

# Reviewing Human Resources Development Strategies of Merchant Navy Seafarers in South Africa and Australia

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## Purpose, orientation and motivation for study

The purpose of this article is to review human resources development strategies for merchant navy seafarers in two southern hemisphere countries: South Africa and Australia. This is done by assessing the labour market and training contexts for seafarers in both these countries. Through its empirical comparative focus, this paper provides HRD insights into current practices in South Africa and compares these findings with evidence from Australia. Through foundation work in South Africa and comparative analysis with Australia this article identifies significant 'common causes' and challenges facing both countries in their efforts to comply with 'outmoded' STCW training requirements and the lack of training berths on compliant vessels servicing these respective countries.

## Research Design and Approach

A comparative case study design was used that drew on a mixed method approach. The investigators utilised both primary and secondary quantitative and qualitative data to support their claims. Quantitative data consisted of seafarer labour market statistics and results from maritime stakeholder surveys in South Africa (2013) and Australia (2013). The qualitative data consists of in depth interviews with key HRD stakeholders in both countries. A third point of data collection was a review of extant HRD policies in these countries.

## Findings

Indications are a collaborative approach between the nations has merit beyond just sharing research insights. Some of the challenges and opportunities that emerge from the data are summarised below.

- Lack of ship ownership. This has profound consequences for training berth availability for officer and ratings experiential training.
- Lack of alignment between South Africa's national qualifications framework (NQF) and the IMO's STCW requirements for certification. This represents a tension between national and global imperatives on training of seafarers. The NQF advocates for recognition of prior learning (RPL) as a means of obtaining certification of officers. However RPL has no place in STCW requirements. This raises questions about the relevance of STCW training requirements.
- Difficulty recruiting young people into the profession.
- Opportunities may lie in operationalising robust HRD solutions that include recognition of prior learning, dedicated training vessels and increased policy coordination amongst stakeholders.

**Keywords:** Human Resources Development, seafarers, South Africa, Australia, training berths, authentic assessment

## 1. Introduction

The first purpose of this study is to assess the seafaring labour markets and training contexts in two southern hemisphere countries: South Africa and Australia. The second purpose is to advance adult learning and policy solutions that can combine to remediate the critical shortage of training berths in these two countries. The trend in the academic and industry literature is to predominantly focus on

comparative studies of Western European and Asian seafaring labour markets and training strategies. By providing empirical insights into current practices in South Africa and comparing these findings with evidence from Australia, this paper aims to extend our current understanding. Through foundation work in South Africa and comparative analysis with Australia, we identify common issues facing merchant marine seafarers in these countries. The first part of the paper discusses the labour market for South African and Australian seafarers whilst the latter half of the paper posits potential policy interventions for both countries as a result of comparative findings. Given that some of the industry data presented in this paper indicate a predicted growth in the maritime industry and as a result in the required workforce in both countries, the sustainable growth of attendant labour markets is a matter of national importance for both countries.

## **2. The South African Context**

The labour market for South African seafarers reached its peak in in the 1970s, with an estimated 7000 ratings and officers being employed in the merchant maritime sector. Since the 1970s, there has been a marked decline in the supply of seafarers, especially the number of officers available in the labour market. The current South African Maritime Safety Authority (SAMSA) database indicates that there are currently 1800 South African seafarers employed in the global merchant navy[1]. Of these only 473 are officers of various ranks with the balance of 1327 being ratings. This amount is minuscule when compared to the traditional maritime nations of Europe and Asia. Despite this, the current number of officers and ratings represent a substantive increase from 700 seafarers that were employed in the merchant navy in 2006 [2].

## **3. Demand**

South Africa (SA) enjoys 3.5% of the global sea-trade and the SA state argues that it needs to compete for its share of seafaring jobs commensurate with the percentage of global sea-trade it enjoys [3]. Based on SAMSA calculations, this translates into an aspirational goal of capturing approximately 49,000 seafaring jobs of the 1.4 million seafaring jobs available globally [3,4,5,6,7,8,9]. This total would include both officers and ratings. The South African Department of Transport [10] contends it needs to train between 1000 and 1600 officers a year in order to contribute to building a global supply of seafarers. This is opposed to the 240 officers that are currently trained every year [1]. Maritime academics and professionals [3-5] have been more sceptical about these figures but agree that in order for SA to be considered a global supplier of officers a sufficiently large pool of officers needs to exist. Participants (P1-P5 & P6) also suggested that any human resources development strategy needs to simultaneously ensure that there are sufficient numbers of seafarers to service national and global needs. For example in 2012, 11,049 merchant ships entered South African ports, none of which are flagged in SA or are registered in SA. An estimated 230,000 foreign (i.e. non South African) crew worked on these vessels. Government and domestic policy makers now contend that this is no longer an acceptable practice given South Africa's high national unemployment rate[1-10].

