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WILL CHANGED REGULATIONS IN EDUCATION AND TRAINING, MAKE FOR SAFER SHIPS AND SHIP CREWS, A CRITICAL REFLECTION

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Abstract. Critical reflection is widely accepted and used by teachers to analyse adult learning application and approach, Brookfield (1995). This paper uses this reflective practice and applies it into the Maritime Education and Training (MET) environment by focusing on the introduction of several significant amendments to key conventions and regulations by the International Maritime Organisations, (IMO) during 2014. Applying the four reflective lenses outlined by Brookfield (1995) to argue the impact these changes will have on the operational safety capability of the ship and whether these changes will result in improved safety of the crew.

Focusing on the Manila amendments 2010, an argument is presented that questions how the Maritime Safety criteria of the IMO, is maintained or improved as a result of the changes to the International Convention on the Standards of Training and Certification for Watchkeeping, (STCW10).

Applying the reflective process the study attempts to identify if the introduction of amendments and regulative change will make for safer ships and ship crew, with a significant focus on emergency response and subsequent emergency management. Therefore, the literature reflection includes authors such as Owen et.al (2014) who has studied emergency management factors in teams and subsequent response outcomes. Anecdotal evidence has been captured since midyear 2014 at the Australian Maritime College (AMC) through refresher training targeting the requirements stipulated by the STCW amendments. These courses service a significant number of experienced seafarers from varied shipping backgrounds undertaking basic through to advanced refresher training. The paper uses evidence generated from student feedback at the end of each course to provide the basis of the student reflective lens.

The findings looks at what different teaching approach is required for these short duration refresher training, and what additional skills do teachers need in this particular environment requiring high volume quick turn over programs. The reflection process also considers how this training differs from onboard requirements, and provides a comparison as to whether refresher training alone will improve ship board safety or whether this combined with the development of onboard institutional type delivery knowledge and skill will be the better mix. The paper uses these reflective lenses to meet the needs of the various stakeholders.

Key words: critical reflection, maritime safety, stakeholders, training

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1 AUTOBIOGRAPHICAL AND LITERATURE LENSES

As the title of the paper suggests the following argument considers recent changes implemented into key conventions which require seafarers to undergo refresher training in emergency response capability at an approved MET institution. Seeking to challenge, through the use of critical reflection, the somewhat traditional approach to educating maritime students, and look to introduce a contemporary concept of reinvigorated education back at the foundation stage of the students learning. Using this newly underpinned foundation of learning to question if it would provide sufficient future influence and make for safer ships and ships crews. It has been widely accepted in the field of education that good teachers, (teachers who can and do influence their students learning), are those who have developed a practice of reflection. Brookfield (1995) among others, discuss this success coming to those teachers who have become critically reflective about the whole of their teaching. It is recognized that to many, this practice of critical reflection can be confronting as we are asked to challenge our ability and authority in the classroom.

So what does it mean to become a critically reflective teacher? While the paper will not answer all the questions, it will provide an insight to reflective practice in action, achieved through the use of four distinct lenses described in the writings of authors such as Brookfield (1995) and Biggs et.al (2007).

These four lenses are used to reflect on our own teaching practice by identifying with autobiographies of yourself as a learner and teacher, looking at your practice through your student's eyes, through peer reflection by your colleagues and theoretical literature. It is worth noting that genuine teachers will through practice undertake one form or another of these reflections, they just don't link it to a reason or consider how it can improve their teaching.

Teaching practice is changing and Kemmis et.al (2014) suggest that a student needs to be active in their approach to learning, they need to engage in the process and understand it is what they do that they learn, it is not what the teacher does. But it is the teacher's role to engage the student into the learning cycle. This in itself pushes the boundaries, especially in the area of mandatory education and training that has prescribed content; established curriculum, but requires the learner to be adaptive to enter what may be a less than familiar vocational environment. Teachers need to understand their students and the learning needs. Kemmis et.al (2014) further discuss this as developing a learning theory, an understanding about how people learn as the key to developing an approach that will

suit the student moving through your class room now. Maritime is an interesting vocation in itself as unlike many other fields of employment those that work within have many roles and responsibilities depending on what stage of development they are at, and what operating department they end up working in.

The reflective journey has commenced and already a challenge to question ourselves as quality teachers. Teachers who can engage the students learning, across all areas of their study including that of emergency response can only be successful if they identify with themselves first then identify with what motivates their students. The journeys end point is the establishment of a conditioning within the student's career long learning cycle; this conditioning is that training no matter how long apart will be just that refresher training re-conditioning of competence.

