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## The importance of maritime education and training within the secondary education system in South Africa

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**WORLD MARITIME UNIVERSITY**

Malmö, Sweden

**THE IMPORTANCE OF MARITIME EDUCATION  
AND TRAINING WITHIN THE SECONDARY  
EDUCATION SYSTEM IN SOUTH AFRICAN**

By

**PAULOS MXOLISI KUHLASE**

Republic of South Africa

A dissertation submitted to the World Maritime University in partial  
fulfilment of the requirement for the award of the degree of

**MASTER OF SCIENCE**

**In**

**MARITIME AFFAIRS**

**(MARITIME LAW AND POLICY)**

2020

## Declaration

I certify that all the material in this dissertation that is not my work has been identified and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my personal views, and are not necessarily endorsed by the University.

(Signature): .....

(Date): .....

Supervised by: Professor Michael Ekow Manuel

Assessor:

## Acknowledgement

“Many plans are in a man’s heart, but the purpose of the LORD will prevail” Proverbs 19:21. I thank God Almighty, the Architect of the universe, for granting me the opportunity to work on this project with an amazing supervisor, the maritime academic Professor Michael Manuel. I take my cap-off to you for your guidance and assistance in shaping my study. Your professionalism and selfless advice also shaped me as a person.

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## Abstract

**Title of Dissertation: The Importance of Maritime Education and Training within the Secondary Education System in South African**

**Degree: Master of Science**

The importance of maritime education and training within the secondary education system in South Africa is found to be necessary for the youth to build a better maritime conscious nation and in broadening their career opportunities.

The study raised three research questions in a quest to examine the importance of maritime education and training as part of developing the society and its relevance and correlation to economic growth. To answer the questions, a mixed-method approach was utilised in the process of data collection and analysis. A survey questionnaire was distributed and semi-structured interviews were conducted.

The findings have sufficiently substantiated the importance of maritime education and training at secondary schools in the Republic of South Africa. They show that young people are interested in maritime education and that South Africa does embrace education as it is a very important process for both individual and societal development and enables or empowers an individual to have the ability to make insightful judgements based on the knowledge provided.

Furthermore, the findings show that South Africa, through Operation Phakisa, has implemented maritime education at some public secondary school offering Maritime Economics, and Nautical Science. However, many maritime learners' performance remains well below expectations due to several reasons such as limited availability of equipment and lack of proper exposure to the maritime environment for both the learners and educators, a lack of understanding of the maritime sector as well as limited funding of appropriate initiatives.

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## List of Abbreviations

AET:	Adult Education and Training
ANC:	African National Congress
CHE:	Council of Higher Education
DHET:	Department of Higher Education and Training
DBE:	Department of Basic Education
DEFF:	Department of Environment Fisheries and Forestry
HSRC:	Human Science Research Council
IMO:	International Maritime Organisation
MoU:	Memorandum of Understanding
NP:	National Party
NQF:	National Qualification Framework
NSC:	National Senior Certificate
REC:	Research Ethics Committee
SETA:	Sector Education and Training Authority
SDA:	Skills Development Act
SAQA:	South African Qualifications Authority
STCW:	Standard of Training, Certification and Watchkeeping
SAMSA:	South African Maritime Safety Authority

SAIMI: South African International Maritime Institute

Stats SA: Statistics South Africa

TVET: Technical Vocational Education and Training

WMU: World Maritime University

## 1. INTRODUCTION

### 1.1 Background

The introduction of maritime education and training at secondary school level has been viewed as a strategic game-changer by some in maritime circles. This approach is deemed to have the potential to enhance growth and present the opportunity to create awareness about the sector to individuals who are not in the maritime industry and most importantly become the catalyst in the development and attraction of qualified and competent human resources to ensure the sustainability of the sector (Simone, 2015).

According to Oluwatobi et al (2016), education plays a significant role in the development of a society and society must have an educated and trained members. Over the last few years education has become the real wealth that is used to create more wealth. Jones (1996) and Barro (2001) have empirically proven these assertions. Because human capital is relevant and has a correlation to economic growth, it is reasonable to argue that improving the level of human capital, particularly through education, is vital to achieving economic growth as well as sustainable development. Oluwatobi & Ogunrinola (2011) and Jaiyeola (2015) also confirm the argument that access to education promotes human capital development. This means that by making education more accessible and establishing more avenues for its distribution, more inclusive growth and development will be achieved (Oluwatobi, 2016).

According to Davies (1996), the South African apartheid government led by the National Party (NP) introduced systems that created segregation based on racial groupings when it came to the development of national human capital. They developed laws that segregated the education between whites and non-whites. Laws such as the Training and Artisan Act No 38 of 1951, Extension of University Education Act 49 of 1959 and the Bantu Education Act No 47 of 1953 were passed and enforced. It is these laws that methodically created serious unequal access to education of non-whites in primary, secondary and tertiary education. According to Sedibe (1998), the

implementation of the above-mentioned laws resulted or created the following inequalities:

- An imbalance in the access to educational opportunities in primary, secondary and tertiary education;

- Unequal distribution of the educational resources required for effective teaching and learning;

- Lack of Mathematics and Physical Science subjects in most black secondary schools. In most schools, learners completed secondary education without Mathematics and Physical Science subjects.

This prevented them from choosing science-based fields of study at universities. As a result, there were few Blacks who were able to penetrate these fields. These inequalities led to unequal attainment of skills which had discriminatory effects on individuals and industries. The maritime industry was significantly affected. Twenty years post the apartheid era, the South African government developed policies and plans to grow the maritime industry with the intention that it will contribute towards economic development, launching a policy intervention called Operation Phakisa. Operation Phakisa is a South African version of the Malaysian Big Fast Results Methodology (environment.gov.za, 2014).

The plan was that this approach will deliver the much-needed economic development for the country. About 656 South African maritime professionals and experts were given the task to comprehensively reappraise the South African maritime sector and identify areas with the potential for economic growth and employment opportunities. Two cross-cutting and enabling areas were identified including the need for maritime education and vocational skills.

According to the Former President of the Republic of South Africa, Jacob Zuma (2014), “the oceans have the potential to contribute up to 177 billion Rands to the Gross Domestic Product and create just over one million jobs by 2033”. The major driving force for Operation Phakisa is job creation with a particular focus on reducing youth unemployment.

In the past, South Africa had strong maritime activities and employment opportunities which were reflected in tonnage on the country's ship registry and a strong shipping industry. However, the legacy of the apartheid government is still visible with the evidence of the deeply embedded racial division of labour. Education and training within the maritime industry needs more restructuring as this industry is less understood by those who have political power (Bonnin, 2002). In 1994, the African National Congress (ANC) was elected and the ANC created new laws that enabled and emphasised the importance of equal education for all (ANC, 1994).

South Africa then started to develop Maritime High Schools to provide knowledge about the maritime industry, and to give the youth an opportunity to learn about career opportunities in the industry as well as to increase the prospects of the youth to take maritime-related studies at the higher and tertiary education level (Eastern Cape Government, 2010).

## 1.2 Education and Training Legislation Developed Post-Apartheid 1994

The ANC developed laws that are non-racial and inclusive which is the total opposite of those that were created by the apartheid government. This approach is intended to ensure that all South African have access to education (Department of Higher Education and Training, 2001). The following laws and institutions were put in place to specifically deal with education and training in South Africa.

### 1.2.1 South African Qualification Authority Act No 58 of 1995

This Act authorises the Minister of Education in consultation with the Minister Labour, to authorise a body or institute called the South African Qualification Authority to be responsible for the development of an integrated national framework for learning achievements. Furthermore, this body is also responsible to carry out qualification verification for both foreign and South African academic qualifications.

### 1.2.2 The National Qualification Framework (NQF) Act No. 67 of 2008

This categorises qualifications and competencies ranging from NQF Level 1 which is Grade Nine (9) to NQF Level 10 doctorate level. The NQF levels are also designed to facilitate and give guidance on how to access education and assist in the management of career paths and further training and development (Van Rooyen, 2011).

### 1.2.3 The Skills Development Act (SDA) No. 97 of 1998 repealed Manpower Training Act No. 56 of 1981

This Act authorised the establishment of the National Skills Authority (NSA) that is mandated to advise the Minister of Labour on skill requirements and national training strategy. Furthermore, this Act authorised the establishment of the Sector Education and Training Authority (SETA). The NSA has the mandate to liaise with SETA on behalf of the Minister

## 1.3 Amalgamation of Maritime Training Institutions

In the year 1999, the Training Centre for Seamen amalgamated with Wingfield Technical College which offered marine engineering courses which as at now is no longer a specialised, dedicated seafarer training institution. Wingfield courses are accredited by South African Maritime Safety Authority (SAMSA) which is the maritime administration in South Africa. The college brought all their ratings courses in line with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended. They are accredited to offer the following rating courses: Able Seaman, Proficiency in Life Rafts and Basic Training (which includes Personal Safety and Social Responsibility). Due to the low demand for rating labour, few shipping companies have sent staff for training at Wingfield over the past few years (Bonnin & Woods, 2002).

The majority of the current students come from the fishing industry.

We have had up to seventy-year-olds come here sometimes for the private courses for leisure vessels, but most of them we seem to find are late twenty's,

early thirty's fishermen. They are mature, they are married, they've got families, they are employed, and they want to learn (Bonnin and Woods, 2002).

Wingfield also offers a limited number of marine engineering courses. Currently, they offer SAMSA approved marine engineering officer class three and class four and marine motormen. The amalgamation of training institutions did not yield the expected results. In addition to the continued loss of skills, the country also lost ships from its ship registry.

#### 1.4 Aim and Objective

The study aims to investigate and explore the importance of maritime education within the basic education system with a focus on public secondary schools, and its potential role in building an inclusive growth for the country.

Maritime education and training during the foundational stage within the secondary education system in South Africa, may assist the youth in understanding the maritime industry and its uniqueness and how the industry operates. Furthermore, it may assist in demystifying the narrative that maritime is excluded as a career option for most communities in South Africa as compared to other knowledge fields such as medicine, law and mining.

The specific objective is to ascertain the innovations that the post-apartheid government has developed and achieved in creating a globally accessible and competitive maritime education system.

#### 1.5 Research Question

To achieve the aim and objective of the study, the research questions the study intends to answer are:

1. What is the importance of introducing maritime education and training at secondary public schools in South African?
2. To what degree or extent is maritime education and training offered in public schools?

3. How can the development and delivery of a maritime education curriculum at a secondary level in South Africa be optimized with reference to best practices in other jurisdictions?

#### 1.6 Research Methodology

The research took a mixed-methodological approach applying both qualitative and quantitative approaches. The word “qualitative” implies an emphasis on the qualities that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency. In contrast, quantitative studies emphasize measurement and analysis or a causal relationship between variables, not processes (Lincoln & Denzin 2013). Qualitative research is a way of exploring and understanding individuals and groups’ opinions and problems and is generally exploratory in nature.