## **4. Reasons for the decline of South African seafarers**

Interviews with key stakeholders in the industry revealed the following themes as reasons for the decline in the number of South African seafarers. The primary theme identified was the lack of available training berths for South African cadets/officers.

### **4.1 Lack of Training berth availability: A common problem**

All interviewees suggested that compounding the human resource crisis centred the reality that of the 240 cadets that graduate annually, many were unable to secure the training berths necessary to complete their final accreditation. Without these placements they couldn't graduate nor be employed in the global labour market. Since 2010, an average of 153 cadets per annum have successfully secured training berths due to interventions by SAMSA[1-7]. In addition to these 153 training berths, Marine Crew SA (a private sector crewing agency based in Cape Town, South Africa) has secured additional training berths for approximately 25-35 cadets per annum. Clearly, lack of training berth availability is hampering the growth of cadet production in South Africa, and any increase in cadet

production needs to be met with a concomitant availability of training berths. There is an approximate shortage of 60-70 berths annually.

The lack of training berths is not a uniquely South African problem. It is being experienced by India, Australia, Sweden, Sri Lanka, the Philippines, the United Kingdom and a range of the traditional maritime nations of Western Europe [16]. The lack of training berths is part of a larger global issue in the training of seafarers. In spite of the ongoing forecasts confirming globally shortages of officers [11], even the world's largest supplier of seafarers, the Philippines, cannot provide training berths for 1 out of every 5 cadets trained [12]. Reports suggest that of 25,000 cadets only 5,000 will obtain training berths [12]. This represents a profound wastage of human and financial resources if there are no alternate career paths available to these cadets.

#### **4.2 Shortage of and limited capacity of certified institutions to train officers**

Compounding the lack of training berth availability in South Africa is the lack of certified training institutions and the severe resource constraints these institutions face (Interviews P1-P10 2013). Only two training institutions are accredited to train merchant navy officers. These are the Durban University of Technology in Durban, KwaZulu-Natal and the Cape Peninsula University of Technology in Cape Town, Western Cape. Both South African institutions are faced with severe human resource constraints in the training of cadets, and produce a combined total of 240 cadets a year [10]. According to the Chief Operating Officer of SAMSA, this is clearly not sufficient to develop a sustained pool of skilled labour for the global labour market (Interview P6). The maritime departments are constrained by factors such as, poor physical infrastructure that they are based in; lack of sufficiently skilled lecturers to teach on maritime programmes; and the expectations of the broader university management for lecturers to publish, conduct extensive administration, and participate in the institutional life of the university (Interviews P1, P5). Since the two maritime departments are part of state universities, the salary scales paid to staff have to be commensurate with South African academic salaries which are relatively low when compared to private sector incomes. One participant suggested that the Maritime departments be moved out of the state university systems and into dedicated state run seafaring training institutions (Interviews P1-P5). This may resolve capacity issues in terms of staff whilst simultaneously being able to increase student graduation levels. In tentative support of this idea, SAMSA is establishing a Maritime Centre of Excellence (MCE) in Durban, but currently this centre will not provide certified training for cadets wanting to work in global commercial fleets. The focus of the MCE will be on port based seafaring work and shore based training (Interview P1-P5, P8).

