of digital literacy in the modern workplace. These skills are designed to complement core academic knowledge and are essential for developing well-rounded individuals who can adapt to various professional environments.

In the context of the hospitality industry, this framework is particularly relevant as it addresses both technical competencies (e.g., digital literacy, procedural knowledge) and non-technical skills (e.g., interpersonal

communication, problem-solving) that are increasingly demanded by employers. Furthermore, the framework aligns well with the characteristics and learning preferences of Generation Z, who are digital natives, accustomed to fast-paced, tech-driven environments, and often value meaningful work, collaboration, and continuous learning. The study aims to holistically assess the readiness of vocational students in Bali to meet the evolving needs of the tourism and hospitality sector.

However, previous studies have been constrained in their ability to thoroughly examine the skill gap, particularly within the context of Generation Z (e.g., digital native or preference for experiential learning). Thus far, prior research studies have been lacking, emphasizing solely a singular kind of skill, either soft or hard skills, without considering the distinctive qualities of Generation Z, who were born and raised in the digital and globalization period (Grobbelaar & Verma, 2024). This generation has different values, expectations, and learning styles than previous generations (Schroth, 2019; Tapscott, 2021). Moreover, limited attention has been paid to how these gaps manifest at the vocational education level, especially within Vocational High Schools (Sekolah Menengah Kejuruan or SMK) in regions like Bali, which plays a vital role in supplying future professionals for the hospitality sector (Putra & Ariani, 2021).

In addition to the generational dimension, disparities in access to skill development opportunities remain a pressing concern. Differences in gender, socioeconomic status, and school location (urban vs. rural) may significantly affect students' ability to acquire both hard and soft skills. For instance, students from lower-income backgrounds or rural schools may face limited access to industry exposure, digital infrastructure, or quality training resources, which can widen the skill gap compared to their more privileged peers. Similarly, gender-based expectations and stereotypes may influence students' career aspirations and engagement in certain skill areas, particularly in traditionally male- or female-dominated roles within the hospitality sector. Addressing these disparities is essential for ensuring equitable workforce readiness and for shaping inclusive vocational education policies that do not leave certain groups behind.

This study aims to fill a gap by examining the link between soft skills and hard skills as indicated in the most recent scientific literature. Furthermore, this study intends to dive deeper into the kind of skill gap that exists among Generation Z vocational high school students in Bali, as one of the future workforce populations in the hospitality industry. A holistic understanding of the skills needed by Generation Z will provide an important contribution to the competency development planning process in the vocational education environment. The results of this study are expected to provide practical recommendations that are beneficial in developing adaptive and contextual curricula in vocational high schools, especially in Bali. This study also encourages the implementation of the link and match program between between educational institutions and the tourism industry, which has so far experienced a mismatch in competency alignment. The strong alliances between these two entities are an important milestone in preparing Generation Z with relevant and ready-to-use skills in the workplace, especially in tourism and hospitality industry.

2. METHODS

This study follows a qualitative approach. The collection of data is performed in two phases. The initial phase involves data collection incorporating systematic literature review approaches such as Publish or Perish and VOSviewer software. The keywords used encompass "soft skills" or "hard skills." From this phase, 992 articles were obtained from reputable journal databases indexed in Scopus, Web of Science, EBSCO, Copernicus, DOAJ, and SINTA, with a publication year range from 1979 to 2025 and an average citation per year of 196,62. Furthermore, data visualization was carried out using VOSviewer to identify intercorrelations between the keywords that were established. The results of this visualization show the strength of the link between the keywords used to identify relevant keyword clusters. These data revealed information on research gaps that have not been widely examined, which is the primary subject of the present study. In the second phase, semi-structured in-depth interviews were conducted with five managers of five-star hotels in Bali representing five major international chain hotels, namely Marriott International, Hilton, Hyatt, Accor Group, and InterContinental Hotels Group. The inclusion criteria for selecting informants were: a) minimum of two years of managerial experience in the hospitality industry, 2) direct involvement in staff recruitment or training and development processes, and 3) representation of internationally recognized hotel brands operating in Bali.