2 SELF REFLECTIVE LENSES

Why do non maritime emergency response agencies generally have success. Success either with the emergency itself, or success within its response team. Is it due to a coordinated approach with a common goal? Is it due to the team functioning as one with a common goal? The answer may well be yes to both of these questions. So what is different in our maritime emergency response where there is a mixture of success and failure? Both response areas are similar in that emergencies are emergencies, unplanned events that cause disruption. It is really only the operating environment that differs. But why do we need five yearly mandatory refresher training on top of our prescribed shipboard emergency drills that must be undertaken. Is it because these drills are not as realistic as they could be. Is it because those conducting the drills are not as experienced in delivering training as they could be? The answer to these questions is yes. When it is questioned as to how realistic we make a drill on board there are mixed reactions that usually reflect the very ordinary ticks the boxes approach to full on well planned and thought out activities. It is not the papers purpose to delve too deeply here other than to say all training exercises have the ability to be as realistic as possible to ensure the response teams are as emergency conditioned as possible. Reflecting on the writings of Owen et.al (2014) a key learning emerges that while emergencies can catch those around them unawares, even with prior warning and regardless of the training the team has been exposed to. The key is how to ensure the individual and or team performance is at its optimum in order to limit the impact of the emergency. Using a shipboard emergency context the initial team responsible for timely key decision making is the com-

mand team. But they are only able to effectively function if provided with relevant and up to date information. Anyone who has dealt with emergency response knows that the quality and timing of this information will vary dependent on how the responding first on scene can read the event. This is made all the harder through the lack of situational, conditioning training; training that puts a team into extraordinary nontraditional response.

As maritime education training institutions there is an opportunity to re-condition the seafarer of today and tomorrow for any emergencies that arise. We prepare seafarers for a career at sea. They gain employment and hone their skills and knowledge to what is appropriate to their ships' needs and then gain experience. We very effectively provide them with the knowledge to enable them to move vessels from one port to another, to keep that vessel well maintained and to ensure that loading, unloading and other daily business is conducted as safely as possible. These skills become second nature due to daily ongoing exposure and are backed up with sound procedures, policies and safety management systems. Brooks (2014) discusses human error and the need to understand how and why it occurs within an emergency management environment, especially when there are training systems developed and intended to reduce and manage it. Many recorded instances of ship fires and events have led to abandonment or serious injury and despite much effort to train, qualify and measure seafarer credentials to avoid incidents of this nature they still occur.

The following autobiographical reflection focuses on the refresher training for fire and other emergency response brought about as a result of the Manila amendments of 2010. The Emergency Response Centre at the Australian Maritime College conducts this training as core business. The courses are exclusively short in nature with a maximum length of time being two days. Prescribe learning outcomes are expected and most are heavily weighted towards practical skills such as using a fire extinguisher on a class of fire, entering a life raft or extinguishing a fire using a fire hose whilst wearing breathing apparatus. This raises the question of what is a reasonable expectation of a seafarer to know and be able to do within this available time frames, e.g. is it reasonable to expect that a rating will know how to operate breathing apparatus safely or expect that a deck officer can manage a muster effectively and supervise the work of ratings during a simulated emergency and that everyone will have the ability to launch a life raft.

From the first refresher course mid 2014 it became evident that the expectations, or prescribed refresher outcomes might not necessarily be consistent with all ships' crew members as in many cases the ability or in-

ability to use certain equipment is directly attributed to the role and function of individual. Or in other words different ships have different ways of doing things which includes having rigid predetermined roles and responsibilities for individuals during day to day emergency drills and any real emergency that may arise. We are relatively fortunate in that we get to work with many students who achieved their STCW certification with us sometime in the past which provided us with the opportunity to measure and reflect on the success or otherwise of our original training methods.

The objective of any emergency short courses is to instill the basic knowledge and skills required to avoid an emergency, respond to an emergency and bring an emergency to a best case conclusion. Each course currently delivered is based on model courses directed by the IMO. Overall we meet and in some instances exceed the requirements of the IMO model courses for the Certificate of Safety Training and Certificate of Competency courses as required for STCW certification. We are confident that students leave us having completely fulfilled the requirements, but with the advent of refresher training, it has become apparent with returning students, that a high percentage have lost the underpinning knowledge that is important when responding to an emergency in a time efficient, safe manner. There is a lack of appreciation of the apparent risks and control measures required from an emergency perspective and some of the reasoning behind gathering enough of the right information to make informed decisions and set realistic priorities at all levels of an emergency response. It is apparent then that some facets of our training has not survived the test of time as well as it could. The question that arises out of this is why.

