

## **In the Spirit of Cooperation: A Before and After Story in Maritime Education**

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**Abstract** This paper explores the impact of cultural immersion and awareness on two groups of maritime students from Massachusetts Maritime Academy in USA, who traveled to South Africa, Singapore and Malaysia as part of an experiential learning program in January 2017. We believe that cross cultural skills are best developed through experiential learning e.g. by studying or working in a foreign culture where one learns by trial and error. Students spent three weeks in these locations under faculty supervision and received a wide ranging exposure into maritime business and education. In South Africa, they were also engaged in imparting STEM (Science, Technology, Engineering and Mathematics) education in local high schools in Durban. One of the most important aspects of STEM education and maritime career awareness is to expose young people to it while they can still make curriculum choices that will support a future career in the maritime industry. In Singapore and Malaysia, the students were exposed to various facets of maritime business in partnership with local maritime colleges and maritime business interests. Prior to departure, the students were assessed on their Cultural Intelligence (CQ), which is an individual's capability to function effectively in situations characterized by cultural diversity. CQ is similar to IQ (Intelligence Quotient) in that it measures a set of capabilities necessary for personal and professional success. CQ, however, is unique because it focuses specifically on the skills and capabilities needed to succeed internationally and in multicultural domestic situations. Upon their return to the US, the students were assessed one more time, revealing some very interesting findings about the impact of these trips on their cultural intelligence and awareness. The before and after assessment scores were compared with worldwide norms. This paper discusses this very interesting experiential learning program and its impact on the CQ scores of students in a maritime education program and identifies further scope of research.

**Keywords:** Maritime education, Cultural intelligence, Experiential learning, STEM training

## **1. Introduction:**

Based on the generally accepted premise that learning occurs through application, experiential learning is a critical component of education in Massachusetts Maritime Academy (MMA). The International Maritime Business (IMB) major has integrated this carefully into the curriculum, ensuring proper integration between the experience and the educational value that can be derived from it. All sophomore students are engaged in a five week faculty led program which is divided into three segments. This includes a pre-departure awareness and understanding, a three week travel program in an international location, and a weeklong post-travel reflection activity involving a presentation and final report submission. In the learn-do-learn tradition of MMA, the centerpiece of this course is the three week field study in a selected country absorbing the practical and cultural implications of international maritime business. An important element of this exercise was an assessment of cultural intelligence quotient (CQ).

CQ is an individual's capability to function effectively in situations characterized by cultural diversity. This includes situations that are diverse in national, ethnic, and organizational culture. It also includes diversity in gender, age, academic major, functional background, and interests. Thus, cultural intelligence has broad implications for personal and professional effectiveness across a variety of situations. CQ, is considered to be unique because it focuses specifically on the skills and capabilities needed to succeed internationally and in multicultural domestic situations (Ang and Van Dyne 2008). The importance of a proper CQ assessment for the purpose of understanding and enhancing a maritime student's world view can hardly be overemphasized. Research indicates that those kinds of awareness and abilities can be measured and evaluated. First introduced by two business researchers, Christopher Earley and Soon Ang in their 2003 book, '*Cultural intelligence: Individual interactions across cultures*', it measures the capability to function effectively in a variety of national, ethnic and organizational settings. In a world, where crossing geographical boundaries is routine, and in a profession like maritime business where the sun never sets, CQ is a vital skill.

All students participating in experiential learning were required to participate in a CQ personal development program which is detailed out in Section 2. This program is developed by the Cultural Intelligence Center and we partnered with them to conduct the pre and post departure CQ assessments. Section 3 describes student learning experiences in South Africa, Singapore and Malaysia outlining their purpose and scope. Section 4 outlines the assessment findings used to

test the impact of the study tour on the CQ of participating students and conclusions. The purpose of this paper is to demonstrate that, with the help of strategic partners, it is possible to create opportunities that will significantly strengthen the CQ of maritime students.

