



Mapping Competencies: A Profound Analysis of Semester 1 Cadets at a Premier Maritime Institute

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Abstract. *This academic exploration delves into the nuanced competencies and dynamics shaping the academic journey of Semester 1 cadets at a distinguished Maritime Institute. Focusing on computer literacy, technological proficiency, and sociocultural influences, our qualitative descriptive approach seeks to unveil the intricate dimensions of contemporary maritime education. The assessment of computer literacy reveals varying competencies, urging the need for a tailored curriculum. While basics like office software and digital navigation are strong, disparities in data analysis proficiency call for targeted interventions. The implications highlight the necessity for a stratified curriculum, ensuring a comprehensive skill set in line with modern maritime demands. Cadets overwhelmingly endorse technology's role in enhancing education, signalling a paradigm shift. Positive attitudes towards online resources, digital simulations, and e-learning platforms advocate for an institutional embrace of cutting-edge tools. Recommendations focus on faculty development and increased technology integration, promising an enriched pedagogical landscape. The exploration of sociocultural influences uncovers a delicate balance between tradition and the necessity of English proficiency. Nuanced strategies are essential to integrate diverse cultural backgrounds. Recommendations call for cultural awareness initiatives and language support programs, aligning the institution with the global orientation of maritime education. In qualitative insights, cadets express a collective desire for a more intentional curriculum, particularly in incorporating cultural perspectives. This aligns with the broader scholarly discourse advocating for holistic education. Proposed avenues include workshops, seminars, and collaborations with cultural experts, providing a roadmap for curriculum development congruent with the diverse needs of Semester 1 cadets. This research, rooted in rigorous academic inquiry, serves as a guide for the Maritime Institute, steering its trajectory towards producing technologically adept professionals who are equally culturally astute, ready to navigate the complex global maritime landscape.*

Keywords: *Competency Mapping, Maritime Education, Sociocultural Dynamics, Tailored Curriculum, Technological Proficiency*

INTRODUCTION

Maritime education stands at the intersection of tradition and modernity, where the skills of seafaring have evolved alongside the rapid advancements in technology and the

complexities of a globalised society (Chircop, 2015; Manuel, 2017). As a researcher and educator at the esteemed Maritime Institute Jakarta (STIP Jakarta), a premier institution for maritime education in Indonesia, my focus centres on the initial phase of a cadet's journey—the crucial Semester 1. In this stage, cadets are fresh graduates from senior high school, embarking on an educational path that will shape their careers as international officers in the maritime sector. The Maritime Institute Jakarta (STIP Jakarta) has earned its reputation as a beacon of excellence in producing highly qualified and skilled seafarers. The institution's international programme, designed to align with the International Maritime Organization's (IMO) Standards of Training, Certification, and Watchkeeping (STCW) for English Maritime programs, reflects a commitment to producing globally competitive maritime professionals (IMO, 2018; SEP, n.d.). With majors encompassing Nautical, Technical, and Port and Shipping Management, the institute is a dynamic hub nurturing future deck officers, engine officers, and seamen.

The urgency of this research stems from the evolving landscape of maritime operations, where traditional navigational skills must seamlessly integrate with contemporary technological demands. At the heart of this integration lies the imperative for cadets to master computer literacy. As the maritime sector becomes increasingly reliant on sophisticated technologies, ensuring that cadets possess the requisite computer skills is not merely a matter of academic concern but a strategic necessity for the industry's sustained growth and competitiveness. Beyond technological competence, the research recognises the intricate web of social and religious factors shaping the cadets' educational experience (Nath, 2001; Wu, 2023). Hailing from diverse regions across Indonesia, the cadets bring with them a rich tapestry of cultural and linguistic backgrounds. While the institute's international orientation mandates fluency in English for effective communication, the cadets' immersion in their traditional languages and social contexts necessitates a nuanced understanding of the socio-cultural dimensions influencing their journey through maritime education.

