Developing cultural intelligence (CQ) in blended environments: Understanding and assessing experiential learning methods

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As educational technologies continue to expand in scope and depth, their application in traditional and blended learning environments pose a challenge to long-standing educational practices. One such approach, experience-based learning (EBL), has long been a favorite of educationists in a broad range of disciplines. Since the EBL method has been so closely and enduringly associated with other learning theories, it seems relevant to consider its role and relevance in a blended environment, since advances in the application of modern learning technologies is bound to have a profound impact on this more traditional educational approach. The current study aims to explore the role of EBL in a blended, in-class environment where it was applied to support the development of intercultural competence (ICC) in Japanese undergraduates. Given our project's larger concern with developing a comprehensive pedagogy for the cultivation of cultural intelligence (CQ) in higher education, we specifically wish to address the potential value of EBL in blended environments by giving attention to issues such as assessing EBL and its role and impact on CQ learning and -skill development. To assist our understanding of EBL's promise in this regard, we present data concerning the efficacy and impact of EBL activities from earlier stages of our project. Analysis of the data is then used to further problematize the question of CQ learning gains and how these could/should be obtained and analysed to demonstrate CQ development. We conclude that the role of EBL in developing CQ holds strong application potential for blended environments but requires a thorough understanding of its purpose and scope; and to achieve this, a proper assessment of EBL's impact on learning and skill development is necessary.

Key words: instructional design; cultural intelligence; experiential learning; blended learning; Japanese higher education

INTRODUCTION

Globalization has increased the cultural diversity that exists within both domestic and multinational organisations. This multicultural reality in work and academic environments is likely to increase even further in virtual worlds as online learning, teleworking and business exchange expand by means of the Internet (Fischer, 2011; Roux & Suzuki, 2017). Governments worldwide have long relied on colleges and universities to prepare the future workforce. In recent years it has been further recognized that a sufficiently capable, and internationally mobile workforce needs more than mere academic preparation to succeed and thrive in a globalized world. As a result, higher education institutions are increasingly involved in helping students to develop a set of adjacent soft-skills alongside the required academic and professional qualifications that they are likely to need, regardless of their chosen career path (Sit, Mak & Neill, 2017; Suharti, Handoko & Huruta, 2019). Human resource development research has recognized that people with a 'global mindset' often adapt to and engage more successfully with work environments characterized by high levels of diversity (Kedia & Mukherji, 1999; Roux, 2018). Similar research in the field of intercultural competence has highlighted the personal abilities that encapsulates the skills necessary to work in culturally diverse situations (Ang, Van Dyne & Tan, 2011; Leung, Ang & Tan, 2014). Recent developments in this area have suggested the notion of cultural intelligence (CQ) to denote the set of intercultural competencies that characterize a person who can adapt and work in diverse environments with ease and efficiency (Livermore, 2011; Ang, Van Dyne & Rockstuhl, 2012).

The current study forms part of a larger project that is concerned with the development of a comprehensive pedagogy for the cultivation of CQ in higher education (Roux & Suzuki, 2017; Roux, Suzuki, Matsuba & Goda,

2018; 2019a; 2019b; 2020). The project brings together the fields of instructional design and educational technology (ID&T) with developments in the areas of human resource training and CQ learning in Japanese higher education (Roux & Suzuki, 2017). Building on a unique framework that sought to synthesize well-known methods and models from these mentioned disciplines (Roux & Suzuki, 2017), the project expanded to a full-fledged blended (BL) university course to cultivate CQ in Japanese undergraduates (Roux et al., 2018; 2019a; 2019b).

Research in these overlapping areas suggest that experience-based learning (EBL) is often a preferred method of learning, if not fundamental to the development of intercultural competence (Leung et al., 2014). Given the fast-developing progress of educational technologies however, traditional educational methods (such as EBL), have received renewed scrutiny and instructors have come under increased pressure to adapt (Alonso, López, Manrique & Viñes, 2005, 2008; Roux, Suzuki, Matsuba & Goda, 2020; Kirste & Holtbrügge, 2019). The current paper presents another attempt at assessing the contribution of EBL to CQ learning design, by essentially posing two interrelated questions: (1) what is the relevance and role of EBL in CQ learning and development; and (2) how can this role of EBL be effectively assessed to demonstrate its effectiveness in blended environments?