## **2. The CQ Personal Development Program:**

The CQ personal development program by the Cultural Intelligence Center is designed to:

- Trigger reflection while participants completed surveys
- Guide participants in understanding the feedback
- Encourage students to take specific action steps aimed at enhancing CQ
- Facilitate awareness and use of CQ capabilities after completion of the program

Each student received a personal feedback report. Each report included definitions of the four CQ factors, descriptive examples of high cultural intelligence capabilities, and definitions of seven individual cultural value orientations. Reports included comparisons of the individual's CQ scores with the world wide norms and feedback on the individual's cultural value orientations.

The four CQ factors are listed below:

1. CQ Drive is a person's motivation, interest, and confidence in functioning effectively in culturally diverse settings. It includes:
  - a) Intrinsic Interest: Deriving enjoyment from culturally diverse experiences.
  - b) Extrinsic Interest: Gaining benefits from culturally diverse experiences.
  - c) Self-Efficacy: Having the confidence to be effective in culturally diverse situations.
2. CQ Knowledge is a person's knowledge about how cultures are similar and how cultures are different. It includes:
  - a) Business: Knowledge about economic and legal systems.
  - b) Values & Norms: Knowledge about values, social norms and religious beliefs.
  - c) Socio-Linguistic: Knowledge about language and communication norms.
  - d) Leadership: Knowledge about managing people and relationships across cultures.
3. CQ Strategy is how a person makes sense of culturally diverse experiences. It includes:
  - a) Planning: Strategizing before a culturally diverse encounter.
  - b) Awareness: Sensing the perspectives of self and others.
  - c) Checking: Checking assumptions and adjusting mental maps when experiences differ from expectations.

4. CQ Action is a person's capability to adapt verbal and nonverbal behavior so it is appropriate across cultural contexts. It includes:
  - a) Speech Acts: Modifying the manner of communications (e.g., direct, indirect).
  - b) Verbal: Modifying verbal behaviors (e.g., accent, tone).
  - c) Non-Verbal: Modifying non-verbal behaviors (e.g., gestures, facial expressions).

A week prior to departure, both groups of students traveling to South Africa and Singapore-Malaysia took the pre-departure online CQ assessment. Upon completion of the assessment, each student received a personal feedback report. The report included definitions of the four CQ factors and comparisons of the individual's CQ scores with the world wide norms and feedback on the individual's cultural value orientations. The amount of previous intercultural experience was deemed to be low or moderate as most students had never stepped out of the country.

The next step involved the creation of a CQ developmental plan by each student focusing on specific ways to use CQ strengths and concrete action steps for enhancing weaker CQ capabilities. Students were required to submit their CQ developmental plans to faculty prior to departure.

A week after returning from the foreign destinations where students spent three weeks, they were required to take a second CQ assessment. Each student received a personal feedback report as well as a group report was provided comparing the pre and post trip assessment scores in comparison with worldwide norms. The comparisons showed significant improvement in CQ assessment scores, thereby quantifying the impact of the experiential learning trips on student CQ. The feedback reports gave students tangible evidence that they have improved their CQ capabilities as a result of this experience.

### **3. Experiential learning and cultural immersion in South Africa and Singapore-Malaysia**

#### ***South Africa***

Fourteen IMB cadets traveled on their experiential learning tour to South Africa to support schools in STEM education initiatives by teaching math and science subjects. This was part of supporting government initiatives to introduce learners to the maritime industry as well as direct them towards STEM subjects which is the direction to take when eventually seeking a career in the maritime world. These were schools who had introduced Nautical Sciences and Maritime Economics in their curriculum. The students were hosted by the eThekweni Maritime Cluster (EMC). EMC is placed at the center of port activity in Durban. The aim of the trip was to enhance cultural awareness,

engage in work experience benefitting STEM education and learning about port infrastructure in South Africa. Our cadets related very well with South African school children from all walks of life, many of them whom face extremely difficult challenges in their education. They taught in various schools and there was a rich cultural exchange.

