Maritime International Exchange (MIX):
Designing Blended, Application-Focused Exchange Programs to Increase Cross-Cultural Learning

Paul Szwed; M J Rooks

Massachusetts Maritime Academy, Kobe University,

Given the global nature of shipping and maritime business, cross-cultural awareness is a critical competence for maritime professionals. In order to address this need, a Maritime International Exchange (MIX) is presented as a maritime education and training (MET) program structure intentionally designed to improve cross-cultural learning and other maritime competencies. Using an instructional design process, a simple needs analysis was performed to evaluate MET student cultural awareness. Since MET students indicated they lack the knowledge, strategies, and communications necessary for high cultural awareness, the MIX program was developed. The MIX program is a blended-learning program that joins maritime students from MET institutions in different nations for engaged learning by bringing the various student cohorts and cultures together (initially online and ultimately together in person). The MIX program effectively exploits the following learning modalities: distance learning (including just-in-time skills building and explicit cross-cultural/language learning) and problem-based learning (including working in global virtual teams and in-residence maritime consulting). This paper presents the MIX program and provides a framework by which we can improve and assess MET student cultural competence.

Keywords:

Maritime Education and Training, Study Abroad, Culture/Language Acquisition, Blended Learning, Global Virtual Teams, Problem-based Learning, Maritime Consulting

1.   Introduction

Crews aboard ships are typically multinational [1] and tensions can arise from these differences [2]. Therefore, cross-cultural awareness is a critical competency for maritime professionals [3], [4] , [5]. The traditional approach to developing these cross-cultural competencies is through semester-long study abroad programs. However, creating these programs can prove difficult; there are challenges around curriculum matching, disruptions to and alignment of academic schedules, reciprocity agreements, differences in language/culture, and added expenses to both students and administrations. Furthermore, there is also evidence that semester-long programs result in less cultural exchange than some shorter programs [6]. Additionally, faculty-organized short programs can provide more powerful, focused learning [7] and these short programs can effectively increase cross-cultural adaptability [8]. Although there are numerous opportunities and programs that sponsor international collaboration between students, like the European Union-based Erasmus program, these tend to be longer exchanges (Erasmus programs are all between 3 – 12 months). Longer programs require serious commitments, are sometimes logistically impossible for students to partake in, and often result in participants forming cliques with other students with similar backgrounds, which decreases their effectiveness [6]. Shorter programs that require shorter, yet more intense bursts of communication and collaboration between students are easier for students to fit into their busy schedules, and also avoid some of the pitfalls of more traditional exchanges. Given these challenges and opportunities, many universities have embarked upon developing a variety of different study abroad [9] and exchange programs.

Figure 1 Model of phased cooperation among universities
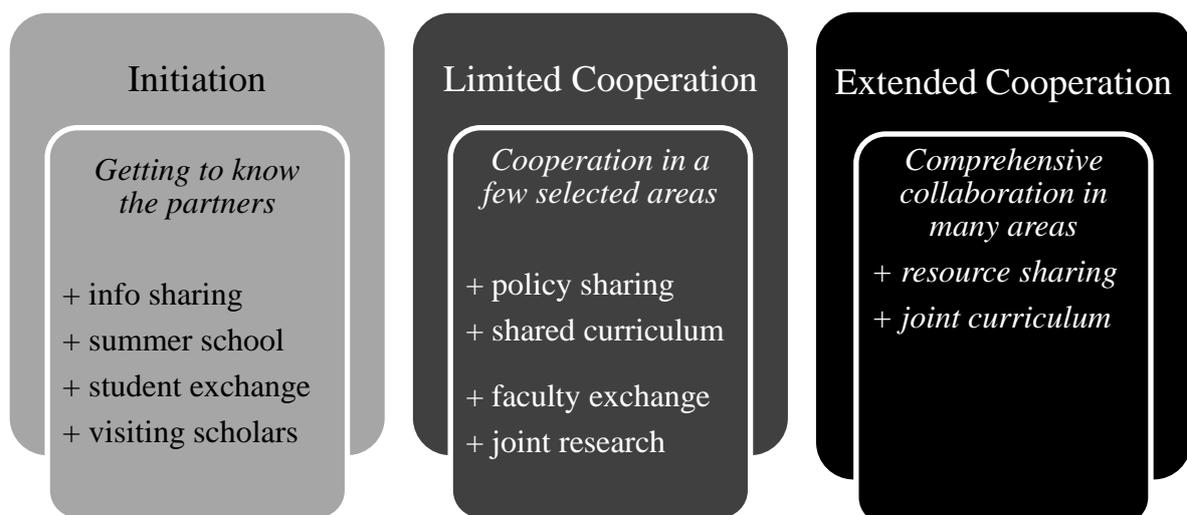
Source: Adapted from Schwald [10, p. 55]