Earlier research findings

EBL has long been a favored approach in designing learning interventions in the fields of education, training and development, and also intercultural skill development (Leung et al., 2014; Andresen, Boud & Cohen, 1995). Despite being widely utilized in educational contexts, little research has been done to explore EBL's potential in blended environments (Barnes, Smith & Hernández-Pozas, 2017; Roux et al., 2019; 2020; Kirste & Holtbrügge, 2019). Earlier efforts in the current project highlighted the role of experience-based learning (EBL) in a blended environment as a valuable element in the development of CQ. Findings indicated that although the use of EBL as a learning approach in a blended context likely combined to develop CQ, it was far less clear exactly *how* this was achieved (Roux et al., 2020). The role of EBL in CQ education is assumedly complex and the although the rationale for its use appear to be clear and not lacking validity, the means for assessing its use and efficacy remains to be thoroughly investigated (Roux et al., 2020; Gosen & Washbush, 2004). The integrative framework which formed the foundation of our investigation is reproduced in figure 1.

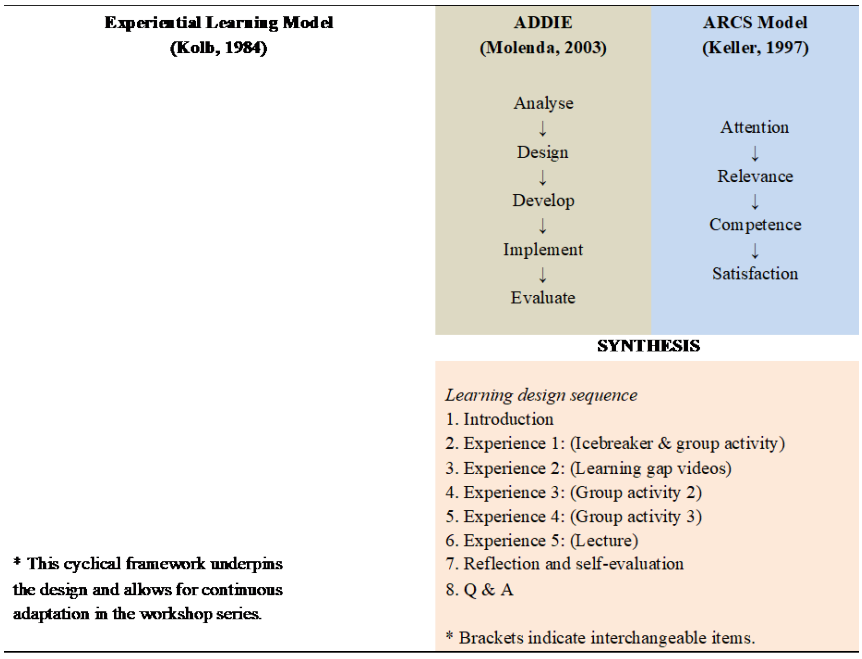


Figure 1. A model for integrating EBL, instructional design thinking and cultural learning

As outlined in earlier research work (Roux & Suzuki, 2017), the EBL model (Kolb, 1984) informed our basic design thinking and subsequent methodology. EBL has proven success ratings in intercultural training and learning and demonstrated effectiveness in CQ training and research (Barnes, Smith & Hernández-Pozas, 2017; MacNab, et al., 2012; Ng, Van Dyne & Ang, 2009). As a pedagogical approach in higher education, it has garnered support for its ability to help develop intercultural awareness and effectiveness in students (Barnes et al., 2017; Fischer, 2011; MacNab et al., 2012). In our model (figure 2), placing EBL alongside the chosen ID models (ADDIE & ARCS) allows their individual components to be

utilized in the development of CQ. Preceding studies utilizing this framework indicated that weaving these 3 models together enabled a design and implementation process (a blended course) that positively impacted CQ learning for undergraduates at a Japanese university (Roux et al., 2018; 2019a; 2019b).

