

Developing cultural intelligence (CQ) in blended environments: Towards an appraisal of experiential learning

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The expansion of educational technologies continues to pose a challenge to traditional educational practice. Experience-based learning (EBL) has remained a firm favorite of educationists and trainers, and it seems relevant to reconsider its role and relevance given the recent wide-spread adoption of blended learning environments. As part of a larger project concerned with developing cultural intelligence (CQ) in Japanese higher education, the current study explored the role of EBL in a blended environment where it was applied to help develop intercultural competence in undergraduates. Issues in assessing EBL and its role and impact on CQ learning and -skill development are explored and data concerning the efficacy and impact of EBL activities from earlier stages of the project are presented. The analysis problematizes the EBL model with reference to CQ learning and suggests a reconsideration of the model in view of the recent global pandemic and the profound impact of educational technologies on learning.

Keywords: blended learning; cultural intelligence (CQ); experiential learning; instructional design; Japanese higher education

Introduction

Recent years have brought about the recognition that a sufficiently capable and internationally mobile workforce needs more than mere academic preparation to succeed and thrive in a globalized world. Consequently, higher education institutions (HEI) are increasingly involved in helping students develop a set of adjacent soft skills alongside the required academic and professional qualifications that they are likely to need, regardless of their eventual career path (Sit, Mak & Neill, 2017; Suharti, Handoko & Huruta, 2019; Fang, Shchei & Selart, 2018). Similarly, research developments in human resources have recognized that people with a 'global mindset' often adapt to and engage more successfully with work environments characterized by high levels of diversity (Macnab, Brislin & Worthley, 2012; Kedia & Mukherji, 1999; Roux, 2018). Research in the field of intercultural competence (ICC) has highlighted some of 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 ICCs that describes a person who can adapt and work in diverse environments with ease and efficiency (Livermore, 2011; Ang, Van Dyne & Rockstuhl, 2012).

As a four-factor model, CQ has its roots in intelligence theory, yet is seen as a distinct set of capacities that extends beyond mere cognitive and emotional intelligences (Ang et al., 2011). The four underlying capacities refer to: (a) cognition, which includes knowledge about how cultures are similar/different; (b) metacognition, which refers to the mental strategies required to make sense of the nuances inherent to diverse cultural experiences; (c) motivation, or the interest and associated confidence in culturally diverse situations, and (d) behavior, which signifies an ability to adjust and adapt to diverse socio-cultural (verbal and/or non-verbal) encounters (Leung et al., 2014). CQ, given its emphasis on the personal development of intercultural

competence, has become a popular model for scholars, practitioners and trainees in the fields of management and human resources (Leung et al., 2014; Fang et al., 2018).

The current study forms part of a larger project that is concerned with the development of a comprehensive pedagogy for cultivating CQ in Japanese HEI (Roux & Suzuki, 2017; Roux, Suzuki, Matsuba & Goda, 2018; 2019a; 2019b; 2020). The project links the fields of instructional design and educational technology (ID&T) with developments in the areas of human resource (HR) training and CQ learning (Roux & Suzuki, 2017). Building on a unique framework that sought to synthesize well-known models and methods from these mentioned disciplines (Roux & Suzuki, 2017), the project expanded to a full-fledged blended (BL) course to specifically investigate the development of CQ in Japanese undergraduates (Roux et al., 2018; 2019a; 2019b). Pedagogical approaches inherent to HR training suggest that experience-based learning (EBL) is often preferred, if not fundamental to the development of ICC (Leung et al., 2014; Vande Berg, Paige & Lou, 2012). Given the rapid proliferation of educational technologies, traditional educational methods (such as EBL), have received renewed scrutiny and instructors have come under increased pressure to adapt traditional learning approaches (Alonso, López, Manrique & Viñes, 2008; Roux, Suzuki, Matsuba & Goda, 2020; Kirste & Holtbrügge, 2019). The current paper presents a further attempt at assessing the contribution of EBL to CQ learning design by posing two interrelated questions: (a) what is the relevance and role of EBL in CQ learning and development; and (b) how should the role of EBL be assessed to demonstrate its effectiveness in BL environments?

