

A Study on the Cultivation of Vocational Competence in Tourism Major Students in Vocational Colleges

Ge Xinxin^{1,2}, Vincent Wee Eng Kim²

¹Zhejiang Guangsha Vocational and Technical University of Construction, China

²Universiti Tun Abdul Razak (UNIRAZAK), Malaysia

Abstract

This study aims to assess the usefulness of the COMET vocational competence model theory in enhancing vocational skills among tourism major students at Chinese vocational colleges. The investigation, which employs a quantitative research approach, polls 50 students and 50 professionals from Hangzhou, Yantai, Xianyang three vocational colleges. The findings show that participants have a strong theoretical comprehension, with 88% demonstrating Fair/Good or Good/Excellent knowledge. However, there are difficulties in practically applying theoretical information, as 72% evaluate their application as Fair/Good or Good/Excellent, with some expressing difficulties in translating knowledge into practical circumstances. Problem-solving (68%) and teamwork (68%) have moderate to high levels of confidence, whereas leadership and digital competence are ranked lower, at 46% Fair/Good or Good/Excellent. Professional feedback reveals a reasonable familiarity with COMET (70%) and notes issues in curriculum alignment, implying the need for competency-based evaluations and increased industry engagement. The study gives empirical insights into the COMET model's success in theoretical knowledge. Still, it emphasizes improving practical application and specialized action-oriented abilities in tourism education.

Keywords: Higher Vocational Education; The COMET Model; Vocational Competence; Tourism Management Education

1. Introduction

China's growing tourism industry drives the country's economic growth, attracting more than 150 million international visitors annually (Jamshed et al., 2023). The increasing demand for trained personnel in this area emphasizes the necessity of vocational competence. In 2022, China's travel and tourism industry comprised about 62.9 million jobs, constituting roughly 8% of the nation's total employment (Blazyte, 2023). Amid the COVID-19 pandemic, employment within this sector faced challenges. Yet, predictions indicated a potential 18% job growth in 2023, suggesting a positive trajectory for recovery (Blazyte, 2023). However, there is still a significant gap in addressing vocational skills development among tourism major students in Chinese Vocational Colleges, requiring prompt academic attention. The rise of China's tourism industry points to the critical importance of vocational competence in meeting industry expectations. Despite this expansion, there is a clear gap between the skills taught in vocational institutions and the rapidly changing needs of the tourism profession. Studies like Chen, Xu and Zhai (2019) and Li and Pilz

(2023) reveal problems connecting students' capabilities with industry requirements, indicating a persistent need for graduates to improve their vocational competence.

The COMET Vocational Competence Model Theory, known for its complete approach that includes cognitive, emotional, and practical aspects, is still understudied in Chinese vocational colleges, particularly in tourism-related disciplines (Zhang et al., 2022). Hence, the current research gap is evident in its failure to address the special obstacles that tourism major students experience in developing practical competence. There is a distinct scarcity of studies assessing the continuous development of competence among these students within China's diverse vocational college landscape. Also, Chen, Xu and Zhai (2019) underline the importance of long-term perspectives in measuring competence development, which has been mainly overlooked in previous research attempts. Hence, this study aims to objectively assess the usefulness of the COMET vocational competence model theory in developing vocational competence among tourism major students at Chinese Vocational Colleges. The study aims to give empirical evidence on its practical implementation and long-term effectiveness and insights into its potential as a framework for developing vocational competence tailored to the needs of China's thriving tourism industry.

1.1 Research Objectives

The study examines how the implementation of the COMET Vocational Competence Model Theory affects vocational competence among tourism major students in Chinese vocational colleges.

- Evaluate the influence of implementing the COMET Vocational Competence Model Theory on enhancing vocational competence among tourism major students in Chinese vocational colleges.
- Pinpoint specific shortcomings in existing vocational competence development initiatives tailored for tourism major students in Chinese vocational colleges.
- Investigate the sustainability and durability of vocational skills students acquire over an extended period, providing insights into the longevity of competence development.
- Explore the extent of congruence between students' vocational competence and the dynamic demands and evolving trends within the Chinese tourism industry.