Various studies and surveys reveal that STEM education is certainly an area of high importance to the growth of any economy<sup>[2]</sup>. Further, STEM education is central to life especially in the maritime fields. One of the most important aspects of encouraging STEM education and maritime industry career awareness is to expose young people to it while they can still make curriculum choices that will support their future careers. South Africa, has a government program known as ‘Operation Phakisa’ to encourage careers in the maritime field. Our cadets were able to support this initiative by providing Maritime and STEM education to schools that were most in need. South Africa has relatively low international rankings in STEM education. Hence, this partnership was highly welcome and appreciated by the local hosts. Our students therefore enhanced the possibility of young people joining the maritime field in South Africa.

#### *Singapore and Malaysia*

Our main corporate partner in Singapore was ABS (American Bureau of Shipping) and the academic partner in Malaysia was NMIT (Netherlands Maritime Institute of Technology). In this initiative, twelve students spent three weeks in these locations during the months of January and February, 2017 under faculty supervision. Students were given preparatory assignments to familiarize themselves with the port infrastructure in that region.<sup>[3]</sup> They learned about the cost advantage of Malaysian ports versus the tremendous efficiency of Singapore. They were exposed to various maritime businesses in these locations and were required to make presentations on regional port competitiveness. They received the ABS business overview from various disciplines such as engineering, operations, Operations Efficiency Performance (OEP) allowing them to grasp the functions of a world leader in maritime business. Several field and institutional trips were arranged that included Keppel, SembCorp Marine, Port of Singapore Authority, Singapore Maritime Foundation, Singapore Maritime Academy, Maersk Broker Asia, PSA marine, Scorpio Asia, Kerry Logistics, MT Maritime Management, Integra Singapore.

The cadets followed a well defined schedule on location. They were expected to visit various maritime business interests, participate in industry talks and seminars, make presentations before

our global partners and also involve themselves in civic engagement programs as worthy ambassadors of MMA and the IMB program.

The aforementioned IMB experiential learning program is an excellent tool to demonstrate global civic engagement of our students. Civic engagement “involves the participation of faculty, staff and students in the civic life and institutions of the community (local, regional, statewide, national and global) through reciprocal partnerships with public, private and non-profit organizations, to address critical social issues and align curriculum, scholarship, research and creative activity with the public good” (Massachusetts Board of Higher Education 2014). Our partners in two different parts of the world were educational institutions in the maritime field and business organizations in the private and public sector engaged in maritime/international business. The students engaged with these partners in a mutually rewarding learning experience. This ranged from teaching STEM subjects in high schools in South Africa to interacting and learning from maritime business professionals in Singapore and Malaysia. During their stay in the two locations, they also experienced complete cultural immersion. Some of these students had never stepped out of the US prior to this trip. Upon completion of the trip, students were required to take another CQ assessment. The next section summarizes the findings of the assessments.

#### **4. Results of the CQ Assessments**

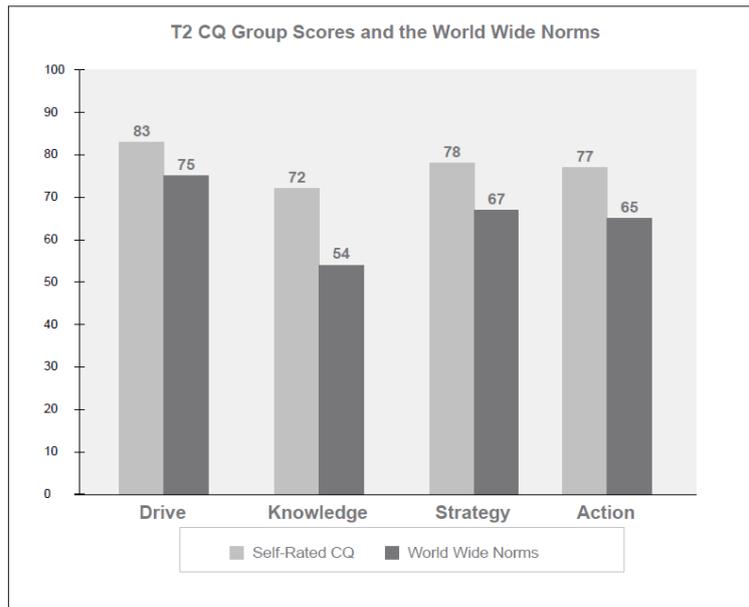
We ran a second CQ assessment on each group of students upon return to the US. The results of the assessment were summarized by the Cultural Intelligence Center.