#### **4.3 Prohibitive fiscal policies for South African ship owners in rebuilding a national merchant navy fleet**

Currently, the South African ship registry has no South African flagged merchant ships [3]. This is in stark contrast to the fleet of nationally flagged Safmarine ships that were on the registry up until 1993[3], till they were sold off to AP Moeller /Maersk [16]. The advent of flag of convenience (FOC) shipping, the lure of FOC fiscal policies and a series of mergers and acquisitions by multinational shipping decimated the national South African commercial fleet (Interviews P1-P10). The reduction in national fleet size is not unique to South Africa and is one experienced by many of the European traditional maritime nations. Lack of national fleets is endemic on the African continent, with interview participants citing the lack of indigenous ship ownership on the African continent as a problem requiring urgent policy intervention. The lack of ship ownership is made more acute by the fact that of the BRICS members, South Africa is the only member without a national fleet. Brazil has a fleet of 172 ships, Russia, 1891, India, 534 and China 2044 [3]. The aim is to entice 300 ships to the SA registry over the next few years. Interview participants (P1-P10) argued that a lack of a nationally flagged fleet means that there is a reliance on non-South African vessels to provide training berths for its cadets. Further there is no cabotage system operational in South Africa (as there is in Brazil for example) that compels foreign flagged vessels to employ or provide training berths to South African seafarers. The debate on changing the fiscal requisites of the current ships registry is a long standing one and has been debated in political circles since 2002 [13] with very little movement to actually pass new legislation.

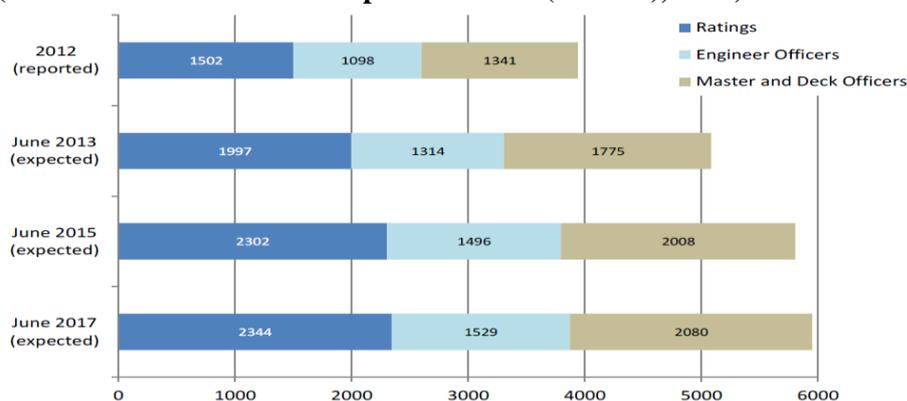
Newly built ships do not make physical provision for extra berths for trainee cadets. Evidence also suggests in a tight labour supply many ship owners and other industries (e.g. off shore oil and gas) prefer to rely on paying more to attract and recruit STCW qualified seafarers rather than working with the ‘blue water’ shipping companies to invest in resolving the lack of berths [14]. The evidence provides an important caveat to South Africa’s intended policy to grow a national fleet. It challenges the belief that a national fleet necessarily can, and the owners will, provide the full complement of training berths required to train the existing pool of South African cadets.

## 5. The Australian Context in demand of berths

IBISWorld estimates growth in the industry revenue of most of the sectors of the maritime industry in Australia in the next few years. For example, between 2011 and 2017, Australia’s LNG export capacity is expected to quadruple to 80 million tonnes [15], and the number of containers crossing the nation’s wharves will increase by 150 per cent from 6.2 to 15.4 million (Infrastructure Australia, 2011). Future employment growth in the industry will be patchy. A maritime workforce in Australia includes highly trained seafarers not just at sea as ship operators, but also shore-based positions (e.g. as pilotage, marine surveying, maritime education and training, port operation staff). In the four years to 2016, IBISWorld data shows trends that suggest, in line with overall maritime employment, the demand for STCW certified seafarers will likely shrink in port sector (-8.1%), grow slowly in international sea transport sector (7.3%) but grow more rapidly in offshore, terminal and coastal cargo sectors (11-17%) [15]. This complicates matters for the Australian maritime industry where the struggle to find training berths is not just a problem for international shipping companies. It affects all employers of STCW certified workers. Chartered by the Australian government’s Minister for Transport, the Maritime Workforce Development Forum (MWDF) commissioned a national maritime census to determine a future demand profile and impediments to skills supply[17].

Figure 1 below from the MWDF Census confirms not only the need to improve labour supply, but where employers predict the greatest shortfalls will occur. For engineering officers and deck officers alone, the gap was expected to grow respectively by 270% and 67% between 2013 to 2017 [17]. This accentuates not just the shortfall, but the criticality of immediate action.