The research aims to address the pressing need for a holistic understanding of cadets' competencies in computer literacy within the broader framework of social and religious influences. It recognises the academic void in this specific intersection—where technology, culture, and education converge in the context of maritime training (Neve et al., 2020). By focusing on Semester 1 cadets, the research aims to capture the formative stages of their educational journey, offering insights that can inform pedagogical practices, curriculum development, and industry expectations. In undertaking this research, the overarching goal is

to contribute to the enhancement of maritime education, ensuring that the next generation of international officers emerges not only technologically adept but also culturally and socially aware. The relevance of this study extends beyond the confines of STIP Jakarta, reaching into the broader discourse on global maritime education and the imperative for graduates to navigate the complexities of an interconnected and diverse maritime industry (Cicek et al., 2019).

TEORITICAL REVIEW

The literature surrounding maritime education underscores the sector's dynamic nature, emphasising the need for a multifaceted approach to cadet training. Traditionally, maritime education focused predominantly on navigational and technical skills, reflecting the demands of seafaring. However, in recent years, the integration of technology into maritime operations has prompted a paradigm shift in educational priorities. The International Maritime Organization's (IMO) Standards of Training, Certification, and Watchkeeping (STCW) for English Maritime programs have responded to this shift by incorporating a heightened emphasis on computer literacy (IMO, 2018; Young, 1995). Computer literacy, in the maritime context, extends beyond mere proficiency with software and hardware. It encompasses the ability to navigate data support systems, interpret technological interfaces, and engage with the broader digital landscape that defines modern maritime operations. The literature suggests that this shift towards digital literacy is not merely a response to industry trends but a strategic imperative for the safety, efficiency, and competitiveness of maritime activities on a global scale (Agrifoglio et al., 2017).

In parallel, the literature also recognises the socio-cultural dimensions of maritime education, highlighting the need for graduates to navigate diverse social contexts. The global orientation of maritime institutes, including STIP Jakarta, underscores the importance of English proficiency for effective communication. However, the literature is notably sparse in addressing the nuances of how traditional languages and cultural backgrounds influence the educational experiences of cadets, particularly in the formative stages of their maritime training. This research seeks to bridge this gap in the literature by providing a nuanced exploration of Semester 1 cadets' competencies in computer literacy while considering the social and religious factors that shape their educational journey. As the maritime industry continues to evolve, the findings of this study are poised to contribute valuable insights into

the holistic preparation of cadets for their roles as international officers in a technology-driven and culturally diverse maritime landscape.

RESEARCH METHOD

This study adopts a qualitative descriptive approach to comprehensively examine the competencies of Semester 1 cadets at the Maritime Institute Jakarta (STIP Jakarta) in computer literacy within the broader context of social and religious influences. Qualitative research, in this instance, allows for an in-depth exploration of the phenomena under investigation, offering a nuanced understanding of the cadets' experiences without imposing preconceived frameworks (Padgett, 2016; Weisberg, 2016). The emphasis is on capturing the richness and complexity of the cadets' perspectives and practices. Given the nature of the research, it is conducted from the perspective of the researcher, relying on observational analysis and document review (Nurwahyu & Tinungki, 2020). The decision to refrain from direct interviews is deliberate, aiming to minimise potential biases and ensure an unobtrusive examination of the cadets' behaviours and interactions within their educational environment. This method aligns with the overarching goal of understanding the cadets' competencies through the lens of their day-to-day experiences and engagement with academic materials.

To gather data, a tailored survey instrument is designed, focusing on specific indicators related to computer literacy, social perspectives, and religious influences. The survey is distributed to 200 cadets randomly selected from Semester 1, ensuring a representative sample that captures the diverse backgrounds and experiences of the cohort. The survey is structured to elicit responses that reflect the cadets' comprehension of computer literacy, their perceptions of the role of technology in maritime education, and the influence of social and religious factors on their academic journey. The survey incorporates both closed-ended and open-ended questions (Padgett, 2016). Closed-ended questions provide quantitative data that can be subjected to descriptive statistical analysis, offering insights into the prevalence of certain trends or patterns within the cadet population. Meanwhile, open-ended questions invite qualitative responses, allowing cadets to articulate their thoughts and experiences in their own words. This mixed-methods approach enhances the depth of the analysis, ensuring a comprehensive exploration of the research objectives.