As the results suggest, there was clearly an improvement in the CQ scores of students after the trip, the most marked areas being CQ knowledge (knowledge about how cultures are similar or dissimilar) and CQ action (capability to adapt verbal and nonverbal behavior so it is appropriate across cultural contexts).

As in the previous case, there was clearly an improvement in the CQ scores of students after the trip to Singapore/Malaysia, and interestingly enough, the most marked areas were CQ knowledge (knowledge about how cultures are similar or dissimilar) and CQ action (capability to adapt verbal and nonverbal behavior so it is appropriate across cultural contexts).

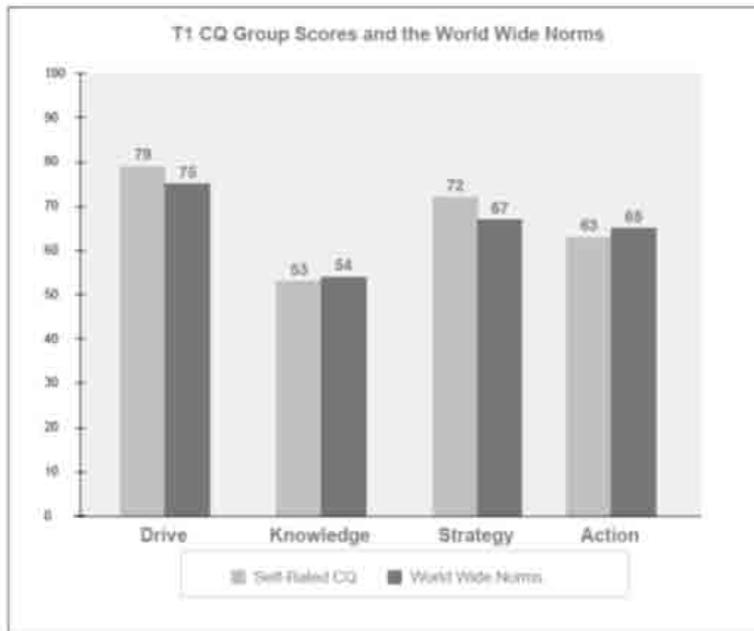
This cultural competence assessment will be a valuable addition to existing student learning assessment tools. We will be incorporating this CQ assessment in all our future experiential learning initiatives.

**Fig 1: Comparative assessment of the T1 and T2 scores of the South Africa team with worldwide norms**



The following summarizes the CQ scores for this group compared to the World Wide Norms