The interview guide was developed based on the findings of the literature review and included questions on perceived skill gaps among entry-level workers, expectations for future competencies, integration of soft and hard skills, and perspectives on Generation Z's workplace readiness. The samples of interview questions were: "based on your experience, what common skill gaps do you observe among new or entry-level employees, particularly from Generation Z?", "what are the strengths and challenges of Generation Z in adapting to hospitality workplace demands?", and "have you noticed any changes in skill requirements in recent years?". The interviews were conducted face-to-face and lasted between 45–60 minutes each. To ensure validity and reliability, data triangulation was conducted by cross-referencing literature review findings with interview data.

The interview data were transcribed verbatim and analyzed using thematic analysis, which involves six steps: familiarization with the data, initial coding, searching for themes, reviewing themes, defining and naming themes, and producing the report. This analytical approach enabled the identification of core themes relevant to the integration of soft and hard skills, generational differences, and implications for vocational education. The interview transcripts were then analyzed using thematic analysis techniques to discover the main themes that emerged in each interview. Thematic analysis is a qualitative analysis method used to identify, analyze, and interpret important meaning patterns (themes) in qualitative data. This process is carried out systematically through the stages of coding, theme search, review, and defining themes that are relevant to the focus of the research. Theconceptual framework of the study is presented in Figure 1.
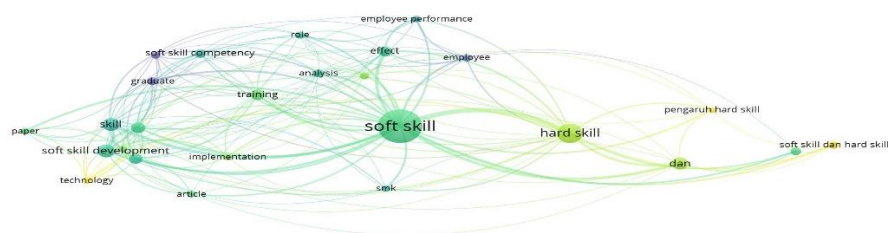
Figure 1
Conceptual Framework
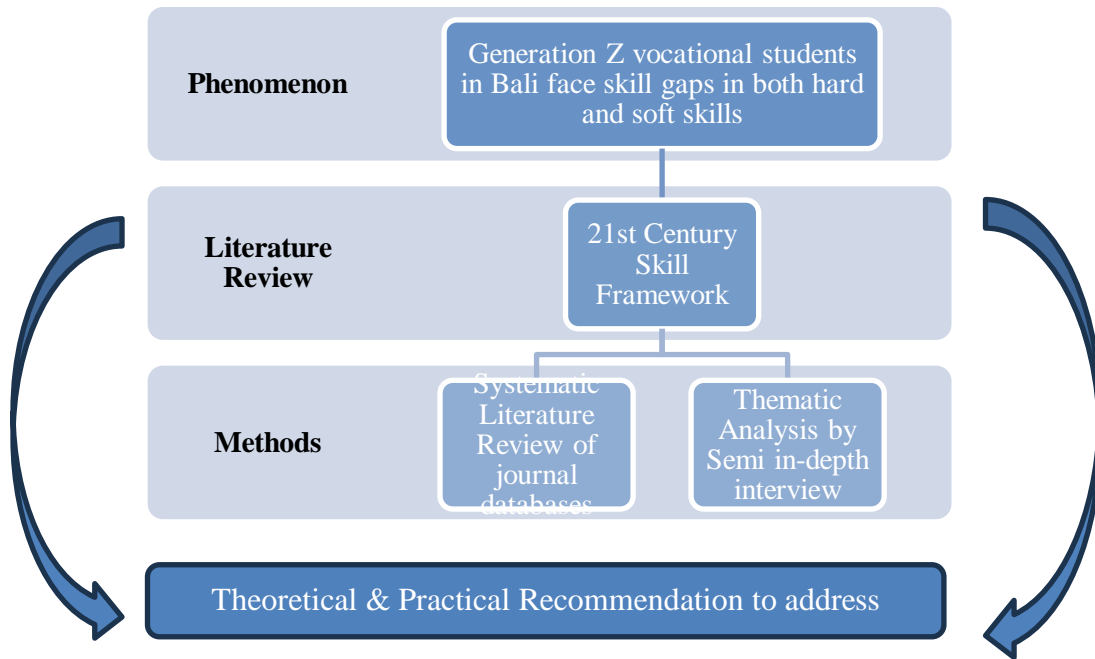
3. RESULTS AND DISCUSSION

3.1. Results

The results of previous literature mapping on soft skills and hard skills show several keywords that are interconnected and often appear together in various studies, known as co-occurrence. Through the analysis of these keywords, the relationship between one concept and another can be traced, thus forming a network or literature map that describes thematic relationships between studies. In addition, this analysis also makes it possible to identify the novelty or trend of the emergence of certain topics based on their publication period. Visual information which is the basis for understanding the direction and contribution of research in this field can be seen from Figure 2.