The quantitative method would provide a wider scope, objectivity and a deductive approach, where the sampling may be either random or non-random (systematic, stratified, snowballing, convenience or clustered or quota). The highly structured questionnaire is the best data collection for this method. The number of the sample or population is very important hence the data analysis is the statistical calculation. This method will provide the exact numerical results that can be more generalised (Oflazoglu, 2017).

The qualitative and quantitative approaches taken complement each other, ultimately allowing for the making of informed deductions, recommendations and conclusions. The required data was collected employing a questionnaire and interviews from willing participants over three months. Access to respondents from training institutions and high schools was granted by the relevant authorities.

In the quantitative approach, the study also used the readily available secondary data from the Department of Basic Education (DBE), South African International Maritime Institute (SAIMI) and Technical Vocational Education and Training (TVET) colleges, to develop and administer a survey questionnaire during the South Africa Navy marketing and recruitment drives to all nine provinces of South Africa.

This research study used both primary and secondary quantitative data collected from journals, Statistics South Africa (Stats SA), the Department of Basic Education (DBE), Department of Higher Education and Training (DHET), Council of Higher Education, Human Science Research Council (HSRC), Human Resource Development Review, the Adult Education and Training (AET) centres, Technical Vocational Education and Training (TVET) colleges and SETAs.

#### 1.7 The Scope and Limitations of the Study

The scope of the study is limited to the quantitative coverage of access to education in the country. The study focused only on the gross enrolment numbers and the pass rate of learners and students at public secondary schools in South Africa. The gross enrolment numbers of learners in private institutions of learning, such as private schools, private colleges, private adult centres of learning and private institutions of higher learning, and the quality of education offered at these institutions, fall beyond the scope of the study. Therefore, further research covering the quality of education offered at the public institutions of learning, gross enrolment numbers in the private institutions of learning and the quality of education offered in these institutions could be a subject for further research.

## 2. LITERATURE REVIEW

2.1. This chapter examines the literature to contextualise the importance of maritime education in the public secondary education system and the level of training that is needed. The discussion in this chapter focuses on the historical background of basic education at the secondary level and maritime education in South Africa, the definition of basic education and secondary level, the purpose of education, the curriculum and maritime education and training at the secondary level.

In the past, South Africa had a reasonable seafaring tradition and history. However, with the dawn of democracy in 1994, the South African shipping industry still had the trappings of the apartheid legacy which was based on a deeply embedded racial division of labour as well as training and development within the shipping industry. To this day South Africa still struggles to facilitate entry and upward mobility of black seafarers.

### 2.2. Education

According to Rundel (2002) education is the process used to “give and receive systematic instruction, teaching, coaching, guidance and training, especially at homes, schools, colleges and universities to enable or empower an individual to have the ability make insightful judgements based on the knowledge provided”. Education includes but is not limited to the intellectual, emotional and physical development of a person. It is the ability to learn unassisted, to be impartial and tolerant and to have a willingness to participate in human development. It is one of the ingredients needed to grow the economy and sustain it.

According to Erasmus et al. (2013), education is further defined as an intentional and organised endeavour to acquire and impart knowledge, skills and values. Furthermore, education comprises activities of learning in organisations and includes those that are job-related and those that are generic, such as stress management.

There are various systems of education such as informal, formal, non-formal education and distance learning systems. These systems are all effective and acceptable within the global community depending on intended outcomes and context. However, formal education is more structured as it is acquired through a systematic, organised mechanisms and administered under relevant laws, and offered in a curriculum with a set of objectives and learning outcomes with content and a delivery methodology. On the other hand, many community-based programmes are limited to accessing information from libraries with the goal of personal development and other such methods which are outside of the traditional classroom and are therefore classified as the informal education (Ahmed, Coombs, & Prosser 1973).

According to Todaro and Smith (2013) education starts at home where a child interacts with parents, siblings, relatives and other members of society. This phase is often followed by formal education that is intended to prepare the child for his or her role in the society. The Epstein model of parental involvement is a reinforcement of the two-way communication between home and school and the cooperation on the development of the child who becomes a member of the society (Epstein, 1987).

### 2.3. Education in South Africa

According to Macha & Kadakia (2017), the legacy of the apartheid government is still very conspicuous in the education system. The Bantu education laws of 1953 were designed to deprive black people access to subjects such as Mathematics and Physical Science, even though the black population was the majority. The education system is still trying to recover from this unjust system as some black people still do not have access to decent school infrastructure and textbooks.

Post the apartheid era the democratically elected government invested in the education system to rectify the injustices of the past. In 2013, the South African government invested 19.7 percent of the country's budget into education. The national Department of Education was responsible for the entire education system which was split into three levels elementary, secondary and tertiary. In 2009, the Ministry of

Education was split into two - the Department of Basic Education (DBE) and Department of Higher Education and Training (DHET). The Department of Basic Education's focus is the elementary level and secondary level education whilst the Department of Higher Education and Training focuses on post-secondary-level education including higher education institutions and post-secondary technical training (Macha & Kadakia, 2017). The focus of this study is on secondary education.

The duration for secondary education in South Africa is a minimum of six years - from grade 7 to grade 12. This period is divided into lower and upper secondary school. However, despite the investment in secondary education, 68% of South Africans between the ages of 18 and 34 years are unemployed due to the unequal societal setup (DHET, 2016). Furthermore, 51% of South African youth aged between 18 and 24 years cite lack of money as a reason for not going to school.

Figure 1 illustrates the number of the youth between the age 18 and 24 years who are unemployed due to lack of access to financial support.

**Youth aged 18–24 residing in Free State, KwaZulu-Natal, North West, Gauteng and Mpumalanga, cited lack of money for school fees as the principal reason for not attending any educational institution in 2017.**

*Individuals aged 18–24 who indicated no money for fees as a reason for not attending educational institution by province, 2017*

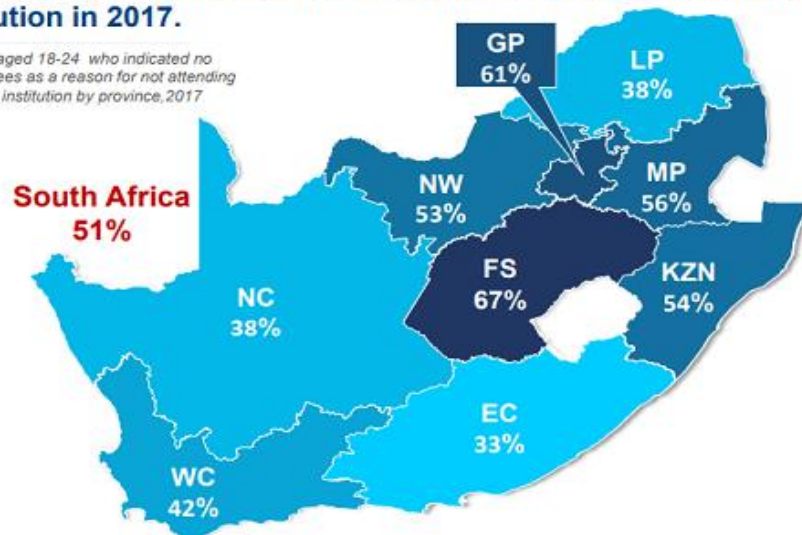


Figure 1: Unemployed youth aged between 18 to 24 years per province

Source: Statistics South African, 2017

**Table 1: Educational attainment among individuals aged from 25 to 64 by population group by 2016 per numbers**

Educational Attainment					
Highest level of education attained	Black African	Coloured	Indian/Asian	White	Total
No schooling	1 382 153	67 135	18 800	37 381	1 505 469
Pre-school	18 448	1 379	191	257	20 276
Primary	2 928 677	408 773	41 334	22 879	3 401 663
Secondary	13 359 575	1 720 847	158 919	898 018	17003 467
Post-secondary	1 763 207	194 589	158 919	898 018	3 014 733

Source: Statistic South Africa, 2017

Although there is a myriad of anomalies within the secondary education system, over the years South Africa has managed to attain higher ratings concerning the increasing number of people with secondary education compared to the past in the sub-Saharan region. South African secondary school enrolment attainment increased from 39.6% to 48.5% from 2005 to 2015. A further increase was observed in the National Senior Certificate (NSC) attainment from 2013. However, there are still challenges within the secondary school system. The drop-out rate is still high. An annual estimate of 1 million learners exit the schooling system without attaining national senior certificate due to a variety of reasons (Macha and Kadakia, 2017).

## 2.4 Maritime Education in South Africa

Maritime education and training, particularly for seafarer training, are regulated internationally by the International Maritime Organization's (IMO) International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended. South Africa is a member State of the IMO and is a signatory to the STCW, 1978, as amended. In South Africa, maritime training is certified by the South African Maritime Safety Authority (SAMSA) as the recognised maritime administration. However, the South African Skills Development Act and the National Qualification Framework recognises Transport Education and Training

Authority (TETA) as the Sector Education Training Authority (SETA). As two certifying bodies, TETA and SAMSA developed a Memorandum of Understanding (MoU) to collaborate in certifying seafarer training in the country (Bonnin & Woods, 2002).

The training and development of seafarers in South Africa has to comply with the STCW standards and fit within the NQF. The current curriculum and learning programmes are also translated into the South African Qualifications Authority (SAQA) format and registered on the NQF. According to the South African Qualifications Authority Act (No 58), accredited courses have to be designed in such a manner as to promote transferability of skills. In other words, a seafarer undergoing training meeting the standards of STCW 1978, as amended, in South Africa will gain credits which are transferable to other educational institutions should that individual wish to switch careers. If learning is acquired according to unit standards that have been registered on the NQF then the credits obtained will be nationally recognised regardless of where the learning was acquired. The NQF also recognises that learning can be acquired through non-academic means (Bonnin & Woods, 2002). Table 2 shows the NQF in South Africa.

**Table 2: South Africa's National Qualification Framework**

National Qualifications Framework				
LEVEL	SUB-FRAMEWORK AND QUALIFICATION TYPES			
10	HEQSF	Doctoral Degree Doctoral Degree (Professional)	Occupational Certificate (Level 8) Occupational Certificate (Level 7) Occupational Certificate (Level 6) Occupational Certificate (Level 5) Occupational Certificate (Level 4) Occupational Certificate (Level 3) Occupational Certificate (Level 2) Occupational Certificate (Level 1)	
9		Master's Degree Master's Degree (Professional)		
8		Bachelor Honours Degree Postgraduate Diploma Bachelor's Degree (480 credits)		
7		Bachelor's Degree (360 credits) Advanced Diploma		
6		Diploma Advanced Certificate		
5		Higher Certificate		
4	GENFETQSF	National Certificate	Occupational Certificate (Level 4) Occupational Certificate (Level 3) Occupational Certificate (Level 2) Occupational Certificate (Level 1)	
3		Intermediate Certificate		
2		Elementary Certificate		
1		General Certificate		

Taken from Government Gazette Volume 578, Number 36721, Pretoria, 2 August 2013 and adapted for the Register. The GENETQSF can be found on Page 23 of Gazette. Qualification types beyond level 6 on the OQSF have not been determined pending further advice.