1.1 International Collaboration

This paper proposes a model by which maritime education and training (MET) universities can partner in individual and collective efforts to develop the cultural competence of its students. It is envisioned that the *Maritime International Exchange* (MIX) program, which is a MET program structure intentionally designed to improve cross-cultural learning and other maritime competencies, will become a pilot by which enhanced cooperation and collaboration among MET universities can occur. This pilot study represents an initiation step in developing a partnership between the respective universities of the authors (see Figure 1).

1.2 Cultural Competence

Given these challenges and opportunities, it is envisioned that the MIX program will serve as a beneficial and economical way to help maritime students develop their cross-cultural awareness and maritime competencies.

Since students absorb and learn more effectively in their chosen professional context [11], [12], the MIX program puts maritime students into global virtual teams [13] to leverage problem-based MET learning [14] and solve real-world challenges for maritime sponsors. To develop the enabling cross-cultural competency [15], the MIX program will explicitly focus on cross-cultural awareness by promoting meaningful opportunities for foreign language communication and intercultural exchange (e.g., [16], [17], [18]) which helps them succeed in a global environment and successfully cope with unfamiliar situations [19]. The authors have developed a prototype of the MIX program and are deploying it using a pilot study framework [10].

Figure 2 Knirk and Gufstason instructional design model

396
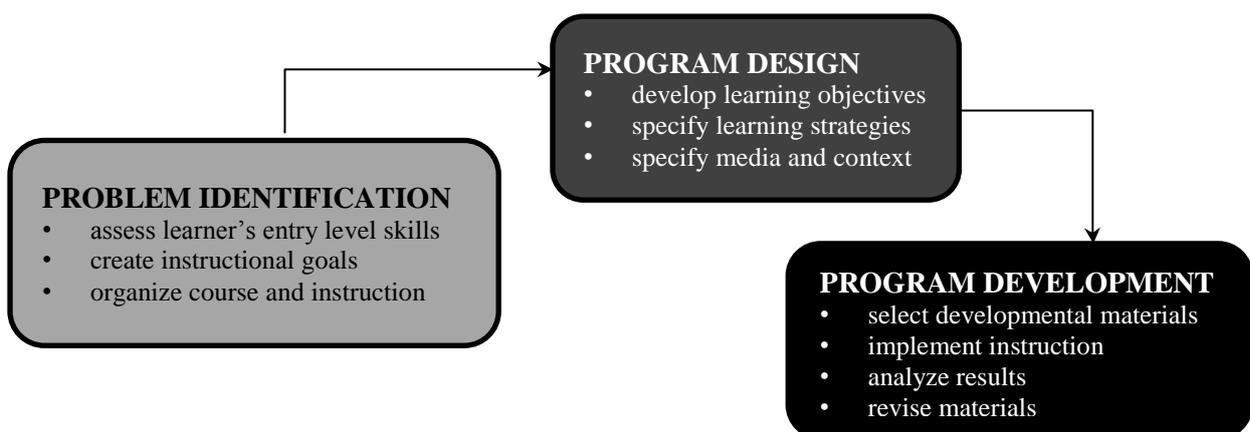
2. Maritime International Exchange (MIX) Program:

The Knirk and Gufstason instructional design model [20] was used as an organizing frame for developing the MIX program. Figure 2 shows this model as comprised of three phases: problem identification, design, and development.

This paper describes the work accomplished in the first two phases of developing the MIX program. It is envisioned that additional work on program development and implementation will take place in the coming year and years.

2.1   Problem Identification

In order to create a program that will focus on areas that students feel are important for developing their own cultural competency, an instrument was needed that could be used for both a simple needs analysis (in terms of students awareness of their own cultural knowledge levels and realizing a need for improvement) and as a tool for students to track their own cultural competency development. After evaluating a number of available tests [21], it was decided that a new instrument should be created designed to specifically address the key points of MIX.

The Cultural Awareness Test (CAT) that was used in this study was created by slightly adapting and simplifying Earley and Ang's Cultural Quotient (CQ) test in order to ensure maximum relevance to the university students participating in the survey. The CQ test [22] measures self-reported assessments of student motivation, cognition, metacognition, and behavior via a five-point Likert scale. In 2008, the CQ test was tested for validity by van Dyne, Ang, and Koh [23], who found it to have a robust four-factor structure which was stable across samples, time, and different countries. The CQ test was also found to have discriminant and incremental validity, and to be a reliable and valid measure of cultural intelligence.