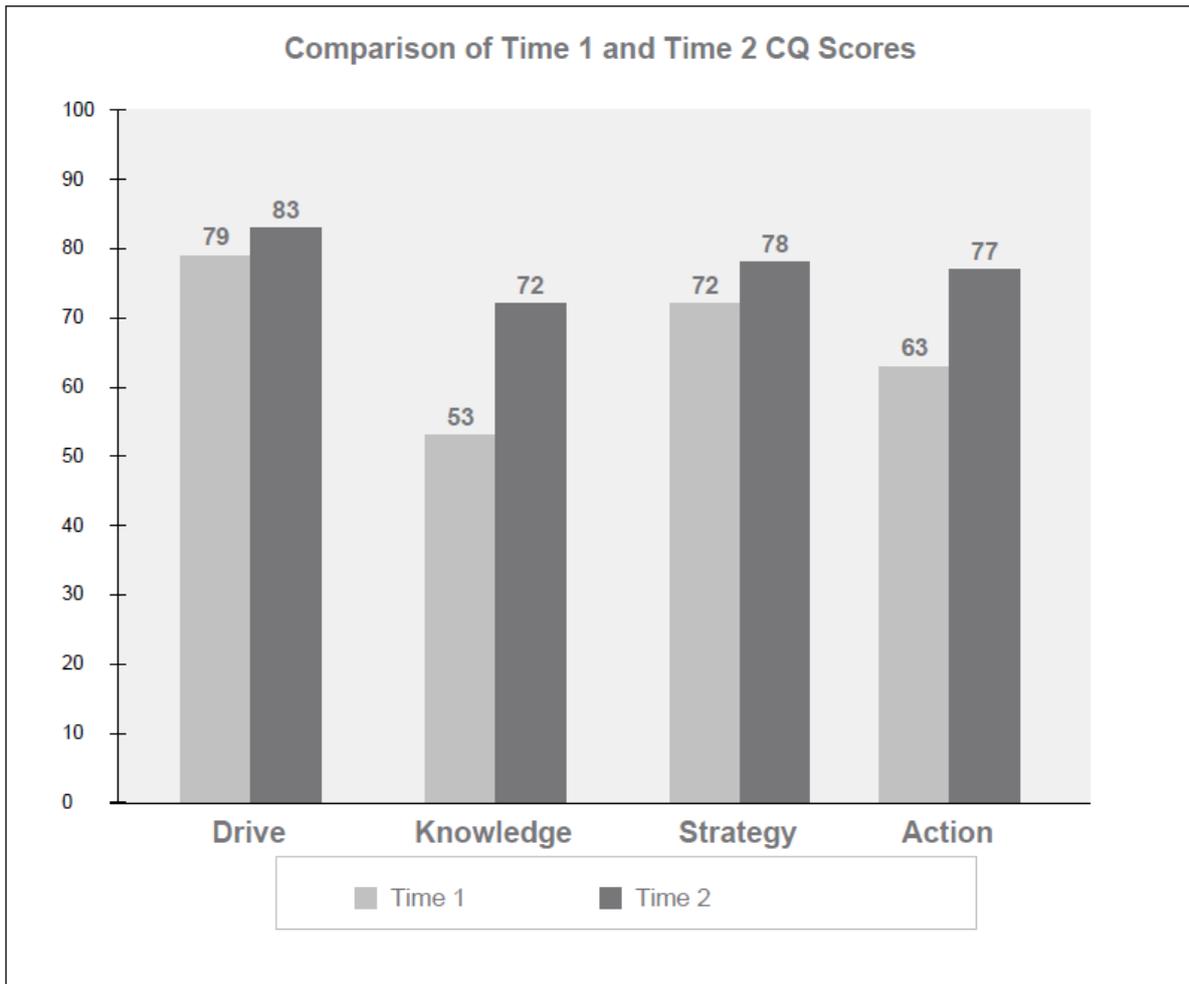
- CQ Drive            Average Self-Rated CQ Drive is GREATER THAN World Wide Norm by 8 points
- CQ Knowledge    Average Self-Rated CQ Knowledge is GREATER THAN World Wide Norm by 18 points
- CQ Strategy       Average Self-Rated CQ Strategy is GREATER THAN World Wide Norm by 11 points
- CQ Action          Average Self-Rated CQ Action is GREATER THAN World Wide Norm by 12 points



The following summarizes the CQ scores for this group compared to the World Wide Norms

- CQ Drive            Average Self-Rated CQ Drive is GREATER THAN World Wide Norm by 4 points
- CQ Knowledge    Average Self-Rated CQ Knowledge is LESS THAN World Wide Norm by 1 points
- CQ Strategy       Average Self-Rated CQ Strategy is GREATER THAN World Wide Norm by 5 points
- CQ Action          Average Self-Rated CQ Action is LESS THAN World Wide Norm by 2 points