Source: Department of Higher Education and Training

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Education in South Africa, wenr.wes.org



Source: Macha and Kadakia (2017)

The NQF in South Africa has 10 different levels as depicted on the table above table 2, the initial sub-frameworks and qualifications represent the elementary education, and the secondary education is represented by the intermediate and national certificate sub-frameworks. These level 3 and 4 qualifications are the focus area for this research.

## 2.5. Maritime Education for Secondary Schools in South Africa

Maritime education for secondary schools was introduced in South Africa in 1995 in a small town called Simon's Town in the Western Cape. The Lawhill Maritime Centre's aim is to support the job creation initiatives to reduce the unemployment footprint in the country. The target group is learners between the ages of 15 to 17 years old. The programme intends to give exposure to maritime-related knowledge and skills to increase and enhance the learners' prospect of entering into maritime-related studies

after the secondary education level. The Lawhill Centre stimulates and creates maritime awareness amongst young people in South Africa to attract them into the maritime industry. Notably, the centre receives no funding from the State. The black African learners study through a bursary scheme that is funded by the maritime industry and related industries. Because of affordability challenges caused by the social gap the programme runs from grades 10 to 12 (Ingpen, 2014).

In 2010, the Eastern Cape Provincial government held a conference with the theme “Development of Maritime High Schools in the Eastern Cape”. The objectives of the conference/workshop were:

- ❖ “To introduce students to the maritime industry, its function in South Africa and world history, commerce, basic terminology/taxonomy, and careers. This will allow the students in a very interactive (tours/ guest speakers/class project) manner to look at the industry and to decide if they want to pursue further studies in high school leading to employment or higher maritime education;
- ❖ To provide students with an understanding of the various occupations in the maritime industry to assist them in identifying their potential career path based on their academic proficiency and interest;
- ❖ To expand students’ knowledge of a given career path to receive specialized training to develop skills in those areas that can be utilized upon graduation. Students will choose an academic and professional structure, building on the experience and academic curriculum provided and
- ❖ To enable students to receive extensive instruction and experience both academically and practical in the designate career path chosen.” (Province of the Eastern Cape Government, 2010).

The recommendations that came out of the workshop were supported by the National, Provincial, Municipal governments and the private sector that supported the establishment of maritime secondary schools (Lefutso & Semwayo, 2010). According to Mtati & Ingpen (2020), maritime schools are not the ultimate solution. However, their establishment is a step in the right direction. Hence, the South African International Maritime Institute (SAIMI) continues to support new maritime schools. Operations Phakisa managed to put maritime awareness on top of the priority list for

the country with the view that the introduction of maritime subjects at secondary schools will assist in creating maritime awareness and introduce the South Africa youth to career opportunities that are new to them.

The country still needs to appreciate the implementation of a maritime programme in secondary schools. The current implementation, particularly in public schools, has to resolve the challenges related to quality of teaching methods and knowledge and experience of the educators. The situation at the moment is rather unacceptable. With the introduction of Operation Phakisa, some maritime schools was approved with a curriculum that covers Maritime Economics, and Nautical Science.(Mtati & Ingpen, 2020).

## 2.6 Global Trends on Maritime Education and Training at the Secondary Level

Maritime education at the secondary school level has the potential to address numerous challenges with respect to maritime subjects and bringing the required skills, knowledge as well as stimulating awareness regarding the environment and career opportunities for the youth (Haun, 2014). According to Simone (2015), the objective of MET is to ensure the provision of adequate human resource to the shipping industry with appropriate seafarer skills and knowledge needed in the multifunctional and multicultural international maritime community. Furthermore, education and training is utilised as a tool to address or to reduce the high level of risk associated with the maritime environment.

According Simone (2015), Sweden conducted a survey in 2009 the results of which indicated that the population of the country lacked knowledge when it comes to the maritime industry. Many within the public administration viewed maritime from the transportation of goods and passengers perspective. After the survey Sweden developed a strategy to alleviate the situation. The strategy was centred around awareness. 1072 learners enrolled at a secondary school that offered basic fishing in its curriculum as a result of the intervention strategy.

Although MET is important in creating awareness and career opportunities, the nation/state may take deliberate actions of making MET part of the secondary school's curriculum and creating policies that support MET (Simone,2015).

## 2.7 Summary

Education, whether formal or informal, is a very important process for individual and societal development. Over the years post the apartheid system in South Africa, Black people have been allowed to develop themselves and get access to education. The ANC led government approved inclusive laws and every South African White, Black, Indian and Coloured now, ideally, have equal opportunities to access education. Although access to education was granted to all, specialised education such as maritime still remains a challenge for the country, especially at the secondary school level.

The maritime industry for years was never a priority for the South Africa government due to other social ills that needed immediate attention for the ANC. However, in 2014 South Africa launched Operation Phakisa and this caught the attention of the politicians and those who operate out the industry. Operations Phakisa, amongst other things, brought the much needed funding to the industry and the focus to the development of maritime skills and education was at the epicentre. SAMSA with other stakeholders managed to push the skills agenda at all levels. However, South Africa finds itself in the same position as many other countries with regards to the proper implementation and curriculum development of maritime education at secondary schools level. Although maritime education may not be the ultimate solution to solving youth unemployment, it can be used as one of the vehicles or modalities that can bring solutions to this national challenge.

### 3. METHODOLOGY

#### 3.1. Introduction

In this research, the main objective is to investigate the importance of maritime education and training within the secondary education system in South Africa, how education and training may assist the youth in understanding the maritime industry and its uniqueness relating to how the industry operates. Furthermore, how it may assist in demystifying the narrative that maritime is excluded as a career option from most communities in South Africa as compared to other fields such as medicine, law and mining.

The research questions the study intends to answer are:

1. What is the importance of introducing maritime education and training at secondary public schools in South African?
2. To what degree or extent is maritime education and training offered in public schools?
3. How can the development and delivery of a maritime education curriculum at a secondary level in South Africa be optimized with reference to best practices in other jurisdictions?

#### 3.2. Research methods

The mixed-method approach was utilised to answer the questions of this study, this method is a combination of both qualitative and quantitative methods and it serves as an alternative between the two traditional methods (Teddlie and Tashakkori, 2009).

### 3.3 Population

In the initial step in the determination of a sample, the researcher must give careful consideration to the unit of analysis i.e. an individual, object, institution, or group of individuals that bear relevance to the researcher's study. The population for research is defined as that abstract universe to which the researcher assumes his findings will apply (Rea and Parker, 1992).

According to the census community survey (2011), Gauteng has registered the highest population representation of approximately 12,2 million, with KwaZulu-Natal being the second highest with a population of approximately 10,2 million. Out of the nine provinces, Gauteng stands at approximately 25 per cent of the total population of the republic.

Gauteng is not only the biggest province in terms of population distribution as indicated, it is also documented as having more high schools than any province in the republic. The statistics in the Department of Education confirmed that there are approximately 6000 high schools in the Republic. Gauteng alone has 2606 high schools across 83 cities countrywide. This implies that approximately 43% of national high schools are from this province. This research covered this population with the correct representation. Furthermore, the research captured the views of global maritime experts.

### 3.4 Selection of participants

Sampling is part of our daily life and the key concept thereof is representativeness. The sample from which we generalise 'truthfully' or 'faithfully' represents the population from which it is drawn (Mouton, 2006).

Purposive sampling was one of the strategies followed in the selection of the schools. The respondents had to be within the youth category as the focus was on

the secondary schools. Purposive sampling proved to be a successful approach when review and analysis were applied in conjunction with data collection.

The study was conducted at various high schools where Grade12 learners would form part of the sampling. A questionnaire supplemented by interviews was utilised to capture the views of the out-of-secondary-school youth and maritime international experts. The out of school youth was individuals from the sea cadets programmes at the South African Navy Training Institutions.

### 3.5 Measuring instrument

Measurability specification means that an attempt must be made to state goals in the terms that can be evaluated or quantified (Smith and Cronje, 1992). The researcher distributed questionnaires and also, simultaneously, used user-friendly technology to obtain inputs (through interviews) from industry experts. This technology was in the form of the internet or other relevant social media networks. The outcomes would be interpreted to establish learners' interest MET and whether they are aware of available career opportunities in the maritime industry. The quantitative approach would, therefore, be a useful numerical data collection tool to indicate trends.

The questionnaire was used to quantify the research. It was expected that the researcher would be able to uncover trends and opinions of the youth and industry experts about the importance of MET at secondary level in the South African public schools. This approach helped to delve deeper into the actual research question.

The questionnaire covered general knowledge of secondary education curriculum concomitant with MET. The structured questionnaires included multiple-choice items listing alternatives from which relevant response choices were to be made.

Provision was also made for respondents to respond to an open-ended item regarding their perspectives on the importance of MET. The researcher

administered the questionnaires personally and obtained them immediately on completion.

### 3.6 Data Collection

#### 3.6.1 Quantitative Method

The qualitative method was used where a questionnaire was distributed in Naval Training Institutions where recruits had just started with training (see Appendix B for letter requesting authority to gain access). 124 participants volunteered to participate in representing all the nine provinces of the Republic of South Africa. Furthermore, a questionnaire was distributed using SurveyMonkey (an online survey tool) to 46 maritime experts and six responses were received. These brought the total number of responses to 130 participants for the data collected from the quantitative method.

#### 3.6.2 Qualitative Method

The qualitative method of data collection was concomitantly used with the quantitative method. 25 maritime experts were invited to participate in interviews. Only 5 responded. The interview consent form was sent through email to participants.

### 3.7 Data Analysis

Qualitative analysis at large is a set of activities that come after the data is collected. It can start from the very beginning of the research and continue throughout the data collection process (Gubrium & Holstein, 2001).

The major purpose of many social science studies is to describe situations and events. The researcher observes and then describes what he has observed. Many qualitative studies aim primarily at description. An anthropological research, for

example, may try to detail the particular culture of some preliterate society and go further to examine why the observed patterns exist (Babbie, 2013).

Quantitatively, descriptive statistics were used to establish the importance of MET at the secondary level in public schools within the Republic of South Africa.

### 3.8 Validity of the Research

The term validity refers to the general concept about the credibility and accuracy of processes and outcomes associated with the research study (Guest, MacQueen and Namey, 2012). The validity of a measuring instrument may be defined as the extent to which differences in scores reflect true differences amongst individuals on the characteristics that we seek to measure, rather than constant or random errors. The validity of qualitative research is regarded as credibility and trustworthiness. Credibility refers to the notion of believing that the findings are enhanced through confirming evaluations and conclusions of participants.

### 3.9 Anonymity and Confidentiality

Respondents tend to be reluctant to provide interviewers with information on sensitive matters. In most instances, respondents are unwilling to participate because they regard the investigation as an invasion of their privacy. One strategy used to reduce these effects was to emphasise anonymity (Mouton, 2006). Where necessary fictitious names were used to ensure the anonymity of the participants.

### 3.10 Ethical Considerations

Ethics is the branch of philosophy concerned with intent, means and the consequences of moral behaviour. It is the study of moral judgment, right and wrong conduct. According to Gildenhuis (1991) ethics is a moral science, an exposition of what is good or bad and what is right or wrong. Ethical consideration were observed and practiced throughout the research project. The research

instrument was approved by the World Maritime University Research Ethics Committee (REC). All the participants gave their informed consent to voluntarily participate.