To maintain the integrity and validity of the data, the survey is designed to be clear, concise, and aligned with the specific research goals. Cadets are briefed on the purpose of the

study and encouraged to provide honest and reflective responses. While the researcher does not conduct direct interviews, the survey instrument incorporates elements that encourage participants to share their perspectives freely, ensuring that the data collected accurately reflects the cadets' experiences and insights (Bertram et al., 2018). The descriptive analysis of the data involves categorising and interpreting the responses, identifying recurring themes, and examining patterns that emerge across different dimensions. The findings are then contextualised within the broader literature on maritime education, computer literacy, and socio-religious influences. Through this methodological approach, the study seeks to contribute valuable insights to the academic discourse on maritime education while offering practical implications for curriculum development and pedagogical practices within the Maritime Institute Jakarta (STIP Jakarta).

RESULTS AND DISCUSSIONS

Results

The comprehensive examination of Semester 1 cadets at the Maritime Institute Jakarta (STIP Jakarta) has yielded valuable insights into their competencies in computer literacy, contextualised within the dynamics of social and religious influences. The research, conducted through a qualitative descriptive approach, employed a tailored survey instrument distributed to 200 randomly selected cadets. The analysis of the data has been structured to provide a detailed account of the findings, elucidating the cadets' perspectives on computer literacy, technology in maritime education, and the impact of social and religious factors on their academic journey.

1. Computer Literacy Proficiency:

The survey assessed the cadets' proficiency in computer literacy through a series of closed-ended questions. The results indicate a notable level of competence among the cadets, with the majority expressing confidence in utilising standard office software, navigating digital platforms, and accessing online resources. However, the analysis reveals variations in proficiency levels, suggesting that while many cadets are adept in basic computer operations, there is a spectrum of expertise, with some exhibiting advanced skills in data analysis and system navigation.

Table 1: Cadets' Computer Literacy Proficiency

Computer Literacy Skills	Percentage of Cadets Proficient
Basic Office Software (Word, Excel)	85%
Digital Platform Navigation	78%
Online Resource Utilisation	72%
Data Analysis	60%

The data in Table 1 underscores the importance of tailoring computer literacy curriculum components to accommodate the diverse skill levels observed among Semester 1 cadets. While a significant majority demonstrates proficiency in basic skills, strategic interventions may be beneficial to elevate the capabilities of those in need of advanced training, particularly in data analysis—a skill increasingly vital in modern maritime operations.

2. Technology in Maritime Education:

Cadets were probed on their perceptions of the role of technology in maritime education, offering insights into their attitudes towards the integration of digital tools and resources. The findings reveal a unanimous acknowledgment of technology as a facilitator of learning. An overwhelming 94% of cadets expressed the view that technology enhances their educational experience, citing access to online resources, digital simulations, and e-learning platforms as valuable components of their academic journey.

Table 2: Cadets' Perceptions of Technology in Maritime Education

Perceptions of Technology in Education	Percentage of Cadets
Enhances Educational Experience	94%
Access to Online Resources	88%
Digital Simulations	76%
E-learning Platforms	82%

Table 2 highlights a positive reception of technology integration among the cadets. The majority recognises the benefits of online resources and digital simulations, indicating a readiness to engage with contemporary educational tools. These findings emphasise the need

for continued investment in technological infrastructure and the incorporation of innovative teaching methods to optimise the learning experiences of Semester 1 cadets.

3. Social and Religious Influences:

The survey explored the impact of social and religious factors on the cadets' academic journey, shedding light on the nuances of their socio-cultural context. While 76% of cadets affirmed the influence of traditional languages and cultural backgrounds on their daily lives, a noteworthy 88% expressed the importance of English proficiency for international communication—a key requirement in the institute's global programme.

Table 3: Cadets' Perspectives on Social and Religious Influences

Social and Religious Factors Influence	Percentage of Cadets
Traditional Languages and Culture	76%
Importance of English Proficiency	88%

Table 3 underscores the delicate balance that Semester 1 cadets navigate between their rich cultural backgrounds and the globalised demands of maritime education. The coexistence of traditional influences and the imperative of English proficiency highlight the multi-dimensional nature of their educational journey.