1.2 The Significance of the Study

China's tourist industry has grown at an unmatched rate, aided by government initiatives like the Belt and Road Initiative, and contributes significantly to the country's Gross Domestic Product (GDP). Despite this growth, the business faces a recurring challenge: matching the workforce's abilities to the sector's ever-changing demands. The need to develop vocational competence among students in vocational institutions appears as a critical answer for maintaining this growth trajectory. The study aims to strengthen the workforce's preparedness for the dynamic landscape of the tourism industry by addressing the gap between educational curriculum and industry requirements. Improved vocational competence not only increases graduates' employability but also increases the industry's worldwide competitiveness. Also, this research is important because it contributes to the improvement of vocational education and directly impacts the nation's

economic prosperity. The findings of this study have the potential to direct educational policy, change curriculum design, and create strategic collaborations between vocational colleges and the booming tourism sector, resulting in a competent workforce that drives long-term growth and innovation. Additionally, this research underlines the importance of vocational competence in solving workforce difficulties in China's thriving tourism industry. It emphasizes how the findings of this study could result in practical changes in education, labor readiness, and overall industrial competitiveness.

1.2.1 Study Limitations

While this study aims to provide complete insights into developing occupational competence, various constraints may impact the findings. These include data collection biases, regional differences in vocational college frameworks, and timeline limits for analyzing long-term competence growth.

2 Literature Review

2.1 Theoretical Framework

China has an education system pattern of 6-3-3-4. Primary education is six years long, followed by three years of lower-secondary and upper-secondary schooling. Notably, junior secondary vocational education is integrated within the nine-year obligatory school system. On the other hand, the vocational level normally consists of 3 to 4 years of study that includes a mix of general studies and technical skill development. As of 2022, China had 7,201 colleges and vocational institutions with tourism departments, educating over a million students and establishing itself as a global leader in tourism education (Textor, 2023). Despite this expansion, obstacles remain, like the predominance of academic knowledge over practical application and a lack of creative teaching methods, including relatively low graduate employment rates. Nonetheless, China's comprehensive educational infrastructure includes a wide range of disciplines geared to the multifaceted character of the tourism business, including management, economics, geography, languages, and more (Li et al. 2019). Government support through established committees and groups emphasizes the importance of qualified tourism professionals in enhancing the industry's competitiveness. As a result, while the Chinese vocational education system and tourism education sector have grown and diversified, addressing the balance between theoretical teachings and practical applications remains critical for improving graduates' preparedness and employability in the tourism industry.

2.1.1 Vocational Competence Development

According to Salman, Ganie, and Saleem (2020), competence defines a set of knowledge, skills, talents, and personal characteristics that enable a person to perform activities successfully and efficiently within a certain subject or environment. Competence is equally a broad characteristic that includes theoretical knowledge of a subject or field and practical application. Wong (2020) adds that competence extends beyond basic knowledge to the ability to apply that knowledge appropriately to accomplish desired results. Competence includes talents like expertise, problem-solving abilities, flexibility, decision-making abilities, and effective communication within a specific sector or job role. According to Zhang and Wang (2020), vocational competence is a

thorough merger of diverse factors necessary for thriving in the environment of the tourist business. The concept links theoretical academia and practical application in real-world circumstances, promoting students' adaptability to diverse professional environments.

The convincing approach of Zhang and Wang (2020) emphasizes the symbiotic relationship between theoretical understanding and hands-on ability. The developmental model is built on blending theoretical ideas and practical abilities. Also, Rogers et al. (2021) provide that combining skills and theoretical ideas strengthens students' abilities and instils greater adaptability, allowing them to face the dynamic difficulties of the tourism business. Thus, vocational competence serves as a catalyst, transforming individuals into skilled professionals capable of excelling in China's diverse and challenging tourism landscape.

2.1.2 Competencies Required in the Tourism Sector

According to Singh and Jaykumar (2019), customer service abilities directly impact visitor happiness and overall experiences. Providing outstanding customer service is critical in the hospitality industry for attracting and maintaining consumers. Marougkas et al. (2023) add that evaluation methods like simulated situations and customer feedback assessments help determine a student or applicant's customer service ability. Role-playing exercises and service quality measure analysis let students assess their ability to handle a variety of visitor encounters efficiently.