### 3.11 Summary

In these research a mixed methods approach was utilised as the chosen method. The research questionnaire and semi-structured interviews were used to collect data and purposive sampling assisted in narrowing the focus for the researcher. The instruments (questionnaire and interviews) provided the needed data. Findings from the collected data are presented in chapter 4.

## 4. PRESENTATION AND ANALYSES OF DATA

### 4.1 Introduction

This chapter presents the results and analyses of the study examining the importance of maritime education and training within the secondary education system in South Africa. The specific questions guiding the study were:

1. What is the importance of introducing maritime education and training at secondary public schools in South African?
2. To what degree or extent is maritime education and training offered in public schools?
3. How can the development and delivery of a maritime education curriculum at a secondary level in South Africa be optimized with reference to best practices in other jurisdictions?

In answering this question, it is intended that the outcome of the research will help in the reduction of youth unemployment and increase the South Africa involvement on maritime activities at an international level.

Regarding the responses received during the data collection process, 124 questionnaires were completed by members of the skill development programme in the SA Navy who are South Africans from the ages of 18 to 26 years and 6 (six) were completed by the maritime experts. Semi-structured interviews were conducted with people who have involvement in the maritime activities in South Africa. The same questions were asked in both the interviews and questionnaire with the possibility of expanding further with the interviews, given their semi-structured nature.

Items for responses were formulated and distributed using a questionnaire on SurveyMonkey and also physically administered to the youth as indicated below. The full set of question as administered is attached as Appendix A.

The questions were under two themes: education in general and maritime education specifically.

Participants were asked to give answers on a Likert Response format ranging from Strongly Disagree to Strongly Agree for some questions and for others give open answers.

#### 4.2 Results from the Questionnaire

As mentioned above, the questionnaire had two themes with related items and questions.

##### Theme 1: Education

- Question 2.1.1: The current secondary curriculum cover career guidance and career counselling. (Likert Response format).
- Question 2.1.2: Education is very important for a country like South Africa. (Likert Response format).
- Question 2.1.3: I am certain about career opportunities as a young person. (Likert Response format).
- Question 2.1.4: I have full access to educational tools. (Likert Response format)
- Question 2.1.5: Any other general comments on the education system of South Africa? (Open question).

##### Theme 2: Maritime Education

- Question 2.2.1: I am familiar with the concept of maritime education and training. (Likert Response format).
- Question 2.2.2: In my opinion, it is important that maritime education and training is part of the educational curriculum at the secondary level. (Likert Response format).
- Question 2.2.3: What, in your opinion, is the importance of introducing maritime education and training at secondary schools? (Open question)
- Question 2.2.4: How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be

optimised, taking into account the practices in other jurisdictions? (Open question)

- Question 2.3: Do you have any information about maritime education? If yes please state it in a sentence? (Open question).

The results from the questionnaire are shown below.

Figure 2 shows the of respondents per province

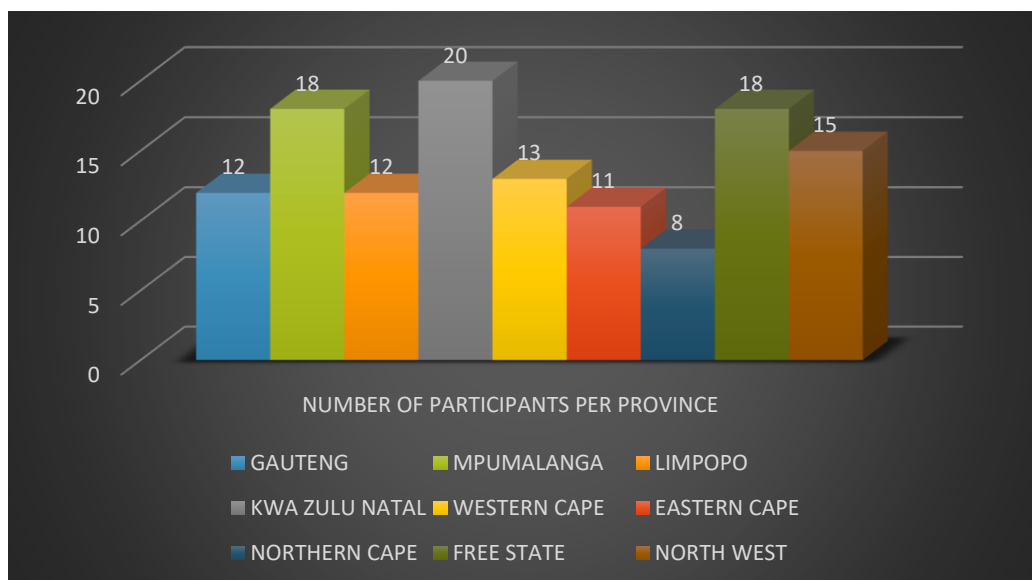


Figure 2: Number of youth participants per province

Figure 3 shows the number of respondents from the Western Cape Province.

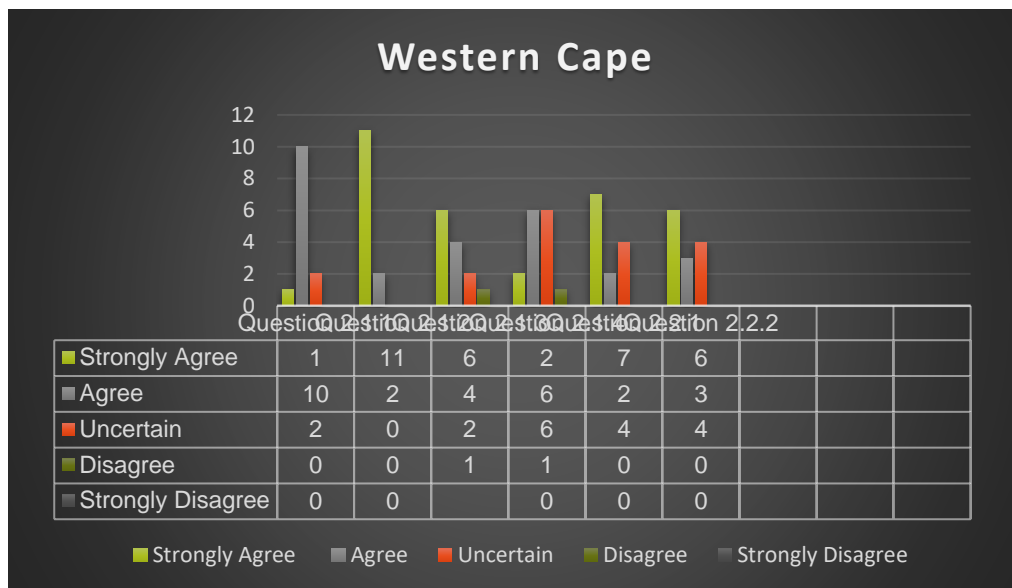


Figure 3: Western Cape Province response to the questions

The following responses were received from the Western Cape participants on the following questions on the questionnaire:

**Open question 2.2.3 of the questionnaire: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- So that learners know at an early age what maritime education and training is.
- Creating awareness and providing insights into the largest part and most valuable resources.
- Is to teach teamwork and educate students more about sea transport.
- It will teach the young generation the importance of maritime in our lives and gives them more future opportunities.
- To broaden the learners at school variety of choices for careers.

- For me now maritime training is still something that I am familiar with it.
- Maritime education and training at secondary school are important because it gives people/leaners better knowledge about their surroundings.
- So that learners can gain more knowledge and would want to study further once matriculated.
- So that young ones can obtain knowledge that they don't have and are not aware of.
- It is very important because a lot of people are not familiar with maritime studies so by teaching them or enlightening them it will be good.

**Open question 2.2.4 of the questionnaire: How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?**

Answers:

- the development and delivery of maritime education and training could be emphasised on in terms of workshops for students so they know about it.
- It will allow for better usage and protection of sea life and resources.
- Needs to become part of the school curriculum and practised either weekly or monthly.
- By giving some learners learnership straight after school if they don't go to study.
- I think there is a huge need from the department of education to deliver maritime studies.
- Provide more learning opportunities to the youth.

- It should be introduced bit by bit in schools since the kids have to get the foundation about it.
- I think it will transform our trade and staff because there will be a lot of competition meaning will be able to put more in the market.

Figure 4 illustrates the response received from the Kwa-zulu Natal Province.

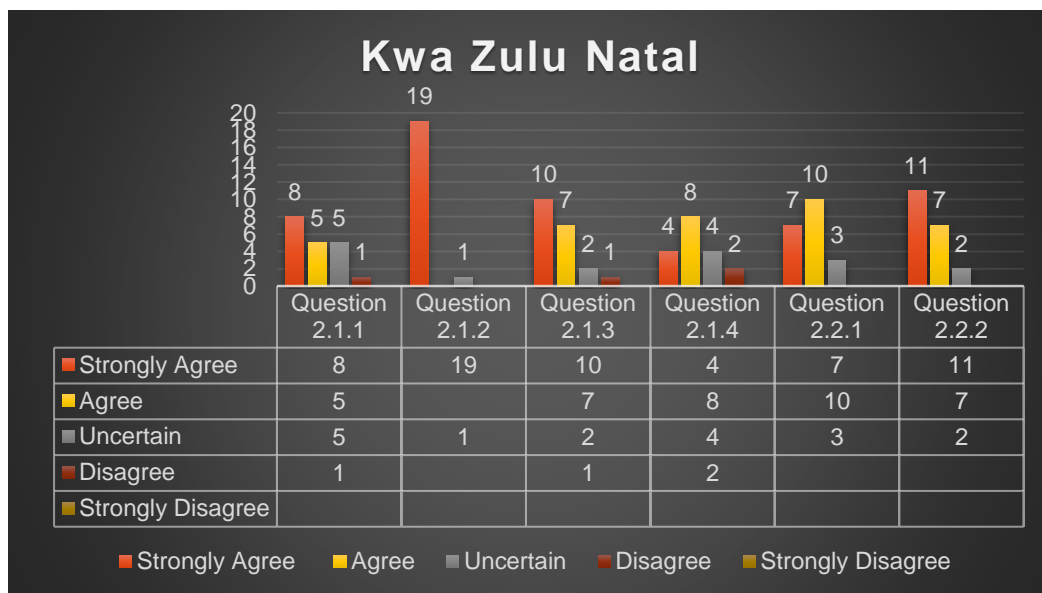


Figure 4: Kwazulu Natal Province response to the questionnaire

The responses received from Kwa Zulu Natal participants on the following questions:

**Open question 2.2.3 of the questionnaire: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- If the young people knew about maritime at an early stage they will grow up wanting to have vast information which will be valuable in the SA Maritime economy.
- It is helpful so that learners will know more about what happens in Maritime.
- For students who are willing to join maritime careers.
- It should be introduced to all high schools at the moment only a few high schools teach maritime/nautical science
- Maritime Practices is important because it teaches about transportation and security at sea.
- Maritime studies deal with sea import and exporting of goods, South Africa is one of the very few countries in Africa that have this, therefore, children who don't know that there is such studies need to be informed.
- So that they get the knowledge of commercial practice and seagoing.
- Most of the earth is covered with water education will improve and encourage more learners.
- To give information on what to import and export the goods in the country.
- So that learners will learn about shipping and logistics
- It is a scarce field in South Africa it is important as the economy depends on exports and imports by sea.
- Because the economy of the country depends on maritime business
- Access knowledge about the trade and relationship with other countries
- To educate
- Most of the world surface is covered with water

**Open question 2.2.4 of the questionnaire: How can the development and delivery of maritime education and training curriculum at a**

**secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?**

Answers:

- By introducing maritime opportunities everyone especially young children, for example, I found out about maritime six months after matric.
- Practicals will be a big challenge, especially in this coronavirus issue.
- Maybe two weeks or it must be included as a subject.
- Students should be exposed to the industry through organised education tours/visits onboard ships every once in a while.
- More practical engagement.
- In many ways.
- Maritime education it to do the right thing in the country excellent.
- Develop by improving the country's wealth and by delivering strong and sustainable knowledge.
- By implementing new strategies.
- Introduced to a younger generation at a young age.
- Add it into the curriculum as a compulsory subject

Figure 5 shows the answers from the Free State respondents.