It could be argued that little or no exposure to actual or pseudo emergencies is to blame and that the modern age concern of record keeping, responsibility for welfare and safe systems of work continue to hinder realistic training scenarios on board ships. For example, mustering a full crew at night with little or no lighting and with theatre smoke would provide the realism of an actual emergency but, would it survive past a job safety analysis? In the same way, launching a life raft or setting a fire is impossible to achieve safely or fiscally. Hence the initial need for refresher training in the first place. Mandated refresher training should then, in time, increase the knowledge and skills of seafarers in the aspects of emergency response which cannot be maintained on-board but, should we stop there? Will this alone prepare crew and officers to respond to an actual emergency? Baumann et.al (2011) argue it may not. We may need to explore the dread factor as discussed by Burke et.al (2011) to make training for high risk low volume duties.

While quoting a small amount of literature the previous reflection has taken the teachers or self's view. To build on the argument that more can be done on board a ship to keep the seafarer conditioned to emergency response the following reflection is offered through the eyes of a senior ships officer who has served on a variety of shipping types, and having worked in a variety of roles the last of which was Chief Officer.

3 SELF AS STUDENT LENSE

As a deck officer, joining a MET institute provided an opportunity to reflect on the role and function and subsequent influence he and other ships officers have on those embarking on a career at sea during and after their initial training. Traditionally a cadet begins their career with many months of learning at a MET institute followed by periods of time at sea to gain experience and to put the theory of learning into practice to develop the necessary skills of a student's chosen vocation and to refine the knowledge gained from their studies in a real world environment.

The influence of on-board mentoring cannot be underestimated as a key component of a cadet's development and future career direction. Mentors will themselves have been mentored and will often reflect the same qualities as their own mentor as well as the culture of the vessel or of the company.

After becoming a lecturer it became apparent that there is a wide gap between following and exploring the sturdiness of policies and procedures and passing on knowledge of them to new crew members which became one of his duties as his career progressed. While equipped with many years of sea-going experience, there had only ever been informal train the trainer type preparation given to educate the officer as to how to teach and train the ship's crew. Reflecting into his role now and the skill and knowledge learnt matched with the quality of teaching that is required there are questions as to how efficient and effective some of this previous on-board training might have been.

The context of the teaching undertaken today has now evolved to maximize the student's learning in a short course environment. As a survival lecturer there is precious little time to impart the knowledge and hone the skill required by students, where as in contrast, the on-board environment provided a situation where it was possible to continually monitor and teach over a prolonged period of time if required.

Typical onboard training would consist of classroom type emergency training conducted monthly and consists of video, face to face teaching and practical equipment demonstrations. Fire and rescue boat drills

are conducted as required and followed up with debriefing to establish any deficiencies and efficiencies. It is suggested that emergency drills are strongly weighted towards testing procedures or equipment and that safety management systems (SMS) are regularly updated to reflect identified improvements.

Reflection is also drawn to comments previously made that actual firefighting or wet survival training occurs very early in a cadet's career, as part of their institutional learning and that until the Manila amendments 2010 were adopted that might be the last exposure to a realistic training environment, which could conceivably span an entire career, evident in comments that 30 years or more has lapsed since a student wore breathing apparatus. Many benefits are to be found in regular refresher training, the heat from an actual fire and learning how best to extinguish it or experiencing again how quickly being in the water can take the heat and strength of anyone required to abandon a vessel is an important lesson to remember but one that is easily forgotten when the day to day business of running a ship is the highest priority. These comments are echoing a common theme with anecdotal feedback from refresher training participants concluding with a statement that no matter how many times you work through the stress of managing a pseudo emergency with perceived sense of urgency attached to it, on-board drills cannot easily replicate the real life MET conditions.

4 PEER LENSE

In the preparation of this paper colleagues were invited to review our teaching methods and review our findings and in this regard we found some similarities with other maritime training that appeared to follow a similar pattern, this one is regarding confined space entry, another example of high risk work with too many fatalities.