The following are the five factors of CAT:
- Motivation – factor/construct remains unchanged from CQ
- Knowledge – cognition factor/construct remains unchanged from CQ, but name changed to provide clarity to non-native English speakers
- Strategy – meta-cognition factor/construct remains unchanged from CQ, but name changed to provide clarity to non-native English speakers
- Communication – new factor/construct because communication is a core skill for developing intercultural competence – one of the overarching objectives of the MIX program
- Needs – new factor/construct taken from what remained of behavior in CQ after communications was removed and placed into its own factor/construct

For each of the five factors of CAT, five-point Likert scale responses were used to assess the participants' intercultural competency (where the "1" indicated strong disagreement with the prompt and "5" indicated strong agreement). A full version of the CAT prompts (without the Likert scales) is provided in Appendix 1.

Thirty-six students currently enrolled as juniors and seniors at the Massachusetts Maritime Academy and forty-nine sophomores and juniors currently enrolled at Kobe University took the CAT in the form of an online survey. In general, the vast majority of students reported having a moderate levels of self-assessed cultural awareness (see Figure 3).

Figure 3 Student Self-Assessment of Cultural Awareness

Japanese students

American Students

High, 2%   Low, 0%

Low, 0%

High, 17%

Moderate, 98%

Moderate, 83%
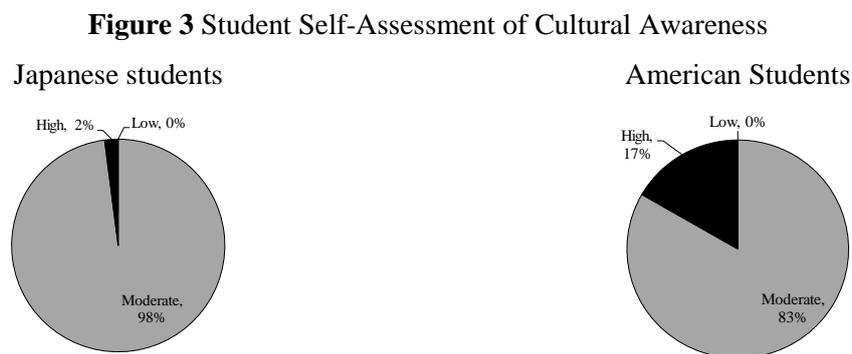
The cultural competence of the US students was not statistically different from that of the Japanese students (T=4.634, df=66, P=0.0000174 at the 95% level). In fact, there was no statistically significant difference between the two groups of students for any of the five factors on the CAT. This would indicate that both of these groups are essentially similar in their need for increased cultural awareness and would benefit from cross-cultural instruction.

Given that most students indicate that they have moderate cultural awareness, the cross-cultural element of the MIX program will be focused on particular areas (i.e., specific factors/constructs within the CAT) to improve cultural awareness. Figure 4 provides the mean response scores (on the five-point Likert scale) for both groups of students in each of the five factors of the CAT. With the exception of communication, US students generally self-assessed more highly on all skill levels of cultural awareness. Despite this difference, the order of the factors/constructs of the CAT in which students from each cohort self-assessed cultural awareness was the largely the same (see Figure 4). While most students indicated they possess motivation and needs toward cultural awareness (which indicates an awareness and openness on the students' behalf to further develop their intercultural communication skills); they lacked knowledge, strategy, and communications skills.

Figure 4 Ranking of self-reported cultural awareness using CAT (Greatest to Lowest Need)

	Japan	USA
Knowledge	2.4	2.9
Strategy	3.1	3.5
Communication	3.3	3.2
Motivation	3.3	3.9
Needs	3.9	3.9

For a more detailed description of student self-reported cultural awareness from each cohort, see Appendix 2.

With this needs analysis in mind, determining the instructional goals and course organization becomes a clear-cut task: students need to focus on how to increase their cultural knowledge by learning new cultural awareness strategies, which will in turn spur improved communication techniques.

2.2 Program Design

With the problem identified (i.e., insufficient cultural awareness), it was determined that the predetermined overarching goal of improving cultural competence was accurate and appropriate. Next, in the program design phase; learning objectives, learning activities, and learning assessments were identified.

When students successfully complete the MIX program, they should be able to:
- Demonstrate a high level of cultural competence (including communication and language).
- Work effectively in global virtual teams.
- Apply foundational knowledge to address a real-world maritime challenge.