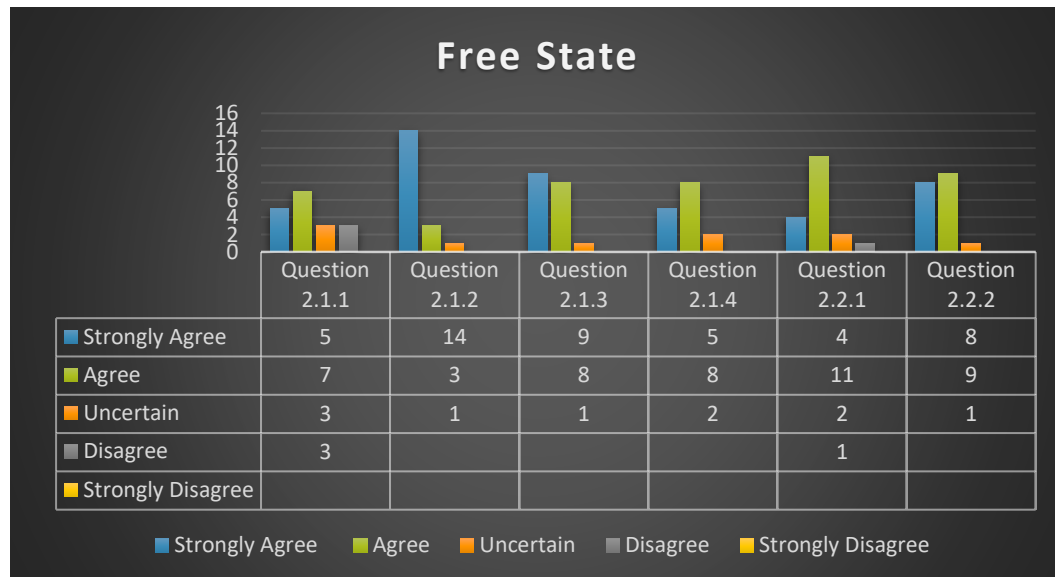


Figure 5: Free State Province response to the questionnaire

The responses received from Free State participants on the following questions:

**Open question 2.2.3: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- Because 90% of goods are imported by sea
- To draw the attention of secondary school attenders to maritime practice so that maritime education becomes familiar to other coming education.
- As it is based at a secondary level after studying university.
- To instil this education at a young age.
- People will know the importance of our people who are going out to protect our ships.
- Learning about trade.

- More people will know about it and more people will learn more about it.
- It will you an opportunity to learn more and be adventures
- So that the learners from an early stage of education can know about opportunities available out there.
- It will be informative to introduce maritime education at secondary school because most learners don't know about maritime education.

Figure 6 shows the results from Mpumalanga Province.

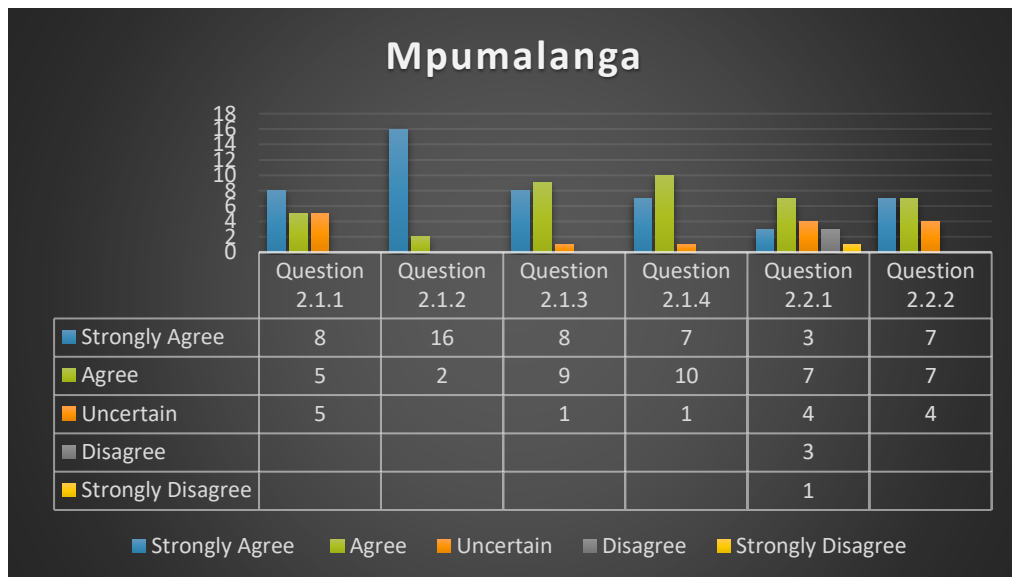


Figure 6: Mpumalanga Province response to the questionnaire

The responses received from Free State participants on the following questions:

**Open Question 2.2.3: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- It will introduce more information and experiments on harvesting for those who want to commercial.
- Some can be interested and like to work as a maritime.
- To educate the youth of South Africa about maritime and career opportunities in the maritime world.
- Introducing maritime in secondary is important because it will give learners more information concerning the marine and how it can be conserved.
- It will educate young people from an early stage.
- So that our fellow learners can be informed about the importance of maritime education and one can create a career path through it.  
For the youth to be in knowledge of it and have ideas to better it.
- Make sure that learners are aware of the fact that most goods are being transported through the sea.
- To know more about what they don't know.
- To make learners aware of sea transportation as early as secondary than to wait for tertiary.
- To create job opportunities for your children as they grow.

**Open question 2.2.4: How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdiction?**

Answers:

- We take them to the places where they can conduct training so that they can experiment it themselves.
- Can develop knowledge about maritime which some can help after being educated.

- By training more people and send them out to secondary schools to present and draw the youth to the world of maritime.
- Then can be a week once in while when learners are taken for practical training.
- Educators must be knowledgeable about it.
- By insourcing personnel from maritime organisation to teach student or conduct campaigns.

Figure 7 shows answers from the North West respondents.

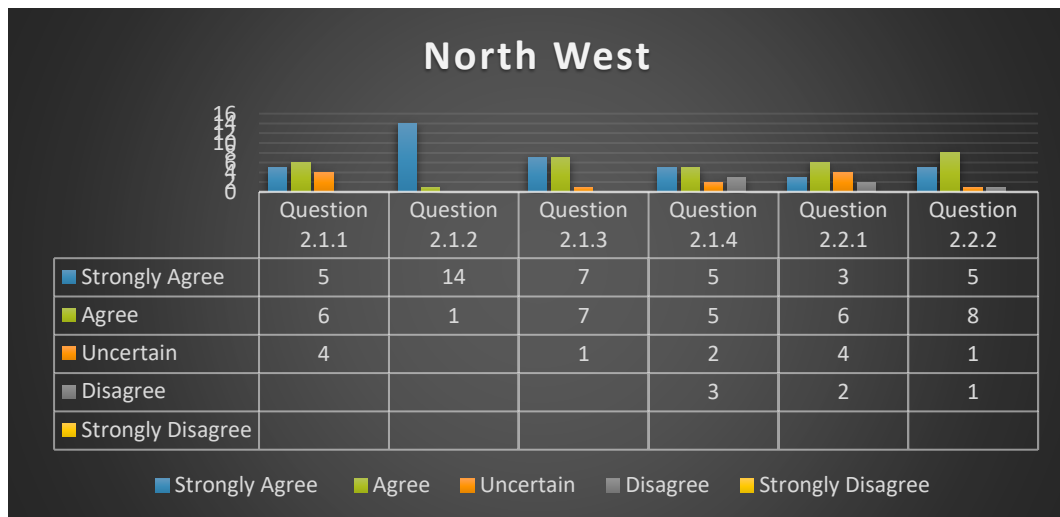


Figure 7: North West Province response to the questionnaire

The responses received from North West participants on the following questions:

**Open question 2.2.3: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- It makes it easier for young people to make the correct decisions especially about maritime careers.

- To ensure how items from other countries they got to their country.
- So that young people or future generations could learn or know about maritime.
- A lot of people are not informed and aware of careers or maritime studies, as young people, we start researching when we get to varsity or already in other careers.
- To help learners know and understand everything about maritime education and training.
- Awareness contribution in career taking of learners.
- For pupils who are interested in going the arms of service that deals with maritime education to know it and understand it better.
- Is to learn how it works so that students when they are done they can improve its capabilities.
- So that learners can get the concept of sea education and training.
- It will give candidates information about shipping and trade export and imports and open ways for job creation in the future.
- To equip learners with what happens in the world and make them see there are other opportunities besides what they know

**Open question 2.2.4: How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdiction?**

Answers:

- It should be made available to all provinces so that everyone knows maritime.
- By doing practicals
- By introducing swimming seamanship programmes and fishery

- By having the best teachers who know how to teach learners at the secondary level.
- First as part of curriculum practical activities career exhibitions.
- Come together and discuss this matter further coming up with solid decisions
- Learners should be introduced to maritime practices and education by making them familiar to the environment

Figure 8 illustrates the respondents from Limpopo Province.