Effective verbal and written communication are important in tourism for effectively presenting information and building relationships with guests, including dealing with varied audiences (Cuic Tankovic et al., 2023). Zhao and Wu (2021) add that educators should evaluate communication and language competency and equally evaluate students' abilities through evaluations like as presentations, language proficiency tests, and written assignments. According to Cuic Tankovic et al. (2023), effective communication assists with marketing, customer service, and providing information about locations or services. Another important skill that students need to be properly trained on is problem-solving and collaboration abilities. Wang and Li (2019) established that problem-solving skills allow for the successful settlement of visitor complaints and obstacles in hospitality operations. Additionally, the collaboration abilities encourage creativity and adaptation in various tourism settings. Further, collaboration promotes a healthy work environment and increases productivity in hospitality. Cuic Tankovic et al. (2023) provide that problem-solving and collaboration abilities can be measured through case studies, group projects, and team-based evaluations to assess students' collaborative problem-solving abilities.

Also, leadership and digital competence help in supervisory roles in the tourism business, as well as in mentoring teams and accomplishing corporate goals. Yang et al. (2020) argue that leadership and digital literacy correspond to industry trends in technology adoption. Hence, the a need to assess leadership potential through exercises, while digital skills are becoming increasingly vital for marketing, guest engagement, and operational efficiency. Also, industry knowledge and technical skills

2.2. Conceptual Framework

2.2.1 COMET Vocational Competence Model Theory

The COMET (Competence Modeling for Effective Training) vocational competence model theory has been used in countries worldwide. The countries implementing COMET, including Germany, China, South Africa, Norway, Switzerland, Poland, and Spain, demonstrated its versatility in assessing and cultivating occupational Competence (Lahn & Nore, 2019). The model, also known as 'competence assessment in education and training' or 'competence-based occupational methodology for effective training,' stresses its usefulness in diagnosing and improving competence outcomes within occupational qualifications (Hellne-Halvorsen, Lahn & Nore, 2021). According to Rauner, Evans, and McLennon's (2021) analysis, COMET vocational competence model theory is a framework for assessing, developing, and improving people's vocational competence. The model adopts a multimodal method that includes behavioral assessment, coaching, and software-driven evaluations in a bid to determine and enhance occupational qualities.

The letter C in the COMET calls for the model users to know and understand the context of the situation. According to Brown and Papier (2023), understanding the context within certain situations and times is important in vocational training. It helps understand the conditions and setting, including environmental elements influencing task performance. The context equally provides an in-depth understanding of how skills are applied in real-world contexts. According to Brown and Papier's (2023) study, the letter O in COMET seeks to answer what outcome the training should have after a given time. Rauner, Evans and McLennon (2021) add that establishing defined objectives allows individuals undertaking vocational training to understand the intended outcomes of their activity. Thus, the outcome encourages goal-oriented behavior and assesses the efficacy of their efforts. Also, the M defines the method, or the strategic approach employed to accomplish the desired result. Hence, understanding the process helps the acquisition of structured problem-solving abilities and the systematic application of knowledge. On the other hand, the E defines the Effect in which the users must evaluate the impact obtained, which clarifies the repercussions of actions made, allowing learners to assess whether the strategy succeeded and what outcomes were obtained. Also, the T is the specific behaviors. Hence, specific behaviors demonstrated in an example or situation are identified to understand individual actions and skill application. Therefore, behavior facilitates competency evaluation by stressing practical actions essential for professional success.

2.2.2 Competence Dimensions

The COMET model distinguishes three critical dimensions of competence: the requirement dimension, the content dimension, and the action dimension (Rauner, Evans & McLennon, 2021). The requirement dimension defines four competence levels: nominal, functional, processual, and holistic shaping. The dimension corresponds to Bybee's proficiency model (Bybee, 1997), assisting in systematically evaluating vocational skills ranging from superficial conceptual knowledge to integrated, problem-solving expertise.