These outcomes are aligned with the student learning outcomes of both institutions, but could be adapted or altered depending upon the specific needs of the students and programs involved in the MIX program.

Using these outcomes, the MIX program will be a blended-learning program that joins maritime students from MET institutions in different nations for engaged learning by bringing the various student cohorts and cultures together (initially online and ultimately together in person). The MIX program effectively exploits the following learning modalities: distance learning (including just-in-time skills building and explicit cross-cultural/language learning) and problem-based learning (including working in global virtual teams and in-residence maritime consulting).

The MIX program will use existing measures to evaluate development of the learning outcomes across the selected series of learning activities. The program intends to measure virtual learning [24]; team performance, conflict, and satisfaction [25]; trust and behaviors of the global virtual team [13]; language-learning [26] and cultural awareness using the CAT.

3. Summary:

Building upon the continued success of the IAMU Student (IAMUS) program that coincides with the AGA Conferences, the authors hope to explore new opportunities for student exchange utilizing the strong infrastructure provided by IAMU. While IAMUS has served as an important entry point for member institutions to offer MET students a chance to interact with each other in an academic environment, it is vital for member institutions to expand their international ties, and also important for IAMU as an organization to become a launching point for projects like the MIX program which can operate outside of the typical conference format. The MIX program is a bold attempt at providing a new model for intercultural exchange that IAMU institutions can incorporate into future plans for strengthening ties between members on various levels: between researchers, educators, and perhaps most importantly, the future generations found in our student ranks.

References:

[1] M. Progoulaki and M. Roe, "Dealing with multicultural human resources in a socially responsible manner: a focus on the maritime industry," *WMU Journal of Maritime Affairs,* vol. 10, no. 1, pp. 7-23, 2012.

[2] A. Couper, "Implications of maritime globalization for the crews of merchant ships," *Journal of Maritime Research,* vol. 2, no. 1, pp. 1-8, 2000.

[3] M. Javidan, P. W. Dorfman, M. S. De Luque and R. J. House, "In the eye of the beholder: Cross-cultural lessons in leadership from Project GLOBE," *Academy of Management Perspectives,* vol. 20, no. 1, pp. 67-90, 2006.

[4] G. Chen, B. L. Kirkman, K. Kim, C. I. Farh and S. Tangirala, "When does cross-cultural motivation enhance expatriate effectiveness? A multilevel investigation of the moderating roles of subsidiary support and cultural distance," *Academy of Management Journal,* vol. 53, no. 5, pp. 1110-1130, 2010.

[5] E. Kahveci, T. Lane and H. Sampson, "Transnational seafarer communities," Seafarers International Research Centre, Cardiff, 2002.

[6] L. Donnelley-Smith, "Global learning through short-term study abroad," *Peer Review,* vol. 11, no. 4, pp. 12-15, 2009.

[7] M. M. Dwyer, "More is better: The impact of study abroad program duration," *Frontiers: The Interdisciplinary Journal of Study Abroad,* vol. 10, pp. 151-164, 2004.

[8] S. C. Mapp, "The effect of short term study abroad programs onstudents' cultural adaptability," *Journal of Social Work Education,* vol. 48, no. 4, pp. 727-737, 2012.

[9] Instittute of International Education, "Profile of US study abroad students, 2000/1 - 2011/2," Sewickley, 2013.

[10] R. Schwald, "Towards a new practice of internationalization: A case study on short-term study abroad program at European institutions of higher education," *Review of European Studies,* vol. 4, no. 2, pp. 44-55, 2012.

[11] W. M. Cohen and D. A. Levinthal, "Absorptive capacity: A new perspective on learning and innovation," *Administrative Science Quarterly,* vol. 35, no. 1, pp. 128-152, 1990.

[12] N. Orion and A. Hofstein, "Factors that influence learning during a scientific firls trip in a natural environment," *Journal of Research in Science Teaching,* vol. 31, no. 10, pp. 1097-1119, 2006.

[13] S. Phandis, R. Perez-Franco, C. Caplice and Y. Sheffi, "Educating supply chain management professionals to work in global virtual teams," Council of Supply Chain Management Professionals, Lombard, IL, 2013.

[14] A. G. Cerit, Y. Zobra, D. A. Deveci and O. Tuna, "Problem-based learning in maritime education: How to design curriculums," Dokuz Eylul University, Izmir, Turkey, 2004.

[15] J. Koester and M. Lustig, Intercultural competence: Interpersonal communications across cultures, Boston: Allyn & Bacon, 2012.