Figure 2
Visualisation of Literature Mapping applying "Hard Skill" and "Soft Skill"Keywords

Source: VosViewer Software (2025)

Based on Figure 2, it can be seen that the topic of soft skills is more dominant in the literature compared to hard skills. However, both types of skills—both hard skills and soft skills—are often associated with several other key concepts, such as competence, employee performance, training, and organization. This relationship appears both partially and simultaneously, reflecting the importance of both types of skills in the context of human resource development and organizational performance. In the literature map network, it can be seen that the integration between soft skills and hard skills is a relatively new finding. This shows that collaboration between these two skill domains is getting more attention and is considered important as a holistic approach that complements each other. In addition, the relationship between skills and the "technology" aspect also appears as a topic that has emerged recently, marked by light-colored nodes in the map. This finding indicates that advances in information technology drive the need for mastery of skills that are relevant to technology, thus becoming a new focus in developing the competencies of today's workforce.

Figure 3
Literature Density of "Hard Skill" and "Soft Skill"

Source: VosViewer Software (2025)

Figure 3 illustrates the density of research related to soft skills and hard skills. The picture shows that research on soft skills are more prevalent than those on hard skills. This dominance is relevant, especially in the context of the hospitality industry, where soft skills play a crucial role as a differentiating factor in providing services to guests. A soft skill-based approach allows for a more personal, emotional, and authentic service experience, making it difficult for competitors to imitate. However, in facing the dynamics of the era marked by technological advances such as artificial intelligence, cloud computing, and the internet of things, technical skills, or hard skills, cannot be overlooked. As technology integrates into practically every element of human life and the industrial sector, technical competence becomes increasingly vital. Furthermore, constantly expanding digital literacy skills necessitate ongoing skill updates, since existing skills rapidly grow obsolete. As a result, maintaining a balance between acquiring soft and hard skills is critical for the workforce's ability to adapt and remain relevant in today's digital age.

In addition to determining the strength of the link between keywords, a cluster analysis was carried out during literature mapping. The findings revealed four distinct groups, as indicated in Table 1.

Table 1
Cluster Analysis

No	Cluster	Keywords
1	The effect of employee performance	Analysis, effect, employee, employee performance, graduate, importance, performance, role, softskill competency, training
2	Skills development in higher education	Article, development, education, higher education, implementation, paper, skill, soft skill development, technology
3	Integration of soft and hardskill	Hard skill, hard skill and soft skill, effect of hard skill, soft skill, soft skill and hard skill
4	Underexplored theme	Vocational senior high school

Source: VosViewer Software (2025)

Based on the results of the cluster analysis visualized in the figure, there are four main groups (clusters) that describe the focus of studies in the literature related to soft skills and hard skills. The first cluster includes keywords such as analysis, effect, employee, employee performance, graduate, importance, performance, role, soft skill competency, and training. This group shows that many studies focus on analyzing the influence of soft skill competency on employee performance, both at the graduate level and in the work environment, as well as the importance of training in developing these skills. The second cluster contains keywords such as article, development, education, higher education, implementation, paper, skill, soft skill development, and technology. This indicates that most other studies focus more on the development of soft skills in the context of higher education, as well as their implementation in the curriculum and their relationship to technological developments. The third cluster consists of keywords such as hard skill, hard skill and soft skill, effect of hard skill, soft skill, and soft skill and hard skill. This group highlights studies that directly discuss the relationship between hard skills and soft skills, including the effects of each or a combination of both on various aspects, such as competence and work readiness.