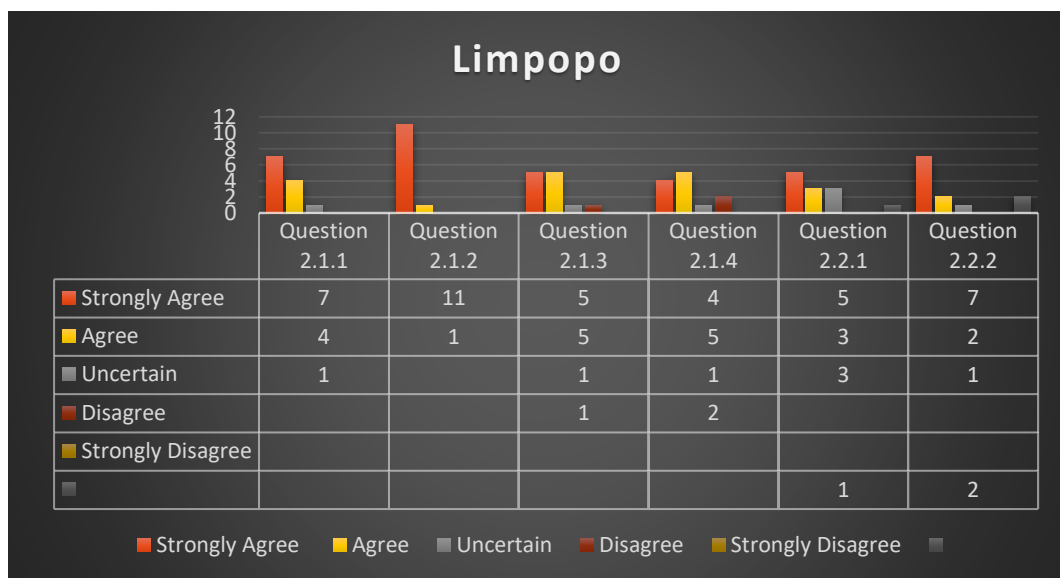


Figure 8: Limpopo Province response to the questionnaire

The responses received from Limpopo participants on the following questions:

**Open question 2.2.3 from the questionnaire: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- Our youth we need to know maritime practices
- To help learners to understand this education at an early stage
- For people to know more about the maritime process and be able to do their business with knowledge of where things come from
- Children must have knowledge and skills at a young age so that they don't struggle with unemployment.
- To teach learners about the different sources of the economy that are used out there that require maritime education
- Nothing. It should not be introduced
- So that learners can know about the sea and transportation of the goods at sea.
- Will improve the level of education at training.
- It will help with education
- The early introduction will instil the interest and urge for learners to learn more about maritime education.
- So that learners/citizens can know about maritime affairs at a young age.

**Open question 2.2.4 from the questionnaire: How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?**

Answers:

- Students must travel to sea points for practicals from all of RSA.
- Every school should have maritime subjects but they should be optional.

- Teaching students who are still in high school so they can have some understanding at an early stage
- The government should make publications and include maritime education on the curriculum.
- By including it into the curriculum
- It will be useless as most people don't know what is maritime education is or want to pursue it as a field.
- Increase the knowledge
- Most learners will have open opportunities for the careers of their own choice.
- Providing lessons about maritime education and issuing this education freely to learners.
- Making sure that every school in the country has lessons in maritime education.

Figure 9 introduces the results from the Eastern Cape.

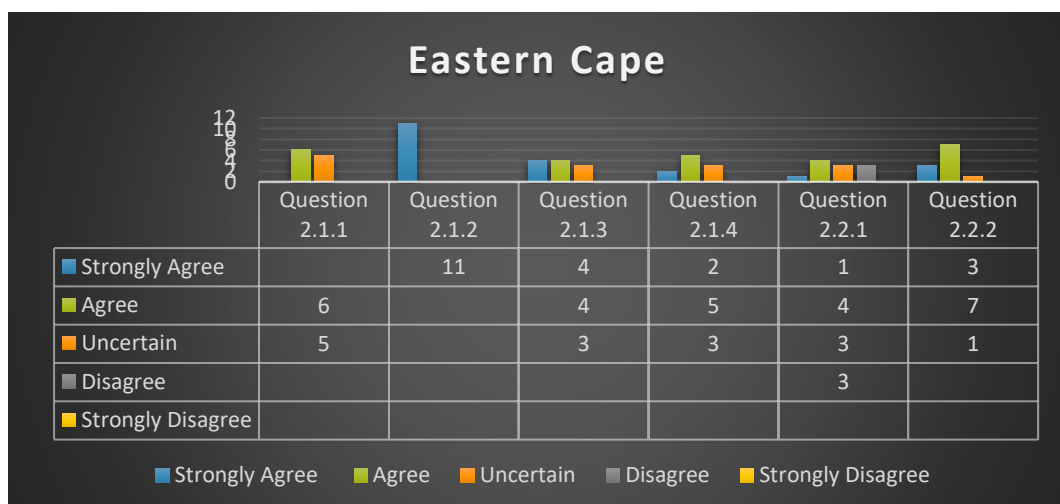


Figure 9: Eastern Cape Province response to the questionnaire

The responses received from Eastern Cape participants on the following questions:

**Open question 2.2.3 from the questionnaire: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- Let the youth have information and be familiar with maritime education.
- So learners may be more informed on the matter.
- It will teach young kids about shipping something we weren't taught.
- For people to know more about how goods are being transported and the effect it on us.
- So that students could be familiarised with maritime education as young as they are.
- It is important because learners may be informed about maritime practices and open more opportunities career-wise.

**Open question 2.2.4 from the questionnaire: How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?**

- Everyone must be accessed or afford to study maritime studies even in public schools and institutions.
- Introduce it at an early stage gradually.
- There has to be a system that will available to learner to learn and train in maritime studies.

Figure 10 shows the results from the Gauteng respondents.

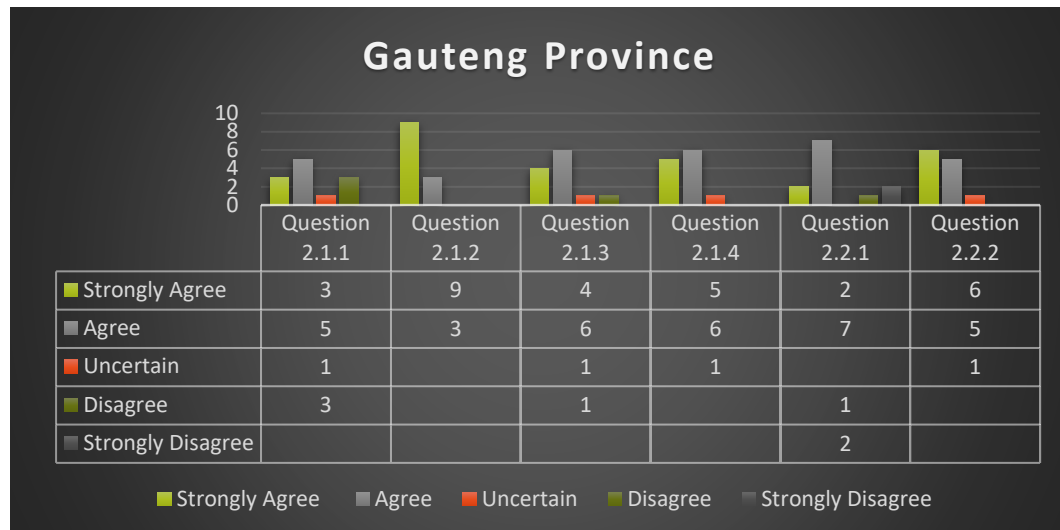


Figure 10: Gauteng Province response to the questionnaire

The responses received from Gauteng participants on the following questions:

**Question 2.2.3 from the questionnaire: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answers:

- To familiarise learners or the youth about the environment with regards to maritime education.
- Not every learner wants to study science this will make learners who have an interest in maritime fulfil their dreams.
- It will expose the students to broaden their career paths, it is also for their enrichment
- To introduce learners to maritime education so that they can get more informed of opportunities out of the maritime business.

- Will introduce learners to water.
- To give learners more information about what happens at sea since most of the goods are transported through the sea lines.
- Most young people do not know maritime education including careers at sea.
- To be well informed about the variety of ships and their functions.
- For learners to be aware at a young age.
- So that learner can have at least basic knowledge about it and maybe study further on it.

**Open question 2.2.4 from the questionnaire: How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?**

Answers:

- let it be easily available and accessible for those who have interest
- It can be introduced with visits to harbours and ships after the visits the traditional way of textbooks.
- It needs to start with the Department of education and the government of RSA.
- By putting capable qualified teachers on board.
- Learners can be taken for exhibitions and also invite experts in this field to present maritime education.
- Making a new module of maritime in secondary school so teachers may know of it.
- For a more practical approach take the students to places that provide workshops for maritime education.
- It can guide the youth to be interested in a career involving maritime trade.

- Using presentations and technology.
- By starting with basic developments.

Figure 11 presents the results from the Northern Cape.

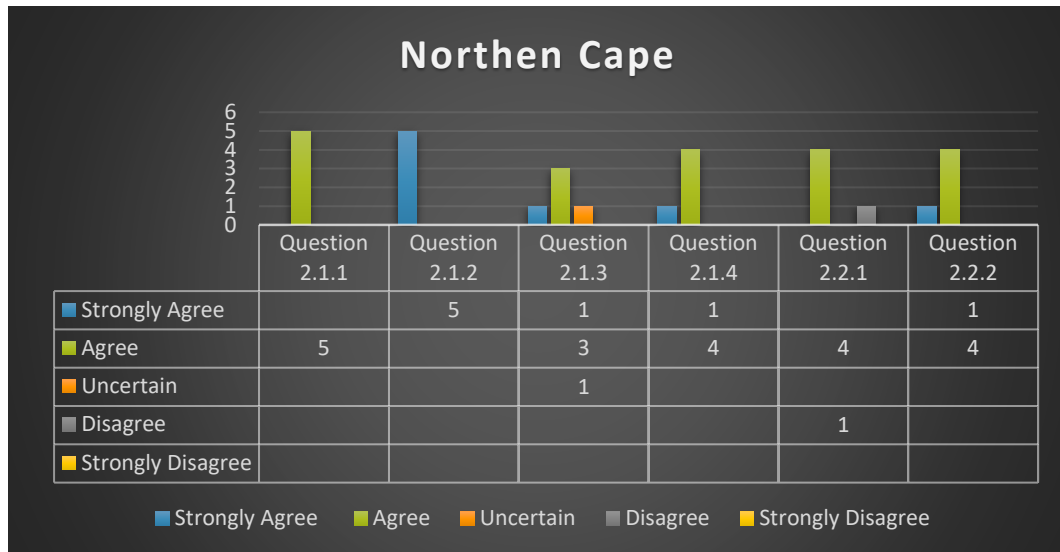


Figure 11: Northern Cape Province response to the questionnaire

The responses received from Northern Cape participants on the following questions:

**Open question 2.2.3 from the questionnaire: What, in your opinion, is the importance of introducing maritime education and training at secondary schools?**

Answer:

- Yes so that learners can know more about shipping and maritime.

**Open question 2.2.4 from the questionnaire: How can the development and delivery of maritime education and training curriculum at a**

**secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?**

Answer:

- *No answer was provided on this question by learners from the Northern Cape.*

Figure 12 shows the overall answers to the Likert Response format questions.