While this framework successfully incorporated EBL with ID, much of the detailed application work needs to be disentangled in order to understand EBL's contribution to CQ in blended environments. In line with our purpose here, it was reasoned that obtaining these insights would throw light on assessing the role, value and assessment of EBL's unique contribution to CQ learning. In this regard, EBL has been described as a method with the capacity to transform experience into learning (Kolb, 1984). Our current effort therefore attempts to address the potential value of EBL in blended environments by giving attention to more detailed issues such as how to understand and assess the precise role and efficacy of EBL in CQ learning. To explicate this more closely in view of our current purpose, figure 2 below (adjusted from Roux & Suzuki, 2017) highlights the cultural learning content in relation to the relevant learning steps in the EBL model.

ADDIE Model		**ARCS Model**	**LEARNING CONTENT** *Cultural content & Intercultural competence training content*	Time	**Experiential Learning Model**
Setting, Description & Tasks		*Descriptors*	*Detail of learning contents*		*Description*
Analyze learning contents & audience	*Align goals & learning contents*	**Attention**	1 Outline of learning contents	**10**	
Design how it is to be learnt	*Mixed methods*		2 Experience 1: Ice breaker – EBL Discussion & self-reflection	**10**	**Frame & Initiate**
Develop learning materials	*Provided: Videos & Hand-outs*	**Relevance**	3 Experience 2: EBL – Discussion	**20**	
Implement in a real-world context	*Facilitate workshop*	**Confidence**	4 Experience 3: EBL – Discussion	**5**	
			5 Experience 4: EBL – Discussion	**10**	**Imagine & Experience**
			6 Lecture	**20**	
Evaluate adequacy of learning	*Evaluation of learning contents*	**Satisfaction**	7 Self-evaluation & workshop evaluation / Q & A	**10**	**Reflect, analyse & re-apply**

Figure 2. Detailed outline of the intercultural course/workshop learning design to show EBL activities

This breakdown formed the basic design thinking embedded in our approach to an initial multicultural workshop geared toward CQ learning and were expanded into a semester-long blended course (Roux et al., 2018; 2019a). Although earlier findings indicated that the course was successful in elevating CQ developments, other findings pointed to the necessity for further refinements and description of instructional procedures (Roux et al., 2019a). Moreover, while the various ways for assessing learning outcomes provided insights into different elements of the blended CQ course, the specific impact of EBL and the associated use of online support were not sufficiently descriptive in terms that would show the contribution of EBL (Roux et al., 2020). The general thrust of the shortcomings therefore indicate the need for a more sophisticated approach to assess the role of EBL; this would in turn give insights to the '*how'* of CQ learning and its underlying pedagogical support.

RESEARCH DESIGN & METHODS

In line with the current purpose, which is to reconsider and assess EBL's unique contribution to CQ learning, we focus attention on: (1) learning reflection surveys, (2) class reviews (comprising formative assessments of the content and instruction) and (3) a set of questions that formed part of a learning reflection checklist. Table 1 provides a detailed breakdown of the instructional modalities, the learning assessment elements and the questions that were identified as potentially indicative of EBL's postulated impact on learning. Four

different groups are presented. Groups 1 and 2 participated in a multi-cultural workshop for CQ learning and were asked to provide feedback on their learning preferences. Groups 3 and 4 participated in a 15-week semester blended course aimed toward CQ development. We acknowledge that it is not possible to compare the groups; instead, we aimed to emphasize their responses on the learning feedback as a means to investigate the impact of EBL. To assist the analysis, we include previously published data (group 1) (Roux & Suzuki, 2017) and add similar contrastive data (group 2) to expand the opportunities for analysis and understanding. Slight adjustments to surveys/learning assessments are noted where applicable. The ensuing discussion aims to further problematize the question of EBL gains and how these could/should be obtained and analysed to understand CQ learning.