**Figure 1 Number of seafarers expected within the responding organisation’s workforce (Maritime Workforce Development Forum (MWDF), 2013)**



## 6. Impediments to skills supply for the maritime workforce in Australia: Other factors in Australia that could inform South African practice

A number of findings from the Australian Maritime census [17], tabled in January 2013, suggested major impediments to future skills supply that will require effective national and enterprise level HR responses.

### 6.1 Available space

Traditionally, the ‘blue water’ sector has been the provider of berths for seafarers. But in the case of Australia the national fleet comprises of roughly 22 vessels [18] or less. While the ‘blue water’ sector

may be in decline, for the first time in Australian history, workforce data confirms employment in merchant marine industry occupations in offshore oil and gas sector — offshore oil and gas sector (31 per cent), with key supports in towage (17 per cent), dredging (6 per cent), pilotage (4 per cent) and ports (3 per cent) — significantly outstrips employment in the primarily ‘blue water’ trading sector (22 per cent) [19]. A national workforce survey reported that more than half of the employers responding thought the cost of training entry-level seafarers was a significant issue; particularly if they then left the employer during or immediately after completion of training [20]. For the fear of their skilled employees being poached, employers refrain from investing in high training costs, especially for entry-level seafarers. Table 1 provides an example of average costs involved in such training[21].

**Table 1 Indication of cost involved for an employer in training of seafarer employees<sup>1</sup>**

Rank	STCW Training Level	Time Taken	Cost*
<b>Deck Officer</b>	Watchkeeper	2 years 9 months	\$140,000
<b>Marine Engineer</b>	Watchkeeper	3 years 3 months	\$155,000
<b>Integrated Rating</b>	Certificate III	Over 1 year	\$75,000
<b>Deck/Engine Watchkeeper</b>	Master/Chief Engineer	5-7 years	\$100000 - \$150000

### **6.3 Time (including not able to count sea time towards training)**

The offshore oil and gas sector has a lot of ships and employs the majority of seafarers in Australia and while many operators in this sector undertake a significant amount of training, there are constraints on some operators as to how much training they are able to provide because their vessels are not large enough or are not moving, so seetime does not count fully towards certification.

### **6.4 Shortage of qualified staff to provide practical training**

An ageing workforce is another key factor limiting Australian shipping and port companies’ ability to increase their labour pool. The seafarer workforce in Australia is aging. With 42% of maritime workers aged over 51 years[17,20] and 20% over 55 years of age [20] the workforce is rapidly facing retirement induced shortfalls.

### **6.5 Short supply of trainees (nominated by an organisation who had around 20 berths)**

The oil and gas sector are increasingly attracting seafarers from the ‘blue water’ sector with its attractive wages and conditions. However, Cahoon et al [22] suggest this is a debatable issue as some industry critics believe that such shortages are due to the under-performing economy and the numbers will increase with the recovery of the economy. The same paper promotes the use of employee friendly human resource strategies towards recruitment and retention of seafarers. At the same time, Cahoon and Haugstetter [23] maintained the argument that increasingly it is becoming difficult for employers to target Generation Y demographic towards the shipping industry which is infamous for criminalisation of seafarers, piracy threats, long working contracts, etc. Although, their discussion pertains to the global population, the same may hold true for Australian seafarers as well.

### **6.6 Safety/contract issues (nominated by organisations who together had around 40 berths)**

With a high priority on work-life balance [22], Australian seafarers are seeking shorter contracts and being relieved at the end of their contract period. Although, the offshore industry does provide shorter contracts compared to their ‘blue-water’ counterparts, an employer’s inability to relieve its seafarers on time may cause seafarers to feel overworked[22] leading to stress and fatigue causing safety and employee attrition issues.

<sup>1</sup> While these figures are employer costs and do not include the costs of shore staff management of trainees, capital expenditure, maintenance costs of facilities or on-board mentoring and overseeing the trainee

## 7. The South African context for Australia’s impediments to skills supply

Table 2 below shows how impediments to Australia’s skill supply compares in the SA context. Table 3 makes a comparison of the training contexts in both countries. Both tables allow for a summarised contextual and comparative view of skills supply and training in both countries.