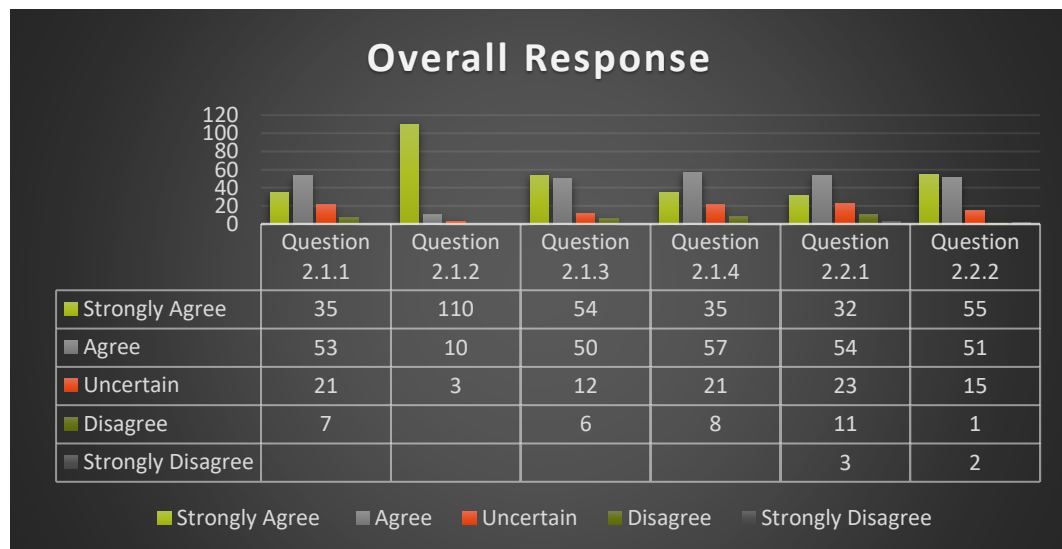


Figure 12: Overall Chart on the questionnaire

Figure 13 shows the demographics of respondents to the questionnaire.

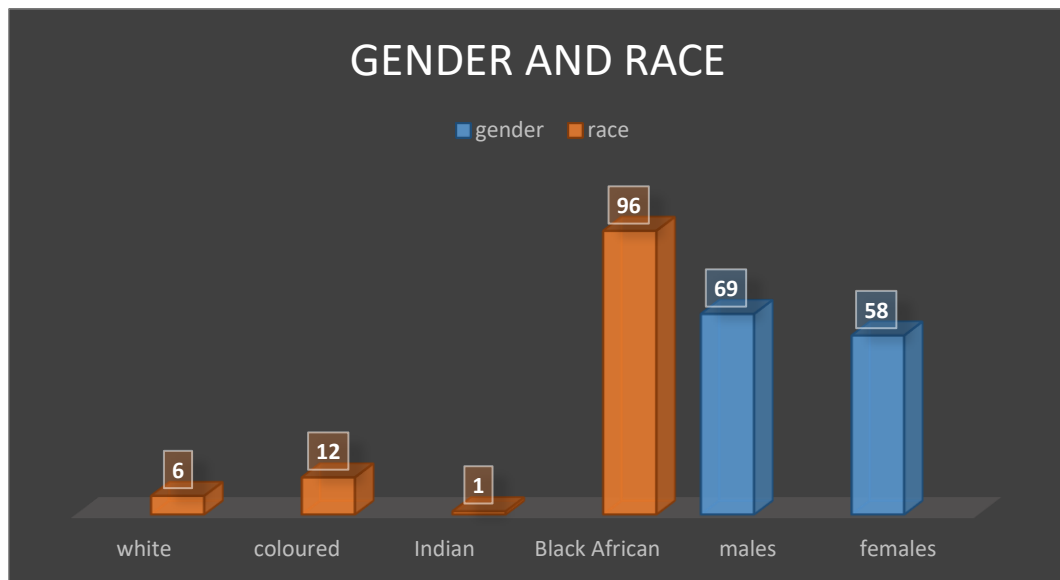


Figure 13: Gender and Race of participants

#### 4.3 Results from Semi-structured Interviews

The results from the semi-structured interviews are presented below. All names have been anonymised per the ethics requirements of the study. Answers are in italics.

**The response from Interviewee 1 from the Department of Environmental affairs/ Senior government official in South Africa and a member of the Operation Phakisa working group.**

Q1 The current secondary curriculum covers career guidance and career counselling?

*Disagreed*

Q2 Education is very important for a country like South Africa?

*Strongly agreed*

Q3 I am certain about career opportunities as a young person?

*Neither agreed nor disagreed*

Q4 I have full access to educational tools?

*Disagreed*

Q5 Any other general comments on the education system of South Africa?

*He answered that the secondary education system lacks most environmental aspects and even career counselling is limited to events such as Department of Environmental Forestry and Fisheries: marine week which is hardly coordinated with initiatives from SAMSA or even DEFF: Terrestrial Biodiversity Indaba*

Q6 I am familiar with the concept of maritime education and training?

*Agreed*

Q7 In my opinion, it is important that maritime education and training is part of the educational curriculum at the secondary school level? *Strongly agreed*

Q8 What, in your opinion, is the importance of introducing maritime education and training at secondary schools?

*He answer was that the youth need to know maritime is an option and not only through SAMSA training or Transnet training. They need to know they can aspire to be in the sector easily. If it is introduced at that level, the increased interest may even reduce the required fees for studying maritime studies.*

Q9 In your opinion, to what extent is maritime education and training offered in secondary schools in South Africa?

*Answer: South Africa is surrounded by the oceans, it is important. We have international oceanographic and maritime engineer doing work in South Africa which if the education was readily available it would increase interest from those in the vicinity of the ocean and it will reduce the influx in metros.*

Q10 How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions? *Answer: So far, there is a level of Maritime education in certain schools. Western Cape has introduced Marine Protected Areas and Private schools are educating learners on marine protected areas. There needs to be more, ocean exploration, seismic surveys in the ocean, tourism in the marine, commercial fishing, marine biologist etc. There are a lot of avenues that the curriculum could encourage maritime education in secondary schools, particularly taking into account that the curriculum is set by the National Department. The small challenge may be having skilled and competent teachers in maritime training, particularly at teachers' salary unless outsourcing teachers from organisations such as UKZN, CPUT, UCT,*

*Stellenbosch, SANParks, EKZNW until there is availability pool of enough competent teachers.*

## **Response from Interviewee 2 from Maritime ISPS Training and Assessments**

Q1 The current secondary curriculum covers career guidance and career counselling?

*Neither agreed nor disagreed*

Q2 Education is very important for a country like South Africa?

*Agreed*

Q3 I am certain about career opportunities as a young person?

*Agreed*

Q4 I have full access to educational tools?

*Neither agreed nor disagreed*

Q5 Any other general comments on the education system of South Africa?

*Unrealistic expectations are a problem*

Q6 I am familiar with the concept of maritime education and training?

*Agreed*

Q7 In my opinion, it is important that maritime education and training is part of the educational curriculum at the secondary school level? *Neither agreed nor disagreed*

Q8 What, in your opinion, is the importance of introducing maritime education and training at secondary schools?

*To assist students in choosing a career*

Q9 In your opinion, to what extent is maritime education and training offered in secondary schools in South Africa?

*Unknown*

Q10 How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?

*By ensuring world-class South African education standards.*

**Response from Interviewee 3 - Senior Staff Officer Human Resource Strategist**

Q1 The current secondary curriculum covers career guidance and career counselling?

*Agreed*

Q2 Education is very important for a country like South Africa?

*Strongly agreed*

Q3 I am certain about career opportunities as a young person?

*Agreed*

Q4 I have full access to educational tools?

*Strongly agreed*

Q5 Any other general comments on the education system of South Africa?

*I am of the opinion that the education system is haphazard and do not address critical skills shortage pivotal to economic development*

Q6 I am familiar with the concept of maritime education and training?  
*Strongly agreed*

Q7 In my opinion, it is important that maritime education and training is part of the educational curriculum at the secondary school level? *Strongly agreed*

Q8 What, in your opinion, is the importance of introducing maritime education and training at secondary schools?

*South Africa is a maritime nation, therefore it is prudent that learners should be taught about the significance of the maritime sector to South Africa*

Q9 In your opinion, to what extent is maritime education and training offered in secondary schools in South Africa?

*To a lesser extent as maritime education is offered by very few provinces in the country. Even there is a limitation to those few provinces that offers its*

Q10 How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?

*The Department of Basic Education should ensure that maritime education is introduced at the secondary level throughout all the provinces in South Africa. The involvement of the maritime sector should not only be limited to coastal areas.*

**The response from Interviewee 4 from the Cape Peninsula University of Technology Maritime Studies Department.**

Q1 The current secondary curriculum covers career guidance and career counselling?

*Agreed*

Q2 Education is very important for a country like South Africa?

*Strongly agreed*

Q3 I am certain about career opportunities as a young person?

*Strongly agreed*

Q4 I have full access to educational tools?

*Strongly agreed*

Q5 Any other general comments on the education system of South Africa?

None

Q6 I am familiar with the concept of maritime education and training?

*Strongly agreed*

Q7 In my opinion, it is important that maritime education and training is part of the educational curriculum at the secondary school level? *Agreed*

Q8 What, in your opinion, is the importance of introducing maritime education and training at secondary schools?

*It would allow students at an early age to become aware as well as give them a possible option to follow a career in MET or the industry at large.*

Q9 In your opinion, to what extent is maritime education and training offered in secondary schools in South Africa?

*Currently in South Africa, only 4 universities are offering seagoing and minimal postgrad as well as shore-based courses, with about 4 high schools offering marine-related subjects.*

Q10 How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?

*Firstly, it has to be fully accredited by the Department of Basic Education as credit-bearing electives. Furthermore, it has to be introduced to more schools in even urban areas around the country. However, to increase the visibility of MET in secondary level means there would be an influx at tertiary level and in SA there is not enough capacity as yet.*

## 5. DISCUSSION OF FINDINGS

### 5.1 Introduction

The data was presented in Chapter 4. The focus of this chapter is to discuss the findings, make recommendations for possible further discussion and give a conclusion. Based on the previous chapters, it is apparent that education is very important in building a society. In this chapter, the discussion will be in understanding and linking the importance of maritime education to the broader education system in South Africa and the possible impact on the maritime industry and career opportunities for the youth. The analysed data will be discussed for further recommendations.

### 5.2 Summary of the study

The study aimed to investigate and explain the importance of maritime education and training within the secondary education system in South Africa with a focus on public secondary schools and their potential role in building inclusive growth for the country. The objective was to ascertain the innovations that the post-apartheid government has developed and achieved in creating a globally competitive maritime education system.

The study reveals that education whether formal or informal is a very important process for individual and societal development. South Africa needs to invest more in education, especially specialised education. The big dropout rate from the secondary school level is an area of concern.

Thus, with the emphasis on the importance of education, particularly for the youth, more focused education that addresses the needs of the various industries such as maritime is needed. The research also indicates that industry-based education such as maritime is highly specialised and very expensive. South Africa still has an imbalanced society, where blacks South Africa still struggle to access basic education.

Despite the societal imbalances, South Africa has introduced Maritime High Schools in other parts of the country namely Durban, Cape Town and the Eastern Cape. South Africa continues to invest in education. The concept of MET secondary/high schools is still at an inception stage with big expectations and hope from the government that it will create the much needed employment opportunities. It is important to focus on education and awareness because maritime correlates with most economic activities because of globalisation and the open market system of South Africa.