Meanwhile, the fourth cluster only includes one keyword, namely vocational senior high school. This indicates that there is a special focus, although still limited, on the context of vocational high schools, which is most likely related to the formation of early skills to enter the world of work. The emergence of vocational senior high school as a stand-alone keyword in cluster analysis indicates that academic studies related to the integration and strengthening of soft skills and hard skills in vocational schools are still lacking in depth and systematic exploration. This opens up great opportunities for further research in this area.

Thus, the second part of the current study was carried out to investigate the linkages between soft and hard skills in vocational senior high school, in addition to discovering any skills gaps that may arise. This step concluded with semi structured in-depth interviews with five managers from five global company brands, including Marriott multinational, Hilton, Hyatt, Accor Group, and InterContinental Hotels Group. Thematic analysis and more detailed explanations are presented in the discussion section.

3.2. Discussion

Thematic analysis conducted on the available literature and data found several keywords that consistently and repeatedly emerged, which can be grouped as major themes. These themes represent important aspects that need serious attention in developing a curriculum that is in line with industry needs (Figure 3). These keywords show emerging research and practice trends and reflect the expectations of the world of work towards vocational education graduates. Among the keywords that emerged were "competence," "employee performance," "training," "technology," "communication," and "soft skill and hard skill development." Each of these keywords forms a network of interrelated meanings, thus showing the urgency to design a curriculum that is integrative, adaptive, and contextual. These findings will be explained more comprehensively in the discussion section, which outlines how each of these major themes contributes to the design of a curriculum that is not only relevant to current industry needs but also able to prepare students to face future challenges.

Figure 4
Curriculum Development Plan of Vocational Senior Highschool in Bali
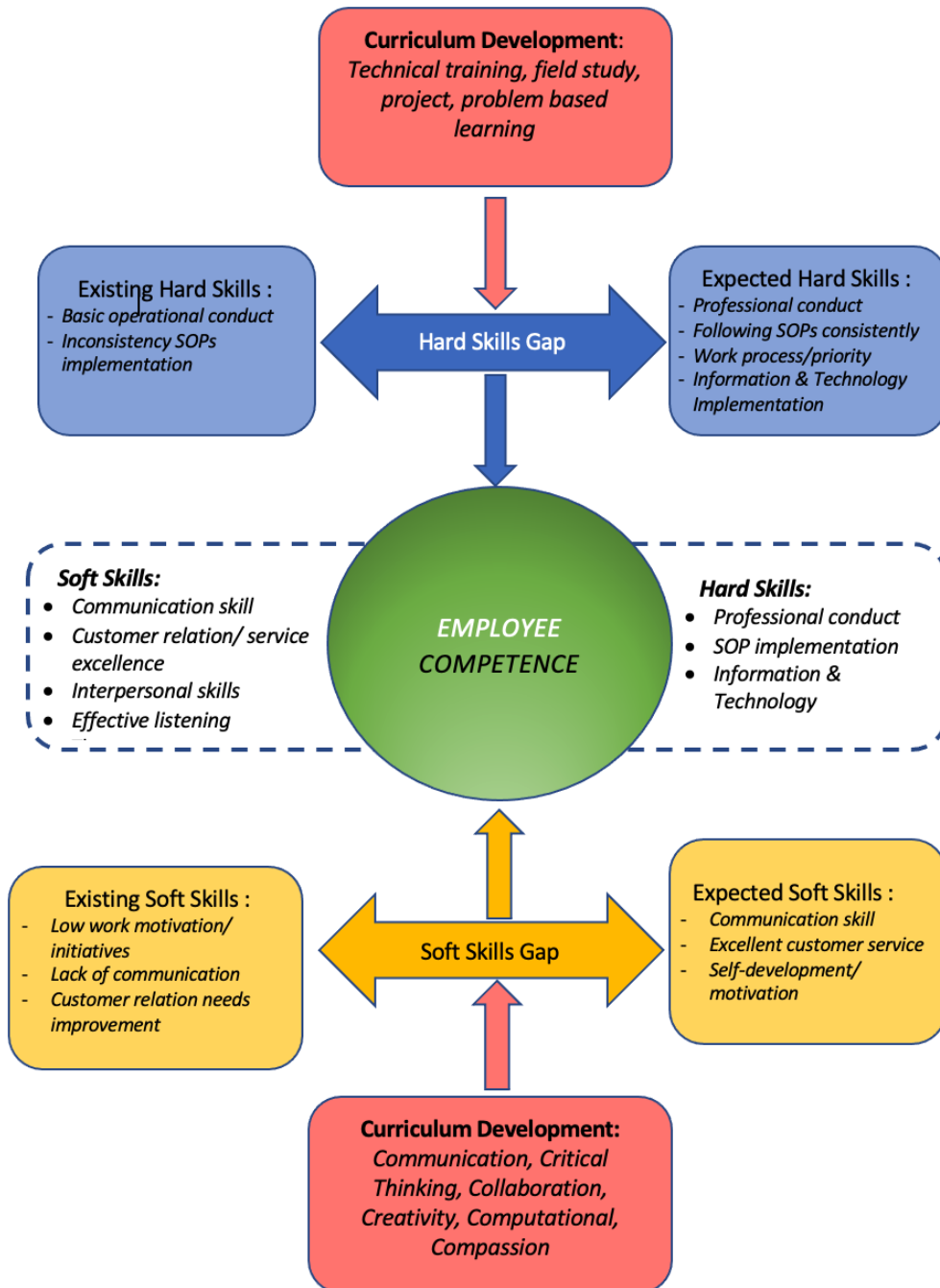
Source: Author's construction (2025)