Table 1. Key instructional modalities/forms for a learning impact analysis of EBL

Instructional modality	Learning assessment elements	Learning statements for research purposes
Cultural learning workshop 1 (Roux & Suzuki, 2017) Group 1 (2017) (N = 47)	1. Learning statements	1. I learn best by myself, quietly reading or studying. 2. I learn best in a small group, studying and talking. 3. I learn best when a teacher talks and explains in a lecture. 4. I learn best when I can use technology (PC, smart device) to write, watch and do research.
	2. Five EBL-based instructional elements: Activity & group-based discussion	*EBL-based workshop elements* 1. Cultural symbols drawing 2. 'Group areas act' 3. Learning gap / Interactive quizzes 4. Lecture 5. Multi-cultural groups
Cultural learning workshop 2 Group 2 (2018) (N = 40)	1. Learning statements	Learning statements 1-4 as above. 5. I enjoy interacting with people from different cultures. * *Added for Workshop 2*
	2. Five EBL-based instructional elements: Activity & group-based discussion	*EBL-based workshop elements* 1. Cultural symbols drawing 2. 'Group areas act' 3. Learning gap / Interactive quizzes 4. Lecture 5. Multi-cultural groups
Blended course 1 Group 3 (2018) (N = 27) ---------- Blended course 2 Group 4 (2019) (N = 33)	Learning reflection checklist	1. Activities in a group or with a partner are useful for learning. 2. Working online using a smartphone or PC is useful for learning. 3. Reading a textbook and answering questions is useful for learning. 4. Listening to a lecture by the teacher is useful for learning. 5. Watching a video or short movie clip about a topic is useful for learning. 6. Participating in an online exchange with foreign students is useful for learning. 7. Having a class where there are different ways of learning is interesting and useful.

RESULTS

Results from cultural learning workshop 1 (group 1)

As highlighted in table 2, the marked areas of *somewhat agree* and *agree* displays increased agreement for questions 2, 3 and 4, as observed pre/post workshop 1. Notably, these 3 questions all relate to an interactive element (whether with classmates, the instructor, or a learning tool). Although this is not a significant finding in itself, the impact of the short workshop on the learning statements is nevertheless noticeable and shows that participants react positively if there is something/someone to engage with in a blended situation.

Table 2. Learning statements pre- & post workshop 1 (group 1)

Workshop 1	*Disagree*		*Somewhat disagree*		*Neutral*		*Somewhat agree*		*Agree*	
Learning statement	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
1. I learn best by myself, quietly reading or studying	0	4.3	10.6	8.5	36.2	34	27.7	27.7	25.5	25.5
2. I learn best in a small group, studying and talking.	6.4	2.1	8.5	4.3	27.7	25.5	40.4	46.8	17	21.3
3. I learn best when a teacher talks and explains in a lecture.	2.1	0	10.6	10.6	34	17	46.8	59.6	6.4	12.8
4. I learn best when I can use technology (PC, smart device) to write, watch and search for answers.	0	0	27.7	19.1	29.8	29.8	23.4	29.8	19.1	21.3

Results from cultural learning workshop 2 (group 2)

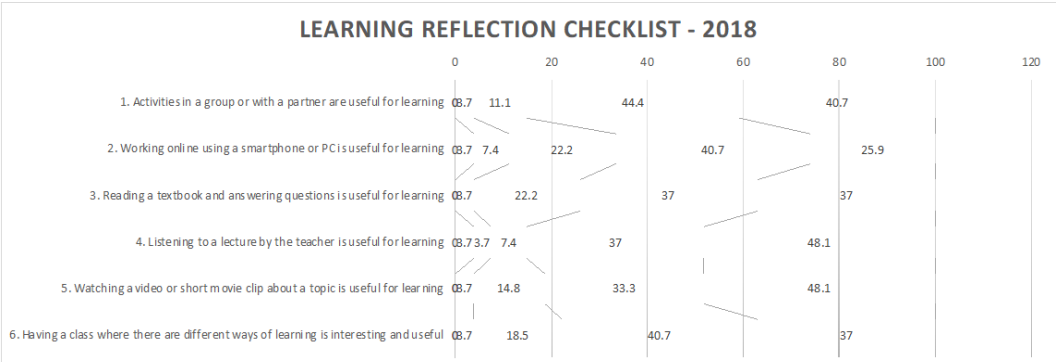
Likewise, table 3 reflect similar shifts in the learning statements as observed in workshop 1. However, there is also a shift in statement 1 for this group, possibly indicating that these participants prefer this style. For this workshop, a fifth question was added to consider the combination of instructional choices, which seemed a very popular consideration among participants and thus indicated that instructional variety could be a key ingredient during a workshop. In retrospect, workshop 2 was less interactive and occurred in a lecture hall, whereas workshop 1 was more interactive, groups were pre-organized around tables facing each other. These choices may explain the lesser shift in questions 2-4 and the different result in observed when question 1 is compared.