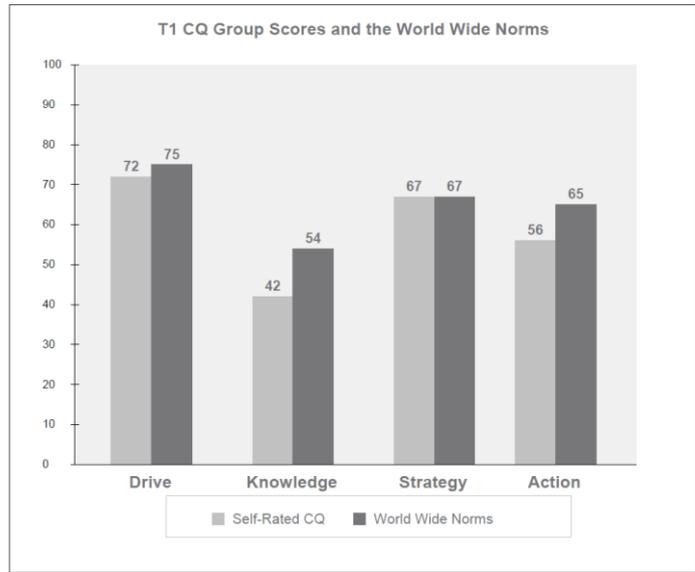
*Fig2: Comparison of the T1 and T2 CQ scores of the South Africa team*



The following summarizes the comparison of Time 1 and Time 2 CQ scores for this group

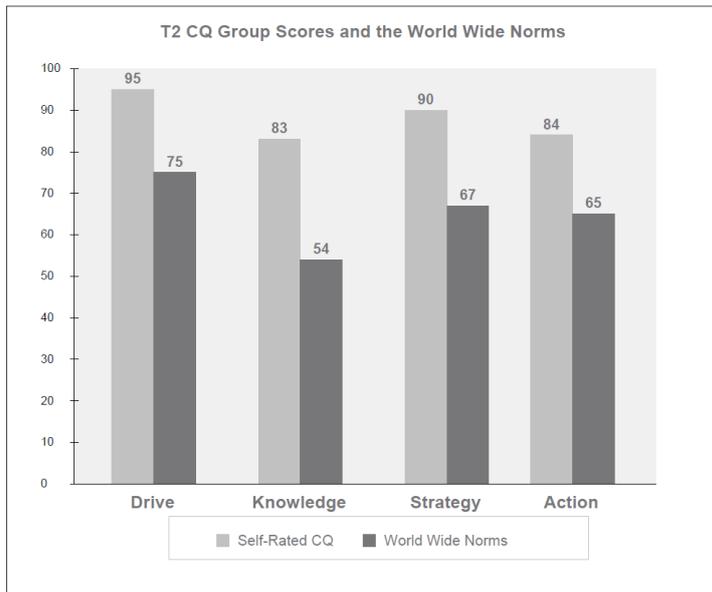
	Avg Scores	% Changed
CQ Drive	79 -> 83	5%
CQ Knowledge	53 -> 72	36%
CQ Strategy	72 -> 78	8%
CQ Action	63 -> 77	22%

**Fig 3: Comparative assessment of the T1 and T2 scores of the Singapore Malaysia team with worldwide norms**



The following summarizes the CQ scores for this group compared to the World Wide Norms