Figure 4 presents a framework for analyzing employee competency gaps based on two main domains, namely hard skills and soft skills, which are important components in developing workforce competencies. This diagram illustrates that there is an actual dissimilarity between existing skills and expected skills, both in technical (hard skills) and non-technical (soft skills) aspects.

Hard Skill Gap

The findings of this study reveal that in terms of hard skills, there are still various fundamental problems faced by employees, especially the younger generation such as Gen Z, in the hospitality sector. One of the main issues that arises is the lack of comprehensive understanding of Standard Operating Procedures (SOP). Employees tend to comprehend SOPs partially, so when confronted with circumstances beyond regular operating practices, they frequently feel overwhelmed and perplexed about taking the appropriate response. This problem is aggravated

by deviations or inconsistencies in the implementation of SOPs, which eventually contribute to an inadequate level of professionalism at work.

Observations and conversations with hotel management have also revealed that staff operational skills remain restricted to basic activities, without being complemented by a structured concept of work and the capacity to apply SOPs in an efficient and adaptable manner. The demands for hard skills competencies in today's work environment are becoming more complicated (Gounaris et al., 2025). Employees must exhibit not just professional demeanor and technical abilities, but also the capacity to consistently apply SOPs, a thorough awareness of work flows and priorities, and a high level of technology literacy. The fast growth of information technology needs employees, particularly vocational high school students attending on-the-job training programs, to have digital skills coupled with reasoning skills (reasons exist behind each action or protocol) (Innerhofer et al., 2024).

Although generation Z is known as digital natives or tech savvy, their digital skills cannot stand alone without being supported by critical and systematic logical thinking (Başer et al., 2025; Parvez et al., 2022). One concrete example is found in the implementation of SOPs related to the provision of room amenities in star-rated hotels. The SOP states that standard rooms must be equipped with two toothbrushes every day. However, vocational high school students undergoing work experience tend to carry out this order literally without considering the context of use. When guests do not use the toothbrushes provided, trainees still replace them every day according to procedure, without considering the actual needs of the guests. As a result, there is a pile of goods in the room which not only causes waste but also shows the trainee's lack of understanding of the essence of the SOP.

This case is a real illustration of the hard skills gap that still occurs among the younger generation in the hospitality industry. Therefore, the development of vocational education curriculum, especially at the vocational high school level, needs to emphasize the integration of conceptual understanding with technical practice, as well as digital literacy training accompanied by critical reasoning (Silitonga, 2021). Technical skills must be accompanied by the context of their use so that students do not only carry out work mechanically, but also understand the reasons behind each procedure and are able to adapt to operational dynamics in the real world of work.

Soft Skill Gap

In the context of vocational education, especially in Vocational High Schools (SMK), the main orientation of the curriculum is to prepare graduates who are ready to work with a strong emphasis on mastering hard skills. However, the dynamics of the modern working world reveal that mastery of soft skills plays an equally essential part in determining a person's success in a professional context. Based on the results of the study, a significant gap (soft skill gap) was found between industry expectations and the actual conditions of vocational high school graduates entering the world of work, especially in the hospitality and tourism sectors.