Table 3. Learning statements pre- & post workshop 2 (group 2)

Workshop 2	*Disagree*		*Somewhat disagree*		*Neutral*		*Somewhat agree*		*Agree*	
Learning statement	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
1. I learn best by myself, quietly reading or studying	0	0	7.5	10	42.5	25	50	60	0	5
2. I learn best in a small group, studying and talking.	0	0	12.5	10	22.5	15	55	55	10	20
3. I learn best when a teacher talks and explains in a lecture.	0	0	5	0	30	25	55	52.5	10	22.5
4. I learn best when I can use technology (PC, smart device) to write, watch and search for answers.	2.5	0	37.5	20	35	45	22.5	27.5	2.5	7.5
5. I learn best when I can follow a combination of the previous ways (1-4).	2.5	0	0	0	35	25	17.5	27.5	45	47.5

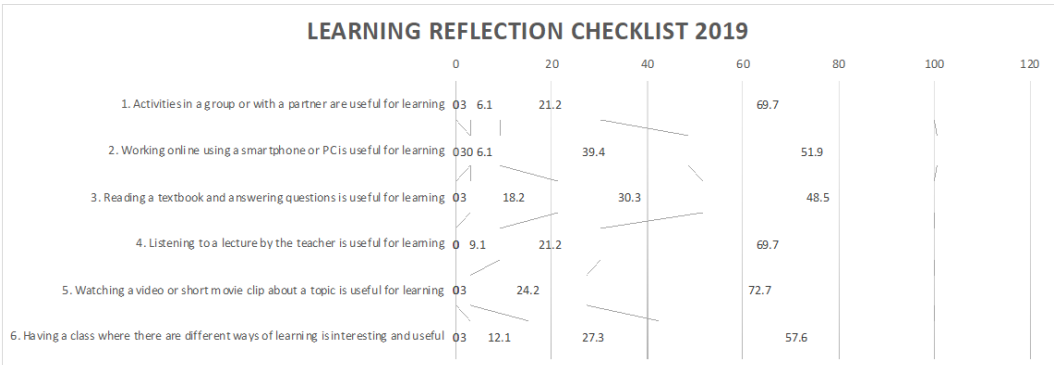
Results from the blended course: Learning feedback checklist (groups 3 & 4)

As stated earlier, a 15-week blended course to cultivate CQ was designed, keeping in mind our original framework and the original workshop as outflow. To consolidate this course, a learning reflection checklist was designed with an eye to the self-assessment of learning gains and the impact of the mode of instruction. As outlined in table 1, six broad questions related to learning were recorded on a 6-point Likert scale and are analysed here to form an idea of the usefulness of the participants experienced. As is observable from both checklists (figures 3 & 4), the clear majority of responses fall in the (5-6 *definitely useful*) range. Comparing the different modes of instruction across the 2 checklists shows even further increases in the learning preferences for the second checklist. Of note in both learning checklists are elevated preferences for questions 1 (group activities), 4 (lectures), 5 (audio-visual) and 6 (instructional variety). For the 2nd group, these preferences are even further elevated.



	6. Having a class where there are different ways of learning is interesting and useful	5. Watching a video or short movie clip about a topic is useful for learning	4. Listening to a lecture by the teacher is useful for learning	3. Reading a textbook and answering questions is useful for learning	2. Working online using a smartphone or PC is useful for learning	1. Activities in a group or with a partner are useful for learning
1 not at all	0	0	0	0	0	0
2	0	0	3.7	0	3.7	0
3	3.7	3.7	3.7	3.7	7.4	3.7
4	18.5	14.8	7.4	22.2	22.2	11.1
5	40.7	33.3	37	37	40.7	44.4
6 definitely	37	48.1	48.1	37	25.9	40.7