2.2.3 Implementation and Diagnostic Approach

COMET uses a diagnostic technique to assess competency levels across the identified dimensions, employing Likert rating scales with 40 items mapped against eight criteria (Rauner, Gäumann-

Felix, & Hofer, 2021). The methodology stresses practical answers to dynamic workplace scenarios, differing significantly from traditional trade assessments in that it focuses on assessing learners' process-related problem-solving abilities within occupational activities. Rauner (2021) states that COMET's learning environment stresses action-oriented, reality-based problem-solving challenges, promoting the integration of theoretical knowledge and practical talents. Besides, the model combines professional validity in task building, which assures conformity with expert opinion on job descriptions as learners progress from beginner to expert through organized learning activities. Hence, assessing process-related problem-solving abilities within occupational activities is in line with the dynamic character of the tourism industry, stressing real-world applications and problem-solving skills required of tourism major students captured by Rauner, Evans and McLennon (2021). Thus, the method promotes the connection of educational goals with industry expectations, preparing students for the obstacles and needs they will face once they enter.

2.2.4 Impact on Vocational Education and Training (VET) Systems

COMET's use in VET systems research has aided in the transformation of traditional assessment techniques, shifting from discrete, declarative assessments to dynamic, process-oriented evaluations (Rauner, Evans & McLennon, 2021; Brown & Papier, 2023). It has also influenced pedagogical techniques by preparing educators to modify instructional strategies matched with the COMET model's action, content, and requirement components to improve students' learning experiences (Brown & Papier, 2023). Thus, the COMET vocational competence model theory provides a complete framework for assessing and promoting vocational competence and ideas for effective occupational skill measurement and development. The application of COMET in the setting of Chinese vocational colleges has the potential to change vocational education by providing a systematic strategy for assessing and improving the vocational competency of tourism major students. Also, its emphasis on problem-solving, integrating theoretical and practical knowledge, and structured learning challenges bodes well for aligning the educational curriculum with the dynamic demands of China's booming tourism industry.

3 Research Methodology

3.1 Design

The study settled on a quantitative method to objectively assess the impact of implementing the COMET vocational competence model theory on developing vocational competence among tourism students. The design was chosen because it can give quantitative and numerical data for statistical analysis, allowing for a systematic assessment of changes in vocational skill levels (Bragg, Walsh & Heyeres, 2021). Quantitative approaches provide a structured strategy for gathering empirical evidence about the effectiveness of the COMET model in the educational context. Hence, the approach provides an idea of the model's strengths and potential limitations. However, quantitative design has drawbacks. One disadvantage is that quantitative methods may not capture the entire breadth of individual experiences and nuances in developing occupational Competence (Cade, 2023). Thus, to overcome this constraint, additional qualitative methodologies like as interviews could be used to acquire a deeper understanding of students' perceptions and experiences with the COMET model. Besides, while quantitative methods provide statistical precision, they may fail to capture contextual or situational aspects that influence

vocational competence. The study will address this restriction through proper survey design, and including open-ended questions can allow students to comment on their experiences, resulting in better data for analysis.

3.2 Sampling

The sample for this study is drawn from three specific institutions: Vocational and Technical College of Hangzhou, Yantai Vocational School and Vocational and Technical College of Xianyang. The total sample size is 50 students and 50 professionals from these three universities who are all active in tourism-related programs. This selection offers a concentrated and manageable sample while ensuring representation from various geographical areas and academic backgrounds. A stratified random sample technique ensures a fair representation of the three vocational training institutes.

The strategy entails categorizing each school's population (students and professionals) into strata or groups based on certain criteria relevant to the institution. For instance, multiple academic years, departments, or specializations within tourism programs are used in the section. Then, within each stratum, random selection will be used to pick participants, guaranteeing proportional representation from each institution. The method reduces bias and guarantees that the sample sufficiently represents the diversity of the institutions picked.

The selection of these specific vocational training institutes is intended to convey various ideas and experiences in the context of tourism education. Hangzhou, Yantai, and Xianyang represent diverse geographical locations in China, which may result in differences in educational techniques, industry exposure, and cultural influences. The study uses stratified random sampling to collect a well-rounded sample that reflects the area's larger community of tourism major students and professionals. However, the inability to include students from a broader range of universities may restrict the generalizability of findings outside the selected colleges.