The main problems in the soft skills aspect include low work motivation, lack of initiative, limitations in communication skills, and minimal ability to build positive relationships with customers. This condition shows that many vocational high school graduates are not mentally and socially ready to face complex and dynamic work demands (Singh & Hassan, 2024). In fact, the industry has high expectations that employees will have adequate soft skills, especially in terms of effective communication, excellent service, and the drive to continue to develop themselves and be motivated to work independently (Papageorgiou et al., 2024).

There are four main areas in this gap: work motivation and initiative, communication skills, interpersonal skills, and attitudes towards customer service. In terms of work motivation and initiative, it was found that many vocational high school graduates tend to be passive, less proactive for instructions, and showing little enthusiasm for learning new things or taking on responsibilities outside their routine tasks. This is a significant challenge in the highly evolving hospitality business, which necessitates a prompt and proactive response to guest demands (Ngcobo et al., 2022; Indrayani et al., 2023).

Communication skills are a major issue. Vocational high school graduates often have difficulty conveying information clearly, politely, and in context, both verbally and non-verbally. They tend to be hesitant, not confident in communicating with foreign guests, and have not been able to build warm and professional interactions. This is in stark contrast to industry expectations that emphasize the importance of effective communication as the foundation of customer service (Morrone et al., 2024; Sakdiyakorn et al., 2021). In terms of interpersonal skills, vocational high school graduates show limitations in working together in teams, resolving conflicts constructively, and understanding other people's emotions (empathy). The lack of training or experience in dealing with complex social situations in the workplace makes it difficult for them to adapt and build healthy and productive working relationships.

Attitudes towards customer service are also a major concern. Many graduates show a shallow understanding of the meaning of "excellent service". They are still fixated on standard procedures without understanding the essence of the service itself, such as flexibility, friendliness, and initiative to meet guest needs personally. This can be seen from the lack of empathy or responsiveness in responding to complaints or special requests from guests. In practice, failure to build good communication not only impacts interpersonal relationships in the workplace, but

also directly affects the quality of service to customers (Aksoy et al., 2022; A. Y. Huang et al., 2021). The low ability to take the initiative or solve problems independently also shows the weakness of the self-leadership aspect which is very much needed in the modern work environment. In addition, the lack of adaptability and critical thinking skills makes vocational school graduates tend to rely on instructions and are inflexible in dealing with changes or unexpected situations.

Vocational Curricullum Development

To bridge the gap between soft and hard skills, curriculum development at SMK (Vocational High Schools) must be comprehensive and contextualized (Silitonga, 2021).

In terms of hard skills, strengthening technical competencies is a top priority in an effort to bridge the gap between vocational education and industry needs. This reinforcement can be done through several strategic approaches, including technical training based on industry standards, field studies, industry-based projects, and the application of problem-based learning models. Project-based learning, customer service simulations, role plays, collaborative learning, and self-reflection comprise all relevant approaches (A. Huang & Baker, 2021; Zgraggen, 2021). Through technical training, students can gain practical skills that are in accordance with the actual needs of the workplace, such as mastery of operational equipment, application of standard procedures (SOPs), and understanding of work safety protocols. Meanwhile, field studies provide students with direct experience to observe and learn work practices in the industry contextually. This helps them build a deeper understanding of work dynamics and the challenges they may face in the field.

The project-based learning approach that is connected to industry needs allows students to be actively involved in solving real problems that are relevant to their field of expertise. This model not only hones technical skills but also encourages collaboration, creativity, and analytical thinking. On the other hand, problem-based learning places students in problematic situations that require analysis, procedural understanding, and systematic decision-making. This is an important provision for forming generation Z who are not only able to carry out tasks, but are also able to think critically and provide solutions amidst the dynamics of the ever-changing world of work (Seyfi et al., 2024).