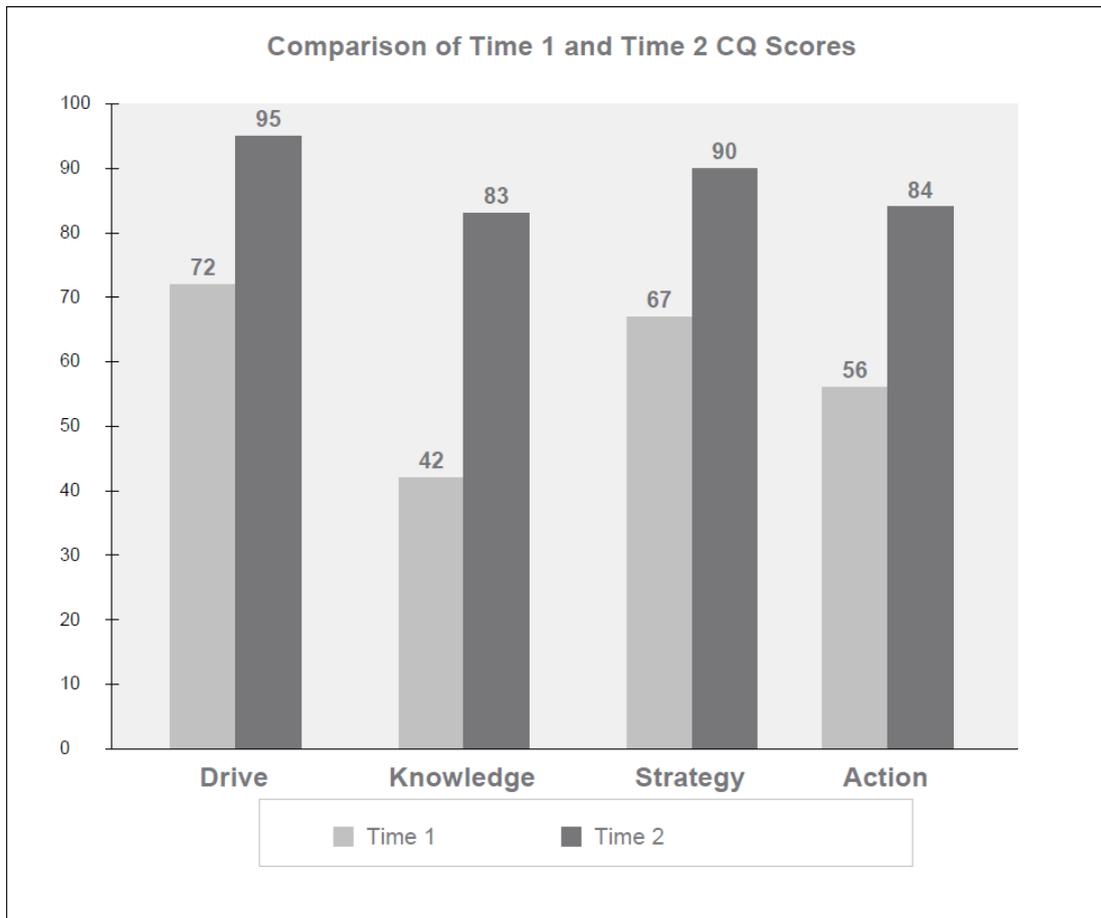
- CQ Drive: Average Self-Rated CQ Drive is LESS THAN World Wide Norm by 3 points
- CQ Knowledge: Average Self-Rated CQ Knowledge is LESS THAN World Wide Norm by 13 points
- CQ Strategy: Average Self-Rated CQ Strategy DIFFERS FROM World Wide Norm by 0 points
- CQ Action: Average Self-Rated CQ Action is LESS THAN World Wide Norm by 9 points



The following summarizes the CQ scores for this group compared to the World Wide Norms

- CQ Drive: Average Self-Rated CQ Drive is GREATER THAN World Wide Norm by 20 points
- CQ Knowledge: Average Self-Rated CQ Knowledge is GREATER THAN World Wide Norm by 29 points
- CQ Strategy: Average Self-Rated CQ Strategy is GREATER THAN World Wide Norm by 23 points
- CQ Action: Average Self-Rated CQ Action is GREATER THAN World Wide Norm by 19 points

**Fig4: Comparison of the T1 and T2 CQ scores of the Singapore Malaysia team**



The following summarizes the comparison of Time 1 and Time 2 CQ scores for this group

	Avg Scores	% Changed
CQ Drive	72 -> 95	32%
CQ Knowledge	42 -> 83	98%
CQ Strategy	67 -> 90	34%
CQ Action	56 -> 84	50%

## 5. Conclusion

Our assessment exercise validates Montrose who wrote, ‘The importance of an international experience for the purpose of language development, cultural immersion, service projects, discipline-specific studies, or enhancement of a student’s world view cannot be underestimated’ (Montrose 2008).

The maritime sector is probably the most global sector with a very diverse workforce. It is increasingly important for the maritime professional to demonstrate proficiencies on the four measures of CQ discussed in this paper. As our case studies in experiential learning have demonstrated, this could be an important tool for enhancing CQ capabilities of our students. Based on the generally accepted premise that learning occurs through experience, international experiential learning can be a critical component of education in maritime institutions developed through partnerships between member institutions of IAMU.

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