3.3 Tools

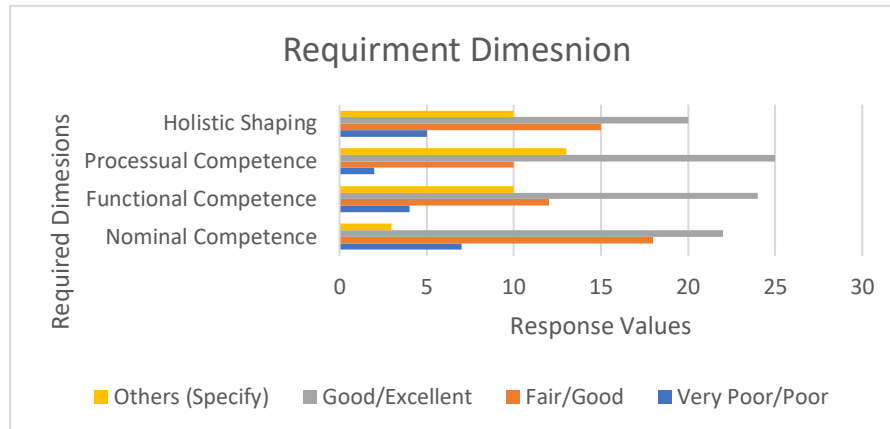
A systematic questionnaire was constructed following the COMET vocational competence model theory and its unique components (requirement, content, and action). The questionnaire's goal is to measure participants' skill levels completely. Questions will be deliberately designed to investigate many aspects of student's competence. The questions are categorized into requirement dimension, content dimension, action dimension and general competence. The structured questionnaire is used and delivered to 50 students and 50 professionals from Hangzhou Vocational & Technical College, Yantai Vocational College, and Xianyang Vocational & Technical College through email.

The message in the email will help participants understand the questionnaire's aim and offer their responses discreetly. Maintaining secrecy creates a climate that encourages open and honest responses, essential for accurate data gathering. For detailed data analysis, Microsoft Excel will be used. Because of its ubiquitous availability and basic analytical capabilities, Excel is an excellent choice for managing the collected data (Schmidt et al., 2020). The software enables efficient data organization, manipulation, and representation, systematically analyzing participants' vocational competence levels.

4 Result and Discussion

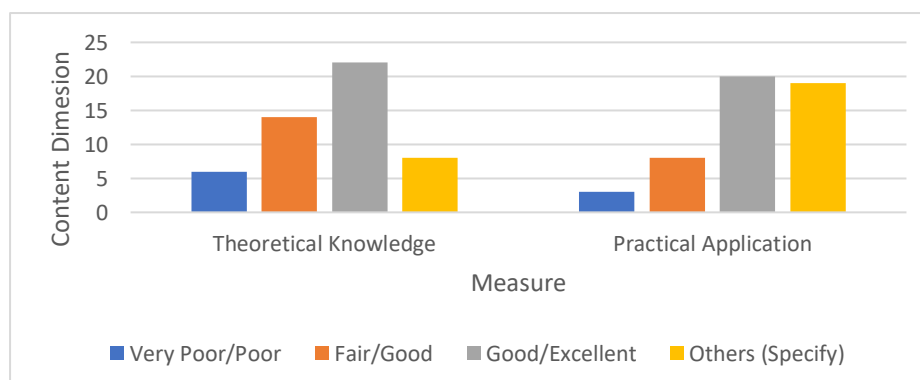
4.1 Theoretical Competence and Application

Figure 1 A clustered bar chart comparing the student's required dimensions (Theoretical concepts)



From the participants' responses, nominal competence, or theoretical knowledge, most participants (44 out of 50) assessed their theoretical knowledge as Fair/Good or Good/Excellent. The response indicates that the questioned group has a relatively high comprehension of theoretical ideas in tourism management. Only seven people said their knowledge was Very Poor/Poor. Students understand the importance of having a solid theoretical foundation in tourism management. The result is further supported by Figure 2 findings that the majority (84%) of the participants have a Fair/Good or Good/Excellent understanding of theoretical frameworks in tourism. Persaud, A. (2021) established a theoretical foundation in an area that enables students to learn industry-specific concepts and frameworks. Hence, the knowledge creates the groundwork for educated decision-making and real-world problem-solving.