4. Integration of Social and Religious Perspectives in Education:

Open-ended questions provided qualitative insights into how social and religious perspectives are integrated into the cadets' education. The thematic analysis revealed that while there is an appreciation for the cultural diversity within the institute, there is a call for more intentional incorporation of socio-religious dimensions into the curriculum. Cadets expressed a desire for modules that address the intersections between maritime practices and cultural nuances, fostering a more holistic and culturally sensitive approach to their training.

Table 4: Cadets' Perspectives on Integration of Social and Religious Perspectives

Integration of Social and Religious Perspectives	Themes from Open-ended Responses
Appreciation for Cultural Diversity	Cadets value cultural diversity within the institute
Desire for More Intentional Curriculum	Call for modules addressing intersections between maritime practices and culture

Table 4 encapsulates the qualitative responses, indicating the cadets' yearning for an educational framework that recognises and integrates their diverse cultural backgrounds, thereby enriching their maritime education.

The research findings provide a nuanced understanding of Semester 1 cadets' competencies in computer literacy within the context of social and religious influences. The proficiency levels in computer literacy underscore the need for a tailored curriculum that accommodates varying skill levels. The overwhelmingly positive perceptions of technology highlight a receptiveness to innovative educational tools. The delicate balance between traditional influences and the demands of global communication adds complexity to the socio-cultural dimensions of the cadets' academic journey. The qualitative insights emphasise the importance of integrating social and religious perspectives into the curriculum, offering a roadmap for curriculum development that aligns with the diverse needs of Semester 1 cadets at the Maritime Institute Jakarta (STIP Jakarta).

Discussions

1. Computer Literacy Proficiency:

The analysis of computer literacy proficiency among Semester 1 cadets at the Maritime Institute Jakarta (STIP Jakarta) reveals a spectrum of competencies. While a majority demonstrates proficiency in basic office software and digital platform navigation, there are variations in skills related to data analysis. This divergence underscores the importance of tailoring the computer literacy curriculum to accommodate the diverse skill levels observed among cadets.

Implications: The varying levels of computer literacy proficiency among cadets have implications for curriculum development. A stratified approach that identifies and addresses specific skill gaps can enhance the overall competency of the cadet population. Incorporating advanced training modules in data analysis can ensure that cadets are equipped with the comprehensive computer skills necessary for contemporary maritime operations.

Recommendations:

1. Conduct a detailed assessment of cadets' computer literacy skills at the beginning of the academic year to inform tailored interventions.
2. Develop advanced training modules focused on data analysis to bridge the proficiency gap identified in the survey.

2. Technology in Maritime Education:

The overwhelmingly positive perceptions of technology among Semester 1 cadets highlight the integral role it plays in enhancing their educational experience. The majority acknowledges the benefits of online resources, digital simulations, and e-learning platforms, indicating a readiness to engage with contemporary educational tools.

Implications: The positive perceptions of technology have implications for the pedagogical approach within the Maritime Institute Jakarta. Embracing and expanding the use of online resources and digital simulations can enhance the effectiveness of teaching and learning. Recognising technology as a facilitator of learning positions the institution to further invest in cutting-edge educational tools.

Recommendations:

1. Explore opportunities for the integration of additional online resources and digital simulations into the curriculum.
2. Provide training for faculty members to leverage technology effectively in their teaching methodologies.

3. Social and Religious Influences:

The findings regarding social and religious influences indicate that while 76% of cadets acknowledge the impact of traditional languages and culture, 88% emphasise the importance of English proficiency for international communication. This dual dynamic highlights the

delicate balance that cadets navigate between their cultural roots and the global demands of maritime communication.

Implications: The coexistence of traditional influences and the imperative of English proficiency has implications for creating a culturally sensitive educational environment. Acknowledging and integrating the cultural backgrounds of cadets can contribute to a more inclusive and effective learning experience.

Recommendations:

1. Develop cultural awareness programmes that celebrate the diversity of cadets' backgrounds.
2. Integrate language support programmes to enhance English proficiency among cadets.

4. Integration of Social and Religious Perspectives in Education:

The qualitative insights into the integration of social and religious perspectives reveal a desire among cadets for a more intentional curriculum. While there is appreciation for cultural diversity, the call for modules addressing the intersections between maritime practices and culture suggests a yearning for a holistic and culturally sensitive approach to education.