[16] N. Carney, "Telecollaboration for intercultural learning of projects involving Japan," *JALT CALL Journal,* vol. 2, no. 1, pp. 37-52, 2006.

[17] S. L. Thorne and J. S. Payne, "Evolutionary trajectories, Internet-mediated expression, and language education," *Calico Journal,* vol. 22, no. 3, pp. 371-397, 2005.

[18] M. Okubo and H. Kumahata, "Collaborative culture studies over the Internet: Learning cultures with virtual partners," Tokyo Institute of Polytechnics, Tokyo, 2001.

[19] D. J. Bachner and U. Zeutschel, "Utilizing the effects of youth exchange: A study of the subsequent lives of German and American high school exchange participants," *Occassional Papers on International Educational Exchange,* vol. 31, pp. 4-55, 1994.

[20] F. G. Knirk and D. L. Gufstason, Instructional technology: A systematic approach to education, New York: Holt, Reinhart, and Winston, 1986.

[21] D. Matsumoto and H. C. Hwang, "Assessing cross-cultural competence: A review of available tests," *Journal of Cross-Cultural Psychology,* vol. 44, no. 6, pp. 849-873, 2013.

[22] P. C. Earley and S. Ang, Cultural intelligence: Individual interactions across cultures, Stanford, CA: Stanford University Press, 2003.

[23] L. van Dyne, S. Ang and C. Koh, "Development and validation of the CQS: The cultural intelligence scale," in *Handbook on cultural intelligence: Theory, measurement, and applications*, Armonk, NY, M.E. Sharpe, 2008.

[24] A. P. Rovai, M. J. Wighting, J. D. Bake and L. D. Grooms, "Development of an instrument to measure perceived cognitive, affective, and psychomotor learning in traditional and virtual classroom higher education settings," *The Internet and Higher Education,* vol. 12, no. 1, pp. 7-13, 2009.

[25] C. K. De Dreu and L. R. Weingart, "Task versus reslationship conflict, team performancem and team member satisfaction: A meta-analysis," *Journal of Applied Psychology,* vol. 88, no. 4, pp. 741-749, 2003.

[26] H. W. Allen, "Language-learning motivation during short-term study abroad: An activity theory perspective," *Foreign Language Annals,* vol. 43, no. 1, pp. 27-49, 2010.

Appendix 1: Cultural Awareness Test (CAT)

CA Motivation:
      1) I enjoy interacting with people from different cultures.
      2) I am confident that I can socialise with people in a culture that I am unfamiliar with.
      3) I believe I can cope with the stresses and anxiety of adjusting to a new culture.

CA Knowledge:
      1) I know about the legal and economic systems of other cultures.
      2) I know about the history, cultural, and religious beliefs of other cultures.

CA Strategy:
      1) I am aware of the cultural knowledge I use when interacting with people in intercultural situations.
      2) I am constantly looking to learn new cultural knowledge when interacting with people from a culture I know little or nothing about.
      3) I check the accuracy of my cultural knowledge as I interact with people from different cultures.

CA Communication:
      1) I know the rules (vocabulary, grammar, etc) of at least one foreign language.
      2) I adjust my verbal communication (accent, tone, speed, pronunciation, etc) when a intercultural interaction requires it.
      3) I adjust my non-verbal behaviour (gestures, posture, facial expression, eye contact, etc) when an intercultural situation requires it.

CA Needs:
      1) I feel like I need more exposure to different cultures to expand my world view.
      2) I think that intercultural exposure helps to increase my overall communication skills.
      3) So far in my life, I have had many chances for intercultural interaction.
      4) In the future, intercultural interactions will be an important part of my life/job.

Rubric:
15-26 points: You see yourself as having low Cultural Awareness. It is important for you to think about general ways that you can improve your cultural knowledge and increase your motivation to do so.

27-60 points: You see yourself as having moderate Cultural Awareness. You can focus on specific points to enhance your awareness and improve your drive in areas where you scored poorly on the test.

61-75 points: You see yourself as having high Cultural Awareness. You can still finely hone certain areas where you may need to complete your development into a truly well-rounded, culturally aware individual.

Cultural Awareness Test (CAT): Results of Cultural Awareness Survey

CA: Motivation

1-Strongly Disagree   2   3   4   5-Strongly Agree

CA: Knowledge

1-Strongly Disagree   2   3   4   5-Strongly Agree

CA: Strategy

1-Strongly Disagree   2   3   4   5-Strongly Agree

CA: Communications

1-Strongly Disagree   2   3   4   5-Strongly Agree

CA: Needs

1-Strongly Disagree   2   3   4   5-Strongly Agree