Figure 2: A bar chart showing student responses to the content taught in class



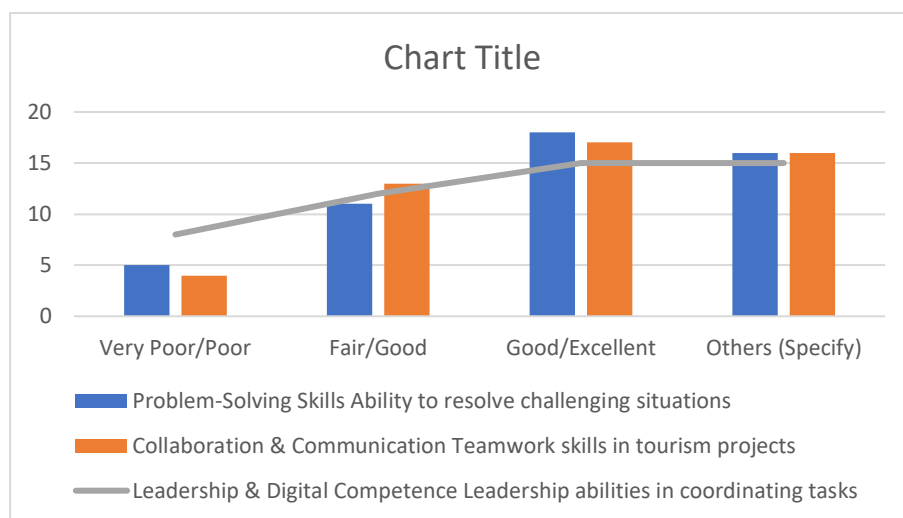
On the functional competence otherwise the application of knowledge to practical issues, 36 out of 50 participants rated their ability to apply theoretical knowledge to practical issues as Good/Excellent or Fair/Good. However, many participants (14) expressed reservations or stated other factors, seemingly indicating difficulties in transferring theoretical understanding into

practical circumstances. Zeidan and Bishnoi's (2020) study supports the findings by acknowledging that bridging the gap between theory and practice gives learners the skills to manage issues and improve solutions, including increasing their employability in the hospitality industry.

On the other hand, processual competence, an analysis of complex information, revealed a stronger bias toward proficiency, with 70% claiming Good/Excellent Competence. However, more participants (26%) mentioned additional factors, implying potential challenges or differing perceptions in dealing with complicated tourism-related information. Additionally, the ability to analyze challenges creates adaptation and resilience, allowing people to negotiate the challenges (Rauner (2021). While the findings show that participants have good opinions of competence, the aspects revealed by the COMET model have major consequences for students aspiring to excel in the hospitality business. The observations indicate the need for a well-rounded education that includes academic comprehension, practical application, and analytical prowess, enabling students to become competent and flexible professionals. Also, for teachers using the COMET model, these characteristics serve as focal points for developing comprehensive teaching techniques to develop vocational competence in students entering the dynamic world of hospitality.

4.2 Action Dimensions

Figure 3: Combined line bar graph shows the action dimensions supported by the COMET model.



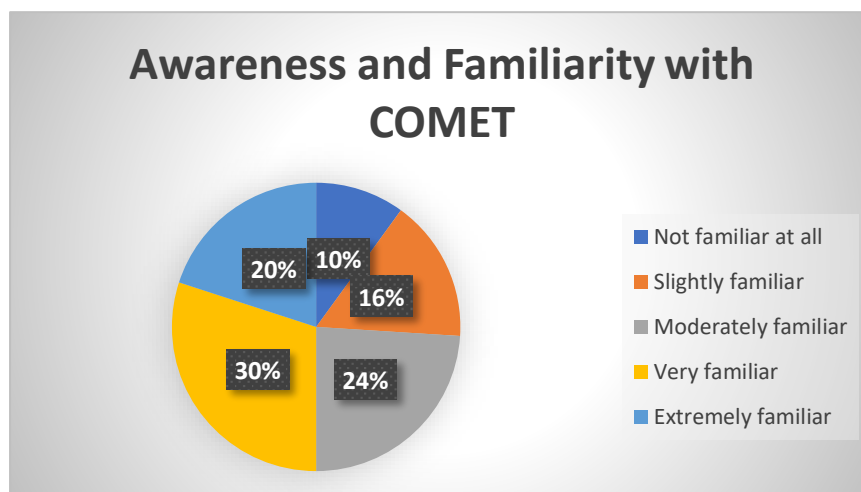
According to Rauner, Evans and McLennon (2021) COMET model insists on the outcome of a teaching process, which is equally evident in the actions the students can take upon training. Hence, on the problem-solving skills question, 68% of students rank their problem-solving skills as Fair/Good or Good/Excellent, indicating a moderate to high level of trust in their capacity to deal with complex problems in the tourism area. However, a significant minority (32%) identifies other considerations, indicating possible areas for improvement or diverse perceptions of what constitutes good problem-solving. Cuic Tankovic, Kapeš and Benazić (2023) also supported that the hospitality industry sometimes experiences many issues and that the employees must have the right problem-solving skills to provide solutions.