Earlier research findings

EBL has long been a model of choice for learning design in the fields of education, training and development and specifically, ICC development (Leung et al., 2014; Passarelli & Kolb, 2012; Andresen, Boud & Cohen, 1995). EBL has been widely applied in study-abroad programs (Vande Berg et al., 2012), has proven success ratings in intercultural training and learning and has also demonstrated effectiveness in CQ training and research (Fang et al., 2018; Barnes, Smith & Hernández-Pozas, 2017; MacNab, et al., 2012; Ng, Van Dyne & Ang, 2009). EBL's utilization in HEI has garnered support for its ability to help develop intercultural awareness and competence (Barnes et al., 2017; Fischer, 2011; MacNab et al., 2012; Vande Berg et al., 2012). Despite being widely utilized in educational contexts, surprisingly little research has been done to explore EBL's potential in BL environments (Barnes, Smith & Hernández-Pozas, 2017; Roux et al., 2019; 2020; Kirste & Holtbrügge, 2019).

Although EBL as a trusted methodology in intercultural competence development and CQ education is well-established, understanding its unique contribution remains complex. EBL typically involves areas at the core of an individual's learning experience (learning values, hopes, confidence, uncertainties, to exemplify), and is understood to be a mostly subjective experience (Kolb & Kolb, 2017). To complicate matters further, assessing the impact of EBL typically relies on subjective self-estimations of improvement – particularly when measuring skill developments or competence gains. The role of EBL in ICC training therefore remains complex and although the rationale for its application seems intuitive and appears straightforward, the means for understanding and assessing its use and efficacy remains to be thoroughly investigated (Kolb & Kolb, 2017; Kuk & Holst, 2018; Roux et al., 2020; Gosen & Washbush, 2004).

EBL constitutes a foundational principle in the current project and was integrated with well-known instructional design models (ADDIE & ARCS), forming the basis of an initial multicultural workshop to develop ICC in undergraduates at a Japanese university (Roux & Suzuki, 2017). Findings from this workshop indicated a successful synthesis of theoretical concepts, providing a platform for further investigation and the expansion to a full course aimed at CQ development (Roux, Suzuki, Matsuba & Goda, 2018). In essence, the original framework placed EBL alongside the chosen ID models (ADDIE & ARCS) to allow for each of the

models' components to be aligned, calibrated and integrated to support CQ growth (Roux & Suzuki, 2017). Later studies utilizing this framework enabled a design- and implementation process for a blended course that significantly impacted CQ learning for undergraduates (Roux et al., 2018; 2019a; 2019b; 2020). Earlier efforts in the current project highlighted the role of EBL in a BL environment as a valuable component of CQ growth (Roux et al., 2020). Findings indicated that although its utilization assisted in the development of CQ, it was far less clear exactly *how* this was achieved (Roux et al., 2020).

The original framework for the multicultural workshop (Roux & Suzuki, 2017) (figure 1) shows Kolb & Kolb's (2017) EBL model. While this framework successfully incorporated EBL with ID, much of the detailed application requires deeper analysis in order to better understand EBL's specific contribution to CQ in blended environments. In line with the stated purpose of appraising EBL's unique contribution to CQ development, it was reasoned that obtaining these insights would deliver a more exacting understanding of the role and value of EBL's unique contribution to CQ learning. Since EBL has been described as a method with the capacity to transform experience into learning (Kolb, 1984), and considering later criticisms of the approach for obscuring contextual influences in the learning process (Jarvis, 1987, Gosen & Washbush, 2004), it was reasoned that the impact of blended learning on EBL as a pedagogical approach required further attention.