Figure 3. Group 3 – Results from a learning reflection checklist



	6. Having a class where there are different ways of learning is interesting and useful	5. Watching a video or short movie clip about a topic is useful for learning	4. Listening to a lecture by the teacher is useful for learning	3. Reading a textbook and answering questions is useful for learning	2. Working online using a smartphone or PC is useful for learning	1. Activities in a group or with a partner are useful for learning
1 not at all	0	0	0	0	0	0
2	0	0	0	0	3	0
3	3	0	0	3	0	3
4	12.1	3	9.1	18.2	6.1	6.1
5	27.3	24.2	21.2	30.3	39.4	21.2
6 definitely	57.6	72.7	69.7	48.5	51.9	69.7

Figure 4. Group 4 – Results from a learning reflection checklist

FINDINGS & DISCUSSION

The current paper represents a further attempt at assessing EBL's contribution to CQ learning design, by essentially posing two interrelated questions: (1) what is the relevance and role of EBL in CQ learning and development; and (2) how can this role of EBL be effectively assessed to demonstrate its effectiveness in blended environments? These questions were explored by means of analysing the participant feedback during two intercultural learning workshops and two learning reflection checklists following two semester-long blended courses to develop CQ. Findings from the two workshops highlight that participants favoured instructional variety and group-based learning activities, which is reiterated in similar findings from the blended courses. Participants also reported preferences for receiving lectures by the instructor, engagement with audio-visual materials and an increasing preference for doing online work using PCs/smart devices. Previous research ventures in this project (Roux & Suzuki, 2017; Roux et al., 2018, 2019a, 2019b, 2020) linked CQ learning to similar analyses and found support that CQ development was achieved through the instructional design and methods. It remains difficult to isolate the direct impact of EBL's exact contribution to the CQ learning process, however.

These findings lend some justification to the reported design and methodology. While positive – given the fairly recent growth of learning in blended environments – the findings are hardly surprising when considering that they merely support the established consensus regarding 'active learning': participants like to be engaged and achieve better results when they are actively occupied and can use various learning tools comfortably during learning. The findings thus appear to confirm the consensus that individual learning – which is at the centre of EBL – remains difficult to assess and measure effectively (Gosen & Washbush, 2004). In terms of EBL, the individual learning response is mostly measured through self-assessment and this aspect might well have to be explored in a more individualized and qualitative manner. Future work will need to explore this contention by delving deeper into the individualized understandings of CQ learning and development.

CONCLUSION

The current study aimed to explore the role of EBL in a blended, face-to-face environment where it was applied to support the development of intercultural competence (ICC) in Japanese undergraduates. Given our project's larger concern with developing a comprehensive pedagogy for the cultivation of cultural intelligence (CQ) in higher education, we specifically addressed the potential value of EBL in blended environments by giving attention to issues such as assessing EBL and its role and impact on CQ learning and -skill development. To assist our understanding of EBL's promise in this regard, we presented data concerning the efficacy and impact of EBL activities from two workshops and two blended courses in our project. This analysis was used to problematize the question of CQ learning and how it could/should be obtained to demonstrate CQ development. We conclude that the role of EBL in developing CQ holds strong potential for blended environments but requires a thorough understanding of its purpose and scope; and to achieve this, a proper assessment of EBL's impact on learning and development is necessary. Findings point toward the necessity for building more individualized understandings of intercultural learning if an appropriate EBL pedagogy is to be developed for CQ growth.

REFERENCES

Alonso, F., López, G., Manrique, D., & Viñes, J. M. (2005). An instructional model for web-based e-learning education with a blended learning process approach. *British Journal of Educational Technology, 36*(2), 217–235.

Alonso, F., López, G., Manrique, D., & Viñes, J. M. (2008). Learning objects, learning objectives and learning design. *Innovations in Education and Teaching International*, *45(4)*, 389–400.

Andresen, L., Boud, D. & Cohen, R. (1995). Experience-based learning: Contemporary issues. In: G. Foley (Ed.) *Understanding Adult Education and Training*, (Second Edition) (pp. 225–239). Sydney: Allen & Unwin.

Ang, S., Van Dyne, L, & Rockstuhl, T. (2012). Cultural intelligence: Origins, conceptualization, evolution, and methodological diversity. In M. J. Gelfand, C. Chiu, & Y. Hong, (Eds.) *Handbook of Advances in Culture and Psychology* (pp. 273–322). Oxford: Oxford University Press.