On student perception of collaboration and communication, another 68% rate their teamwork and communication abilities as Fair/Good or Good/Excellent. The result indicates a relatively positive attitude toward collaborative ability. However, 32% mention other factors, indicating potential complications or obstacles in collaborating in tourism initiatives. According to Cuic Tankovic et al. (2023), effective communication assists with marketing, customer service, and providing information about locations or services. The participants at one time will be required to pass information or interact with visitors. Hence, efficient communication and collaboration would help tourism workers to navigate the challenging field effectively.

On leadership and digital competence, 46% of the participants were confident in their leadership abilities and digital competence in task coordination, rating themselves as Fair/Good or Good/Excellent. On the other hand, 30% of the participants identified other considerations, showing potential reservations or interpretations of leadership qualities and digital ability. Hence, the findings in Figure 3 imply that institutions could provide specific training or workshops on problem-solving approaches and effective teaming strategies, including leadership development, to prepare their students to excel in the tourism business. On the other hand, the 'Others (Specify)' category indicates areas of worry or differing interpretations in problem-solving, cooperation, and leadership qualities. Addressing the named challenges through focused interventions and personalized instructional techniques can considerably improve students' preparedness for the industry's evolving problems.

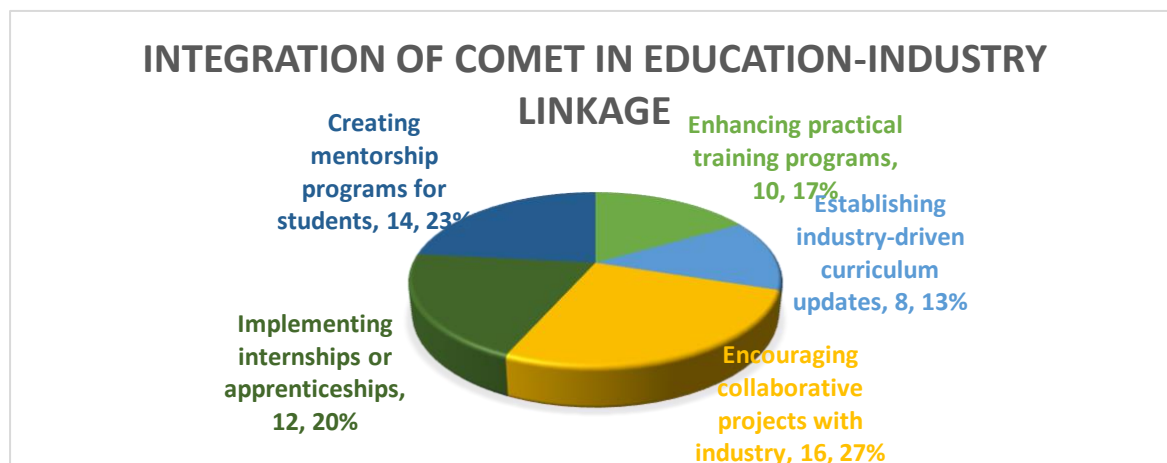
4.2.1 Professional's interaction with COMET