**Table 2 Comparing impediments to Australia’s skills supply in the South African context**

Identified impediment to skills supply for maritime workforce in Australia	The South African Context
7.1 Available space	<ul style="list-style-type: none"> <li>• While Australia has less than 25 nationally flagged trading vessels capable of providing training berths, South Africa has none.</li> <li>• The offshore oil and gas sectors are viewed by industry stakeholders as areas of profound growth in South Africa. A total of seven companies hold licences, for which, development or exploration activities exist or are planned (Norwegian Marine Technology Research Institute, 2010). Given that there are no SA flagged ships and hence no berthing space in a SA fleet, a potential consequence of this may be to see a competition between the traditional ‘blue water’ sector in SA and the oil and gas sectors, as has been experienced in Australia..</li> </ul>
7.2 Cost	<ul style="list-style-type: none"> <li>• In the South African case, cost continues to be prohibitive, since foreign shipping companies have to be paid to offer training berths to cadets. These costs for the moment are borne by the state through various skill development subsidies levied from companies operating in the transport sector. There is therefore a cross subsidisation of the cost of training berths from non-maritime sectors.</li> <li>• South African shipping companies have historically trained for their own needs, even during the peak of South African national ship ownership in the 1970s and 1980s (Bonnin et al 2004). Safmarine for example had a successful in-house training scheme to train cadets to service its own fleet (Ruggunan 2009). It is unlikely that private sector shipping companies will respond to threats compelling them to provide training berths. As the evidence indicates shipping companies respond to incentives more productively than threats.</li> </ul>
7.3 Short supply of trainees	<ul style="list-style-type: none"> <li>• Recruitment of young people to seafaring as a profession continues to remain a challenge in South Africa. Contributing to the challenge is a lack of a ‘maritime culture’ amongst younger people even in port cities such as Durban and Cape Town. Discussions on how to promote a maritime culture in schools and amongst the public in general are currently being pursued by the National Department of Transport and SAMSA. Apartheid in South Africa excluded the majority of young people from exploring skilled professions at sea and it was only post 1994 that Black South Africans (African, Indian and ‘Coloured’ South Africans) were allowed to pursue careers as officers. Prior to this they were restricted to careers as ratings and cadet and officer ranks were the preserve of White South Africans.</li> </ul>

**Table 3 Seafarer training contexts in South Africa and Australia**

	South Africa	Australia
Andragogic model of achieving sea time	Apprenticeship system	Apprenticeship system.
Availability of training berths.	Limited availability of training berths on foreign ships.	Limited availability of training berths on foreign ships.

<b>Existence and/or size of national fleet.</b>	No national fleet.	Declining national fleet.
<b>Dedicated training vessel</b>	One dedicated training vessel.	No dedicated training vessel
<b>State schemes to train and develop seafarers.</b>	-Subsidises a private sector crewing agency to source training berths. -Runs a simulator training programme to add value to cadet training. -Subsidises training and training berths for cadets up to 100	Partial subsidies from the state but difficult to access.
<b>Recognition of prior learning as a means of accumulating sea time across different vessel types.--</b>	Has a formal recognition of prior learning system that theoretically allows for progression and accumulation of sea time from port and fishing vessels to Deep Ocean going vessels but in tension with global STCW system.	NO
<b>Officer training institutes part of Universities only.</b>	YES	NO

## 8. Potential Solutions and their implications

### 8.1 Government shipping reforms and policies

The root cause of the bottleneck in the supply of skilled seafarers is the lack of ships to train people on, something that the Australian Federal Government's proposed tonnage tax and international shipping register, when introduced, should collectively help to solve. Under the proposed reforms, more ships would be under the control of Australian entities and there would therefore be more on-board training berths. The problem associated with this reform is that 'second register' also allows owners to have less regulated crewing requirements which encourages the employment of foreign crew (who work in the country under a Maritime Crew Visa), who not only occupy a training berth but may also be paid lower wages [24]. For example, the AISR requires only the Master and Chief Engineer to be Australian residents [25]. According to the Australian Maritime Industry Census carried out in 2012 by the MWDF, 57 per cent of the staff employed in Australia are working on a visa programme, temporary business visa, maritime crew visa or are from New Zealand [17].