The lack of understanding of the maritime industry in South Africa is visible, and it is clearly indicated on the responses in chapter 4. This is coupled with the lack of research available within this domain in terms of people development and management. The effects of the segregation-based apartheid education system in South Africa still persist when it comes to the distribution of maritime education and training at the secondary school level.

### 5.3 Summary of responses to questions that were asked

#### 5.3.1 Question 1 of the questionnaire

The current secondary curriculum cover career guidance and career counselling.

There seems to be agreement from the majority of the participants. About 53 from the 125 participants agrees and 35 of them strongly agreed. 21 are uncertain and 7 disagreed. This indicates that about 28 of the 125 may not know about career opportunities and what factors to consider when choosing a career path. 28 out of 125 is a big number from a percentage perspective. The possibility is that some secondary do not offer career guidance in both formal and informal terms.

#### 5.3.2 Question 2 of the questionnaire

Education is very important for a country like South Africa.

A large number of participants - more than 80% strongly agreed that education is important for the country. 8% agreed and 2.4% were uncertain. 9.6% did not answer this question. The conclusion is that education is viewed as an important factor in growing the country.

#### 5.3.3 Question 3 from the questionnaire

I am certain about career opportunities as a young person.

Most of the participants from the 120 young participants answered this question positively whereby 43.2% strongly agreed, 40% agreed, 9.6% were uncertain and 4.8% disagreed. The maritime industry has links with almost every industry and when learners know how the industry works it will assist in increasing the knowledge base.

#### 5.3.4 Question 4 from the questionnaire:

I have full access to educational tools.

The percentage of participants that strongly agreed with this question was 28%. 46% agreed and 17 percent were uncertain and 6.4% disagreed. This information indicates that the situation has improved as in the literature review it was indicated that most young South Africans do not have the financial support as a result of which they drop out of secondary school. These results support the notion that South African secondary attainment has increased from 39.6% to 48.5% from 2005 to 2015.

#### 5.3.4 Question 5 from the questionnaire:

Any other general comments on the education system of South Africa?

The comments were that the education system of South Africa is improving via technology. The system needs an upgrade and should focus on learners' interest and ideas on what they think. The Department of Education needs to introduce more advanced modules on the national curriculum and offer extra classes. South Africa's education system has failed today's generation.

### 5.4 Theme 2: Maritime Education

#### 5.4.1 Question 6 from the questionnaire:

I am familiar with the concept of maritime education and training?

26% of the participants strongly agreed, 43% agreed, 18% were uncertain, 9% disagreed and 2% strongly disagreed that they are familiar with the concept of maritime education and training. 2% of participants did not answer this question.

#### 5.4.2 Question 7 from the questionnaire

In my opinion, it is important that maritime education and training is part of the educational curriculum at the secondary level.

44% of the participants strongly agreed, 41% agreed, 12% were uncertain and 0.8% disagreed. 2% strongly disagreed and 1% did not answer this question

#### 5.4.3 Question 8 of the questionnaire:

What, in your opinion, is the importance of introducing maritime education and training at secondary schools?

This question was not answered by the 125 participants. Most answers came from the experts (see chapter 4).

#### 5.4.4 Question 9 of the questionnaire:

How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdictions?

This question was not answered by the 125 participants. Most answers came from the experts (see chapter 4).

#### 5.4.5 Question 10 of the questionnaire:

Do you have any information about maritime education? If yes, please state it in a sentence?

This question was not answered by the 125 participants. Most answers came from the experts (see chapter 4).

## 5.5 Findings and Implications

The findings indicate that most of the participants do agree on the importance of education for a country like South Africa. The correlation between normal education and maritime education is very clear. The need for improvement of the education system as a whole and the inclusion of the maritime into the curriculum is recommended by the experts and the youth that participated in the study, although it is clear that most of the young participants had no idea what maritime education and training is. This was demonstrated by how the maritime questions were answered in comparison to the general questions on the education system. Many of the participants omitted to answer the maritime specific questions and of those who answered, very few of them seemed to understand what the maritime industry is.

The study shows that South Africa has made progress in improving the education system and has made a big investment in education over the years. However, the dropout rate remains at an alarming rate due to the societal imbalance. Despite the imbalance in the society, the study confirms that education is a very important process for individual and societal development and that it enables or empowers an individual to have the ability make insightful judgements based on the knowledge provided.

The concept of secondary maritime school is not a new. It has been implemented in South Africa since 1995. This means that for 25 years, maritime schools have been existing. One challenge, however, has been accessibility by those who do not have the economic power. Additionally, the geographical location of such school is in the white privileged areas which are very far from the majority of citizens. The government has embarked on a campaign to develop public maritime schools.

Furthermore, the study shows that although South Africa has invested in the establishment of maritime secondary schools there is still no accredited national curriculum, and there is a lack of qualified teachers both in the mainstream

education system and specialised environment such as maritime. The teacher-learner ratio is still a challenge and also the quality of teachers. However, the study reveals that most young South Africans have access to learning tools which is a good sign. Most importantly there are signs that maritime education and training at a secondary level is acknowledged as being important. Access and finances remain a challenge for most South Africans who may have an interest in maritime.

#### 5.6. Recommendations

Based on the scope of the study and the practical limitations of the statistical analysis, it is recommended that future research will focus on the woman or girl child. This will be of interest as it will align with the International Maritime Organisation (IMO) campaign on women in maritime and explore what South Africa's initiatives in this regards. There is a need to focus on maritime not just because it will create awareness and potential career opportunities but because of its correlation to all other industry from transportation, pharmaceutical, environmental biodiversity and so forth.

Maritime is not just about seafarers and navies. There is more that this particular industry can offer the country and it is essential for everyone to know and understand this including politicians. This is a global industry that has a rich history. As global as it is, it is equally a much closed industry. However, through education, change can occur in the way the country relates with the industry. More deliberately and consistent programmes such as Operation Phakisa need to be embraced and it is important to attract the correct role players into the discussion and the programme especially the private sector.

The Department of Education should be able to attract either former or current seafarers, maritime financiers and other stakeholders as guest teachers to give the much needed practical details other than textbook-based information.

## 5.6. Conclusion

The study through its findings has sufficiently demonstrated the importance of maritime education and training at the secondary school level in the Republic of South Africa. It has shown that young people are interested in maritime education and that South Africa does embrace education as it is a very important process for individual and societal development. The study also revealed that the general education system of the country has numerous challenges and the previously disadvantaged groups continue to struggle in gaining access to education due to lack of money or financial support. Furthermore, there is an annual estimated figure of 1 million young people dropping out of the secondary level education. This significant dropout rate correlates with the increasing unemployment rate amongst young people. Education is not the guarantee for employment; however it is a guarantee for individual development and that of the society.

South Africa must appreciate the implementation of a maritime programme in secondary schools. The current implementation, particularly in public schools, cannot resolve the challenge regarding the quality of teaching methods and the knowledge and experience of the educators. The situation at the moment is rather unacceptable. With the initiatives of Operation Phakisa some maritime schools were approved with a curriculum that covers Maritime Economics and Nautical Science. However, many maritime learners' performance remains extremely bad, due to several reasons such as lack of equipment and proper exposure to the maritime environment for both the learners and educator and a lack of understanding and funding for such initiatives. Specialised education needs specialised funding and normally there is trial and error with or without benchmarking with best practices from other jurisdictions.

The maritime education is important for South Africa and it has the potential to be a good vehicle to address the youth unemployment and lack of maritime knowledge amongst other social challenges. Maritime education will not be immune from the challenges or anomalies faced by the general education system, however, if the country uses the industry based approached were the industry drives the training

needs and link it at lower levels education system in our case secondary school level, not every maritime practitioner has got a university education.

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## Appendix A: Questionnaire



### 1. Part 1: BIOGRAPHICAL INFORMATION

- 1.1 I am completed my matric/will complete matric in the year: \_\_\_\_\_
- 1.2 Highest level of education: \_\_\_\_\_
- 1.3 Population Group: \_\_\_\_\_
- 1.4 First Language: \_\_\_\_\_
- 1.5 Gender: \_\_\_\_\_
- 1.6 Citizenship: \_\_\_\_\_
- 1.7 Province: \_\_\_\_\_

### 2. Part 2: THE IMPORTANCE OF MARITIME EDUCATION AND TRAINING WITHIN THE SECONDARY EDUCATION SYSTEM IN SOUTH AFRICA

#### 2.1 Theme 1: Education

- 2.1.1 The current secondary curriculum covers career guidance and career counselling?
- 2.1.2 Education is very important very important for a country like South Africa?
- 2.1.3 I am certain about career opportunities post as a young person?
- 2.1.4 I have full access to educational tools?
- 2.1.5 Any other general comments on the education system of South Africa?

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

#### Comments/inputs

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#### 2.2 Theme 2: Maritime Education

- 2.2.1 I am familiar with the concept of maritime education and training?
- 2.2.2 In my opinion, it is important that maritime education and training is part of the educational curriculum at the secondary level
- 2.2.3 What, in your opinion is the importance of introducing maritime education and training at secondary schools?
- 2.2.4 How can the development and delivery of maritime education and training curriculum at a secondary level in South Africa be optimised, taking into account the practices in other jurisdiction?

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
<b>Comments Box</b>				
<b>Comment Box</b>				

- 2.3. Do you have any information about maritime education if yes please state it in a sentence

I sincerely hope you enjoyed completing this questionnaire. Thank you for your interest and cooperation. Wishing you all the best in your future endeavours

## Appendix B: Letter of Authority to Gain Access



### **defence intelligence**

Department:  
Defence  
REPUBLIC OF SOUTH AFRICA

DI/DDS/R/202/3/7

Telephone: 012 315 0660  
Fax: 012 326 3246  
Enquiries: Col J. van Wyk

Defence Intelligence  
Private Bag X367  
Pretoria  
0001

July 2020

#### **AUTHORISATION TO CONDUCT RESEARCH IN SA NAVY TRAINING INSTITUTIONS FOCUS GROUP AGE FROM 18 TO 35 YEARS OLD**

1. Receipt of a request letter IML/R/01003482MC to conduct research is hereby acknowledged.
2. Permission is hereby granted from a security perspective to Cdr P.M. Kuhlase to conduct research on "the importance of Maritime education and training within the secondary education system in South Africa".
3. Access to DOD information is however granted on condition that there is adherence to inter alia Section 104 of the Defence Act (Act 42 of 2002) pertaining to the protection of DOD Classified Information and the consequences of noncompliance. It is furthermore essential to take note of the Protection of Personal Information (POPI) Act 4 of 2013 – during collecting, processing, storing and sharing another entity's personal information – the responsible party will be held accountable should personal information of the target group be abused or compromised in any way.
4. For your attention.

(T.G. BALOYI)

**ACTING CHIEF DIRECTOR COUNTER INTELLIGENCE: BRIG GEN**

DISTR

For Action

SAS Immortelle

(Attention: Cdr P.M. Kuhlase)

Internal

File: DI/DDS/R/202/3/7