Figure 4 Awareness and Familiarity with COMET



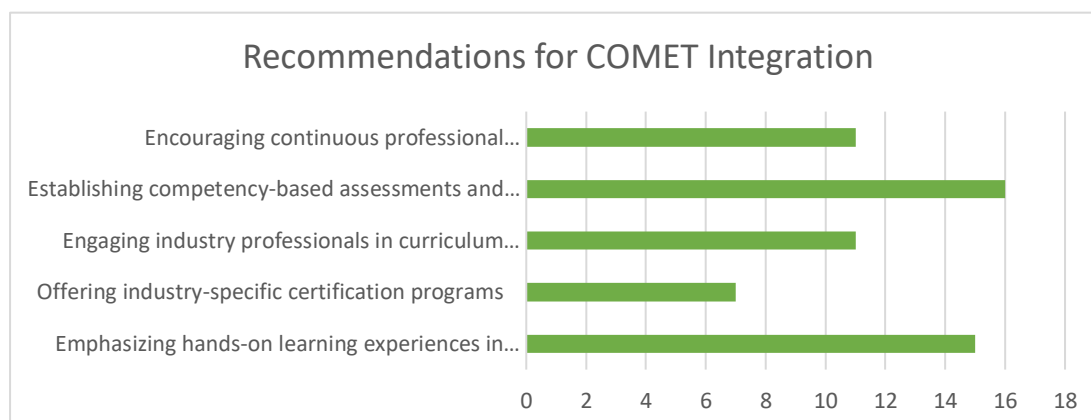
Most respondents (70%) claim that they are moderately familiar or more with the COMET vocational competence concept theory, indicating a reasonably solid comprehension of the concept among industry experts (Figure 4). Also, professionals describe a wide range of experiences, with the majority, 65%, saying that the COMET model has positively impacted vocational competence or performance in the tourist sector regularly or constantly.

Figure 5 Integration of COMET in Education-Industry Linkage



Encouraging collaborative projects with business partners (32%) and creating mentorship programs for students (28%) are the most widely suggested integration strategies, demonstrating a desire for participatory and industry-involved instructional approaches. Also, potential issues identified include difficulty integrating curricula with industry standards (28%) and limited industry involvement and engagement (28%), indicating barriers to education-industry synchronization. Resistance to change in educational practices may prevent the COMET model's acceptance. This resistance is common when shifting from traditional teaching approaches to more innovative and competency-based educational frameworks (Manske, 2021). The result also noted that faculty training on COMET implementation is lacking in most institutions. Inadequate faculty training in understanding and efficiently executing the COMET paradigm could be a hindrance. Adequate training and professional development programs are essential for educators to properly understand and integrate new approaches (Fernández-Batanero et al., 2022). also, 12 professionals pointed out that resource restrictions like financial and technological make such implementations difficult.

Figure 6 Recommendations for COMET Integration



Professionals recommend various strategies, with the highest stress on developing competency-based assessments and evaluations (32%). Prioritizing practical, experiential learning opportunities within coursework accords with the COMET model's basic features, encouraging active learning and skill application (Rauner, Evans & McLennon, 2021). Another 30% recommended hands-on learning experiences in coursework to bridge the gap between theoretical teachings and practical applications in the tourism sector. Also, delivering specific and industry-recognized qualifications, including customized certification programs, can support competency in the tourism industry by increasing graduates' relevance and employability (Liu & Gu, 2019). Also, institutions should include industry experts in curriculum design. Involving industry experts in curricular framework creation guarantees educational programs are linked with industry needs and equally supports students' development of industry-relevant skills (Zhang & Huang, 2018).

5 Conclusion and Recommendation

The study's findings indicated positive perceptions and growth areas across the COMET model's competence aspects. Participants had a strong understanding of academic information but expressed difficulty translating this knowledge to practical applications. The ability to assess challenging tourism-related information showed a relatively good forecast. However, there were hints of potential difficulties interpretations when dealing with complex material. Regarding action dimensions, participants' trust in problem-solving and teamwork skills ranged from moderate to high. However, there were doubts and possible areas for improvement, particularly in leadership abilities and digital competence. Professionals familiar with COMET reported various degrees of familiarity and good effects on vocational competence in the tourist business. However, integration issues arose, like difficulties aligning courses with industry standards, a lack of industry participation, and faculty training gaps on COMET implementation. To bridge the gap between theoretical teachings and practical applications, professionals recommended competency-based assessments, hands-on learning experiences, industry-specific certification programs, and greater involvement of industry experts in curriculum creation. The study also recommends encouraging the practical application of academic information within coursework to bridge the theoretical understanding and practical implementation gap. Also, institutions should use competency-based exams to assess students' readiness for the dynamic demands of the tourist industry.

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