As argued earlier in the paper, South Africa's shipping policy environment has to be overhauled if it is to serve as a driver of seafarer employment. This is currently in process and the consequences if any for seafarer training remains to be seen. The South African state is also considering an African wide cabotage system. There is currently a shift by SAMSA to move towards a compulsory cabotage system as a means of securing training berths for seafarers (Interviews P1-P10). However, as Hutson argues [3] "there is insufficient cargo being moved between South African ports to warrant having such laws in place, so they would be counterproductive". Most cargo in South Africa is moved through road and rail infrastructure, even between coastal cities. Cabotage with a link to training and employment of national seafarers already exists in many South American countries including Brazil and is being proposed as a solution to the lack of training berth availability in Australia [24]. Participants (Interviews P3,P9,P10) also suggested that greater solidarity is needed amongst the various maritime authorities on the African continent to ensure an African wide system of cabotage with links to training berths and employment.

### 8.2 Cooperation between industry stakeholders

Through joint coordination and cooperation between industry stakeholders (employers, seafarers, maritime education providers, national government, etc.), efforts can be made to seek berths and provide training to seafarers. For example, in Australia, a suggested national Government

coordination of the infrastructure and MET activities has been achieved through the three major AMSA (Australian Maritime Safety Authority) approved maritime education and training (MET) providers (AMC, Hunter and Challenger) who have agreed to a cooperative approach under a Memorandum of Understanding [21]. However, such joint ventures need strong legal basis and should not favour any one stakeholder in particular [28].

Similarly in South Africa, a greater coordinated effort needs to be made amongst the 14 MET sector stakeholders. One way of achieving this is through processes of social partnership. It is also the most apt way to describe the strategies of the South African government (through its agencies) in achieving national goals of racial equity in the labour market for seafarers. However, it has been less successful when it came to making significant and rapid inroads into growing the employment opportunities for South African seafarers globally. It has proved to be a parochial and intensely localised approach targeted at national issues of achieving racial equity in occupational ranks of seafarers.

### **8.3 Simulators and Training ships**

In their paper, [29] suggest that training obtained through simulators and training ship experience can be used as a valid substitute for some of the competence acquired through seetime on commercially trading vessels, thus freeing up berths quicker. Since the STCW Code does not specify any mandatory requirements for training provided through simulators or training ships, there is always the possibility of training received to vary as per individual interpretations on a national or global scale. South Africa for example, already makes extensive use of simulator training of cadets (through the South African Maritime Training Authority) but due to no global standard of performance criteria, simulator training is viewed as value adding rather than a replacement of experiential training achieved through training berths. This sits at odds with South Africa's higher education and training policy environment that makes provisions for recognition of prior learning as an alternate access point to obtaining credit for academic qualifications including professional qualifications.

SAMSA and the South African national department of transport recognise that there need to be major investments of financial and human resources into the training and development of officers. To this end, a dedicated training vessel (the SA Agulhas in 2012- a previous South African Antarctica research vessel), has been obtained and refitted to provide training berths for cadets that require their seetime. According to participants interviewed, the Agulhas project (as it has become known) has been very successful despite the obvious logistical constraints of it only being able to accommodate 50 cadets at a time. The success operates at the level of both being able to offer training berths but also contributes to generating public awareness about maritime careers and culture. Proposals for dedicated training vessels have been made by Australian Maritime College to the Australian state [29] as well as by the Nigerian Maritime Authority to the Nigerian state [30] without much success. The cost of this strategy is prohibitive but as the South African case shows that benefits are to be obtained if it is part of a wider strategy to train cadets.

### **8.4 Recognition of Prior Learning**

Given industry decline, poaching and lack of incentives to invest in an 'industry solution' evidence from countries such as Australia, the United Kingdom, India and Nigeria suggest the availability of training berths in the private shipping fleet relies heavily upon state sponsored initiatives. One solution proposed in the Australian case is the use of berths on alternate vessels (e.g. naval vessels, 'brown' water vessels, or short voyage vessels) or smaller vessels (e.g. fishing vessels, ferries, tugs and tows) [29]. South Africa has a reasonable sized fleet of brown water and port vessels as well as a modern fleet of navy vessels. An idea proposed by Ghosh & Bowles [29] and Bonnin et al [2] was that a system of recognition of prior learning be applied to training berth certification. Thus, seafarers can cumulatively obtain their sea time on different vessels and engage in a 'tinny to tanker' scheme [29]. This idea has not been successfully applied in Australia or South Africa where recognition of prior learning system formally exists. The main reason for this in South Africa is that a battle tension exists between the rationale of the South African Qualifications Authority (SAQA) and the rationale of the globally mandated STCW qualification, where global regulation has triumphed giving nation states like South Africa very little room to manoeuvre. The global maritime industry needs a better

and simpler process of mapping and recognising qualifications and seetime gained on other sectors and trades of the seafaring industry. The assessment regime of seafarers also need to recognize the gaps in their competence to work in different context, and provide further training to allow them to advance their career and learning.