Meanwhile, in developing soft skills, the vocational high school curriculum needs to be designed holistically to include an approach that fosters effective communication skills, critical thinking, collaboration, creativity, computational thinking (which includes digital literacy and digital mindset), and compassion. These six skills are known as the 6Cs in 21st Century Skills. These skills are becoming increasingly important in the dynamic work era, where a person's success is not only determined by technical expertise alone, but also by the ability to adapt, innovate, and work synergistically in cross-disciplinary teams (Dutta et al., 2024; Marneros et al., 2020). A curriculum that integrates aspects of soft skills development will not only train students to be able to complete tasks, but also shape character, self-confidence, and mental and emotional readiness to face the challenges of the future world of work. Therefore, a learning approach that emphasizes open dialogue, self-reflection, and team-based project-based learning is highly recommended to encourage students' interpersonal and intrapersonal skills.

In addition to integration in formal learning, strengthening values such as empathy, responsibility, teamwork, work ethics, and a spirit of service also need to be instilled through co-curricular and extra-curricular activities. Activities such as service simulations, role-plays, social services, and leadership training can be a place to form essential social-emotional competencies in the hospitality world. Systematic instillation of these values is expected to produce graduates who are not only technically competent, but also excel in ethics and professional work attitudes that are in accordance with the needs of today's hospitality industry.

Integrating hard skills and soft skills holistically in the vocational high school curriculum is a must to meet the demands of the increasingly complex and dynamic world of work. The curriculum can no longer be separated between technical and non-technical aspects, because in practice, both complement each other and determine the quality of service and professionalism of the workforce (Hussain et al., 2023). Hard skills provide a technical foundation in carrying out tasks, while soft skills are a differentiating factor that creates added value in service interactions, especially in the service industry such as hospitality which relies heavily on customer experience. To realize this integration, active collaboration between educational units and industry is essential, both in designing, implementing, and evaluating the curriculum. The industrial world has a contextual understanding of current and future competency needs, so that it can provide concrete input on learning outcomes that must be developed in schools. In addition, industry involvement can also open up opportunities for more meaningful field work practices, alignment of training materials, and opportunities for direct guidance from professional practitioners. A curriculum that is designed adaptively and based on real needs in the field will increase the competitiveness of generation Z, making them not only ready to work, but also able to adapt, innovate, and make positive contributions to the development of the hospitality services sector in Indonesia.

4. CONCLUSIONS AND SUGGESTIONS

This study confirms that the readiness of vocational high school graduates as potential generation Z workers to enter the workforce still faces significant challenges, especially related to soft skills, which have not yet been fully integrated into the learning process. Although mastery of technical skills (hard skills) is the main focus in vocational education, the needs of the current workforce show that success in the workplace is greatly influenced by interpersonal skills, effective communication, collaboration, and adaptability. Therefore, further research is needed that can map critical areas in the learning process in vocational high schools that do not support the development of soft skills as a whole. Research can also examine innovative learning approaches such as project-based learning, work-based learning, or internships equipped with systematic reflection, which have been proven to integrate hard skills and soft skills in a more balanced way, especially in generation Z context.

Furthermore, research in this field plays an important role in formulating strategies to increase the employability of generation Z, especially in facing the challenges of the digital era, automation, the industrial revolution 4.0, and the transition to society 5.0. In conclusion, addressing the persistent gap in workforce readiness for Generation Z vocational graduates, particularly concerning soft skills, necessitates a multi-pronged approach involving significant policy shifts and strategic actions. For the government, this includes mandating and providing a framework for explicit soft skills integration, allocating dedicated curriculum time and resources, revising national employability standards, incentivizing robust industry partnerships, and investing in relevant teacher professional development. Vocational schools, in turn, should prioritize the implementation of Project-Based Learning with structured reflection, develop integrated and reflective internship programs, offer targeted soft skills workshops, and strategically leverage technology for both development and assessment.

This young generation is not only required to be able to work, but also to think critically, innovate, and adapt in a constantly changing work environment. The findings of this study are expected to be a reference for stakeholders, including education policy makers, to develop a relevant, adaptive, and future-oriented vocational curriculum. A curriculum that not only focuses on technical aspects, but also forms character, builds social skills, and prepares the younger generation to play an active role in the increasingly complex workplace and society.By embracing these recommendations and a collaborative framework, stakeholders can collectively enhance the employability of Generation Z vocational graduates, equipping them with the comprehensive skillset required to thrive in the evolving landscape of the tourism industry and the broader workforce.

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