On the 1st January 2015 the Maritime Safety Committee introduced a resolution that impacted the Safety of Life at Sea Convention, (SOLAS). These changes in particular were to mandate the conduction of enclosed space entry and rescue drills. This certainly was a move in the right direction, but is it enough? Will this alone stem the senseless loss of seafarer lives? These questions are asked because to date Enclosed Space Entry Training is not a mandatory short course. So it has to be asked what benchmarks will underpin the training, procedures and equipment requirements? Are the drills alone actually going to increase awareness, skills and knowledge of the inherent risk associated with working in and around these spaces? Will conducting drills improved the safety of seafarers, or are

we going to have substandard knowledge and skills being practiced through drills, coupled with poor procedures and in some cases inappropriate equipment?

The hazards associated with working in and around enclosed spaces have been known for many years; nevertheless seafarers are still dying in and by them. Historical accounts suggest this unnecessary loss of life is likely to continue, unless the global maritime community becomes more proactive in developing, embracing and enforcing; educational, procedural and equipment standards that address the harsh realities of enclosed space work.

While the Manila amendments 2010, and the Maritime Safety Committee's resolution introduced to provide the need for refresher training and conduction of drills in enclosed space rescue, student feedback would suggest that where this is being undertaken, it occurs in idealistic locations and conditions which in turn may impact on the effectiveness of safety and cautionary learning.

Further self-reflection covers the increased need for ships to undertake support and rescue of other ships crews or passengers legal and otherwise. The argument here is that while we undertake training to ensure the safety of crews and individuals in the event of vessel abandonment, nothing is done to prepare crews and officers for the seemingly inevitable responsibility to rescue others when requested. Training of personnel, particularly in emergency response, largely focusses on the seafarer's ability to deal with a grave on-board situation such as a fire or the sinking of their own vessel. Ship abandonment and sea survival have historically been trained with a focus on the way crew should safely abandon their own vessel and the understanding of strategies to ensure their survival while awaiting rescue. Crews however, are not being formally trained to become competent in assisting at the scene of a large scale humanitarian crisis involving many people requiring rescue at sea.

There has been many publications, Alan (2015), International Chamber of Shipping (2014) produced to assist or provide guidance to masters and crew in the event they find themselves in this situation, and while these documents are invaluable resources, there is no requirement to date that mandates training at a shore based maritime training establishment, or to conduct formal drills of a similar nature onboard ship in preparation to undertake a rescue at sea.

According to the International Organisation for Migration (IOM), disasters at sea such as the capsizing of a vessel transporting migrants have contributed to the loss of more than 40,000 lives since the year 2000. In 2014, more than 4,000 migrants lost their lives at sea attempting to reach their destination, Brian et al (2014).

A merchant ship at the scene of such a disaster would almost certainly be overwhelmed by the complexity and scale of a rescue that may involve an unseaworthy vessel with a very high number of passengers on board or already in the water. Some of the problems faced by the assisting merchant ship's master and crew initially include the ship handling and seamanship aspects to best assist the stricken vessel and the safe embarkation of many people of all ages on-board their ship.

Triaging and treatment of the sick and injured would also be a major concern as would the potential for disease and other health issues. Establishing quarantine areas on board would be necessary and procedures would be needed to deal with the deceased. Intermanager and ECSA have argued that rescues cannot be performed by merchant ships on a permanent basis due to the crews not being trained and the ships not designed to look after many additional people often requiring medical attention Shipowners (2015). Prior to a workshop in March 2015 to discuss solutions in dealing with large scale rescues at sea, Intermanager (2015) posted on their website that they believe discussion of crew training for rescue operations is an important subject for consideration where they have an obligation to find training solutions that will provide knowledge and skill to deal with these out of ordinary events.

5 CONCLUSION

The above reflections are by no means the end of this journey. What they have undertaken to achieve though is that we simply cannot rely on a five yearly cycle of senior experienced ship crews coming back through MET institutions to ensure the ongoing safety of our ships and crews at sea. It has been discussed that there are areas of training that simply does not exist yet we insist on putting our crews into roles where they are charged with the rescue of other shipboard persons who have had an emergency at sea; the current spate of rescue of sinking ships and the assistance offered. Crews are training to deal with one of their own overboard let alone charged with the rescue of several hundred persons. How does a failure in this area impact on the mental capacity and employability status of an ad hoc rescue team. The high fatality area of confined or enclosed spaces. Not a prescribed mandatory short course, but one built into most curriculum, and one that has a variety of teaching approaches by a variety of educators. Rescue on the other hand has become mandatory from the conducting of a drill perspective. But nothing has been introduced to suggest ways to eliminate the almost daily loss of life undertaking this high risk activity.

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