Implications: The qualitative responses underscore the importance of aligning the curriculum with the socio-religious dimensions of cadets' lives. Integrating cultural perspectives into the education framework can foster a sense of inclusivity and relevance, enhancing the overall educational experience.

Recommendations:

1. Conduct workshops and seminars on the integration of cultural perspectives into maritime education.
2. Collaborate with experts in cultural studies to develop modules that bridge the gap between maritime practices and diverse cultural backgrounds.

General Implications and Recommendations:

1. **Continuous Monitoring and Evaluation:** Establish a system for continuous monitoring and evaluation of computer literacy proficiency and the integration of technology and socio-religious perspectives. Regular assessments will facilitate adaptive curriculum adjustments based on evolving needs.

2. **Stakeholder Collaboration:** Foster collaboration with industry stakeholders to align the curriculum with industry expectations. Regular feedback from industry professionals can inform curriculum updates that reflect the rapidly changing landscape of maritime operations.
3. **Faculty Development:** Invest in the professional development of faculty members to ensure they are well-equipped to deliver a curriculum that integrates technology and cultural perspectives effectively. Continuous training will enable faculty to stay abreast of advancements in both pedagogy and industry trends.
4. **Institutional Support for Cultural Integration:** Institutionalise support systems that facilitate the integration of cultural perspectives. This may include dedicated cultural liaison officers, cultural exchange programmes, and initiatives that celebrate the diversity within the Maritime Institute Jakarta.

The discussions, implications, and recommendations emanate from a nuanced understanding of Semester 1 cadets' competencies in computer literacy, technology integration, and socio-religious influences. The tailored recommendations aim to address specific needs identified in the research, contributing to the enhancement of maritime education at the Maritime Institute Jakarta (STIP Jakarta) and providing a blueprint for navigating the complexities of a technology-driven and culturally diverse maritime industry.

CONCLUSION

In culmination, this research at the Maritime Institute Jakarta (STIP Jakarta) has unearthed critical insights into the competencies, perspectives, and needs of Semester 1 cadets in the context of computer literacy, technology integration, and socio-religious influences. The nuanced exploration of these facets has illuminated the dynamic nature of maritime education, situated at the confluence of tradition and modernity. The findings regarding computer literacy proficiency underscore the necessity for a tailored curriculum that accommodates varying skill levels. Recognising the spectrum of competencies among cadets, it becomes imperative to design interventions that bridge gaps, particularly in advanced skills like data analysis. This not only ensures the comprehensive preparedness of cadets for contemporary maritime operations but also positions them as adaptive contributors to the technological landscape of the industry.

The overwhelmingly positive perceptions of technology among cadets herald a paradigm shift in educational methodologies. Acknowledging technology as a facilitator of learning, the implications resonate in recommendations that encourage the institution to embrace innovative tools and methodologies. The integration of additional online resources and digital simulations aligns with the broader discourse on the role of technology in enhancing the educational experience, laying the foundation for a pedagogically advanced maritime education. The delicate balance that cadets navigate between traditional influences and the demand for English proficiency forms the crux of the socio-religious influences discussed in this research. The coexistence of these dynamics necessitates a nuanced approach that acknowledges and integrates cultural backgrounds while fostering English proficiency. The implications extend to recommendations promoting cultural awareness programmes and language support initiatives, contributing to an inclusive educational environment.

Moreover, the qualitative insights into the integration of social and religious perspectives underscore the cadets' desire for a more intentional curriculum. The call for modules addressing the intersections between maritime practices and culture reflects a holistic vision for education—one that transcends technical competence to embrace cultural sensitivity. The recommendations to conduct workshops, seminars, and collaborate with cultural experts reflect an acknowledgment of the broader implications for curriculum development and institutional practices. This research contributes not only to the academic discourse on maritime education but also offers practical recommendations for the Maritime Institute Jakarta (STIP Jakarta). It stands as a testament to the institution's commitment to producing globally competitive maritime professionals who not only navigate the technological complexities of the industry but do so with a profound understanding of diverse cultural landscapes. As maritime education continues to evolve, this research provides a valuable compass for navigating the currents of change, ensuring the preparedness of cadets for the challenges and opportunities that await them in the global maritime arena.

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