Ang, S., Van Dyne, L., & Tan, M. L. (2011). Cultural intelligence. In R. Sternberg & S. B. Kaufman (Eds.), *The Cambridge Handbook on Intelligence*, (pp. 582–602). Cambridge: Cambridge University Press.

Barnes, K. J., Smith, G. E., & Hernández-Pozas, O. (2017). What's Your CQ? A framework to assess and develop individual student cultural intelligence. *Organization Management Journal, 14*(1), 34–44.

Eisenberg, J., Lee, H., Brück, F., Brenner, B., Claes, M., Mironski, J. & Bell, R. (2013). Can business schools make students culturally competent? Effects of cross-cultural management courses on cultural intelligence. *Academy of Management Learning & Education, 12*(4), 603–621.

Fischer, R. (2011). Cross-cultural training effects on cultural essentialism beliefs and cultural intelligence. *International Journal of Intercultural Relations, 35*(6), 767–775.

Gosen, J., & Washbush, J. (2004). A review of scholarship on assessing experiential learning effectiveness. *Simulation & Gaming, 35*(2), 270–293.

Kedia, B. L., & Mukherji, A. (1999). Global managers: Developing a mindset for global competitiveness, *Journal of World Business, 34(3)*, 230–251.

Keller, J. M. (1997). Motivational design and multimedia: Beyond the novelty effect. *Strategic Human Resource Development Review, 1*(1), 188–203.

Kirste, L., & Holtbrügge, D. (2019). Experiential learning in the digital context: An experimental study of online cultural intelligence training. *Journal of Teaching in International Business*, *30*(2), 147–174.

Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Leung, K., Ang, S., & Tan, M.L. (2014). Intercultural competence. *Annual Review of Organizational Psychology and Organizational Behavior 1*(1), 489–519.

Livermore, D. (2011). *The Cultural intelligence difference special e-book edition: Master the one skill you can't do without in today's global economy.* New York: AMACOM.

Macnab, B., Brislin, R. & Worthley, R. (2012). Experiential cultural intelligence development: context and individual attributes. *The International Journal of Human Resource Management, 23*(7), 1320–1341.

Macnab, B., Brislin, R. & Worthley, R. (2012). An experiential approach to cultural intelligence education. *Journal of Management Education 36*(1), 66–94.

Roux, P.W., Suzuki, K., Matsuba, R. & Goda, Y. (2020) (forthcoming). Developing cultural intelligence (CQ) through experiential learning: Considering relevance and rationale in blended environments. *The Journal of Information and Systems in Education 19*(1).

Roux, P.W., Suzuki, K., Matsuba, R. & Goda, Y. (2019a). Examining the self-perceived development of cultural intelligence (CQ) in a blended learning environment. *The Journal of Information and Systems in Education 18*(1) 69–76.

Roux, P.W., Suzuki, K., Matsuba, R. & Goda, Y. (2019b). Designing instruction to develop cultural intelligence (CQ): Reporting on blended learning outcomes at a Japanese university. *International Journal for Educational Media and Technology, 13*(1), 27–34.

Roux, P.W. (2018). Developing a global mindset: Designs for blended learning. *Journal of the Organization for General Education, 6,* 146–156. Saga University, Japan.

Roux, P.W., Suzuki, K., Matsuba, R. & Goda, Y. (2018). Developing cultural intelligence (CQ): Designs for blended learning. *International Journal for Educational Media and Technology, 12*(1), 18–28.

Roux, P.W., & Suzuki, K. (2017). Designing online instruction for developing cultural intelligence (CQ): A report from a classroom-based workshop. *International Journal for Educational Media and Technology, 11*(1), 87–96.

Sit, A., Mak, A. S., & Neill, J. T. (2017). Does cross-cultural training in tertiary education enhance cross-cultural adjustment? A systematic review. *International Journal of Intercultural Relations*, *57*, 1–18.

Suharti, L., Handoko, Y., & Huruta, A. (2019). Linking cultural intelligence and adaptive performance: do intercultural interactions and Host University Support™ play important roles? *Business, Management and Education*, *17*, 36–48.

Thomas, M., Mitchell, M., & Joseph, R. (2002). The third dimension of ADDIE: A cultural embrace. *TechTrends, 46*(2), 40–45.