### **8.5 Authentic Assessment**

It is evident that both South Africa and Australia are at a critical point in ensuring a ready supply of seafarers. Crucial to ensuring a pipeline of certified seafarers is the issue of training berth availability. The evidence from the two countries demonstrates that the traditional manner of acquiring training berths as a means to certification is not a viable strategy to grow their seafaring labour markets. Certification is globally regulated and seetime is mandatory to obtain the Standards of Training, Certification and Watchkeeping Convention (STCW) certification. Mandatory seetime that is intended to promote experience but is completed in isolation to assessment of competency or performance in the workplace, has been challenged by many employers as counterintuitive to any vocationally oriented, educational process [17]. The Kenya Maritime Authority [28], in their assessment of the lack of training berths available to Indian and Kenyan cadets, question the pedagogical effectiveness of mandatory seetime as the only way in which cadets can or should be accredited for certification. In recognition of the need for alternative ways to ensure accreditation of the experiential component of the STCW, we propose authentic assessment as a philosophy and strategy of teaching, learning and assessment. However, as we shall see any such approach involves a tension between global regulation and national state imperatives of seafaring as a profession.

Authentic assessment tasks contextually resembling workplace situations and replicating the complexities and challenges in different scenarios will require students to integrate a range of competencies for problem solving and decision making as in the real world [31]. If the students can demonstrate their workplace readiness for a level of responsibility through a range of such tasks, they should ideally be awarded with the STCW certification and allowed to move up the ranks, even if it's before the end of their stipulated seetime. This would essentially free up the training berths at lower levels for prospective trainees and officers. However, current practices do not allow acceleration in certification (either STCW or national qualifications) until the approved duration of seetime is completed.

Authentic assessment will also assist in filling training gaps for seafarers who may have acquired the seetime on a range of vessels by providing frequent opportunities to reflect on their current knowledge. Such reflection by both educators and students allows them to recognise gaps in the knowledge and grasp cues for enhancing the transfer of skills in different contexts [32]. Students can have access to the resources and information that would be available to them in the outside world, making them focus on developing an in-depth understanding by assembling and interpreting information, formulating ideas, critiquing, integrating knowledge and demonstrating the holistic application of skills for higher-order cognition [33]. Such application of competence provides multiple indicators of a students' competence. In their paper Ghosh et al [29] provide evidence based review of literature to suggest that, to a large extent, current assessment methods in seafarer training, as promoted by the STCW, are failing to do so.

## **9. Conclusion**

The main aim of this paper was to assess the labour market and training contexts for South African and Australian seafarers in the merchant navy. A secondary aim is to provide an alternate way of conceptualising the ways in which seafarers can obtain accreditation for the experiential component of their STCW training. In achieving the first aim of the paper we have demonstrated that both Australia and South Africa face similar seafaring labour market challenges. These consist of projected shortages of qualified seafarers to service the growing maritime sector in both countries. Contributing to the shortages are a lack of training berths, declining to non-existent nationally flagged fleets, a failure to recruit young people in sufficient numbers into seafaring professions and a lack of coordination of MET activities. Given the various difficulties in securing training berths for seafarers in both these countries, authentic assessment is proposed as a means by which seafarers can achieve STCW

certification. South Africa already has an established simulator training programme, but since there are no global norms or performance criteria for simulator training, its benefit towards certification remains limited. A dedicated training vessel in South Africa is a success but it can only offer capacity to 50 cadets annually. Solutions to the dearth of training berth availability in both countries have to include a championing of authentic assessment at all levels of MET. This requires a coordinated effort between global and local labour market institutions to consider authentic assessment as a viable and quality tool to obtain STCW certification and thus revive ailing national labour markets.

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