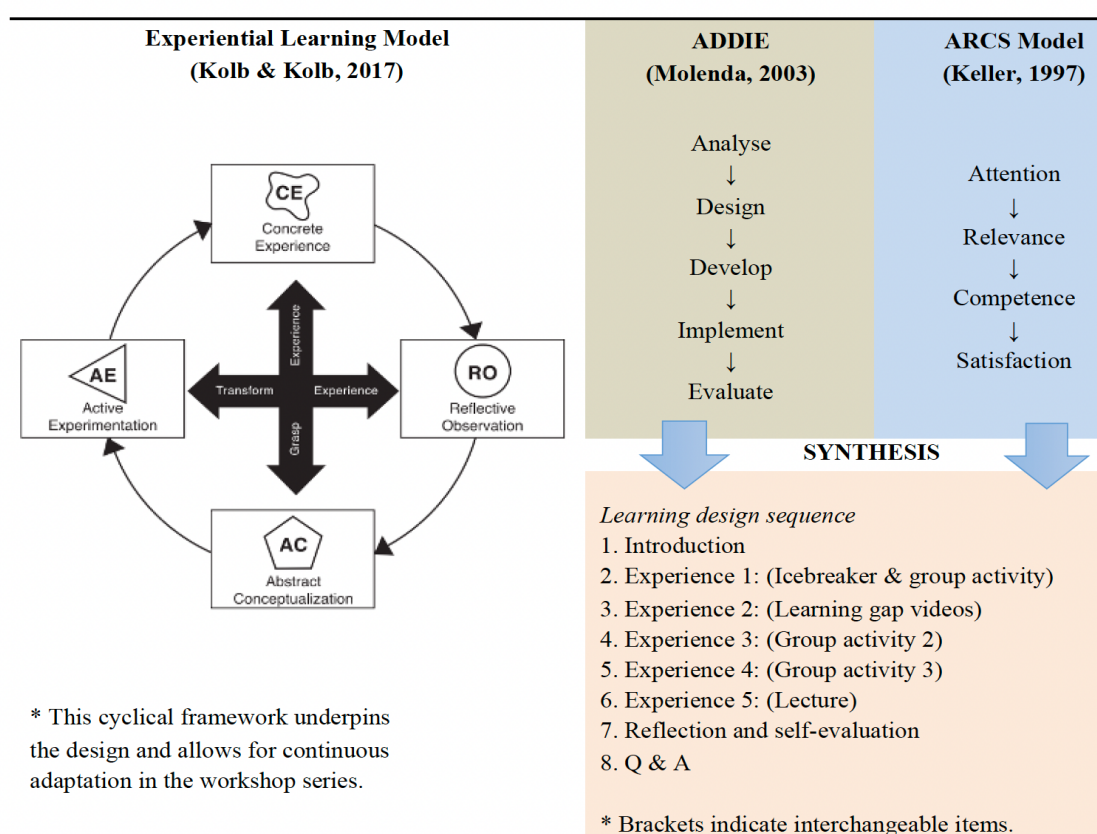


Figure 1. A model for integrating EBL, instructional design thinking and cultural learning. Adapted from “Designing online instruction for developing cultural intelligence (CQ): A report from a classroom-based workshop”, P.W. Roux & K. Suzuki, 2017. International Journal for Educational Media & Technology 11 (1), p. 89. Copyright Japan Society for Educational Media (JAEMS) [2017]. The Experiential Learning Cycle. Reproduced from A.Y. Kolb & D.A. Kolb, 2017. Experiential learning theory as a guide for experiential educators in higher education. ELTHE: A Journal for Engaged Educators, 1(1), p. 11. Copyright NSUWorks [2017].

Although earlier findings indicated that the course was successful in elevating CQ growth, 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 could show the contribution of EBL (Roux et al., 2020). The general thrust of these earlier limitations therefore indicated the need for a more sophisticated approach to assess and understand the role of EBL. Such an appraisal would give insights into the ‘*how*’ of CQ learning and, in turn, also provide further indications for ‘*what*’ may be required in terms of developing the necessary underlying pedagogical support.

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

Figure 2. Outline of CQ learning design sequence to show EBL activities aligned with ID models. Reproduced from “Designing online instruction for developing cultural intelligence (CQ): A report from a classroom-based workshop”, P.W. Roux & K. Suzuki, 2017. *International Journal for Educational Media & Technology* 11 (1), p. 89. Copyright Japan Society for Educational Media (JAEMS) [2017].

Research Design and Methods

To assess and reconsider EBL’s unique contribution to CQ learning, the following instructional items are presented for analysis: (a) learning reflection surveys, (b) class feedback reviews (comprising formative assessments of the content and instruction) and (c) a set of questions that formed part of a learning reflection checklist. Table 1 provides a detailed breakdown of these instructional procedures, learning assessments and

questions that were identified as potentially indicative of EBL's role in 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 at CQ development. It is acknowledged that it is not possible to directly compare the groups; instead, the aim is to contrast and emphasize participant responses on the learning feedback as a means to investigate the impact of EBL.

To assist the analysis and expand opportunities for understanding, previously published data (group 1) (Roux & Suzuki, 2017) is reproduced and contrasted alongside a later set of similar data (group 2). Slight adjustments to surveys/learning assessments for group 2 are noted where applicable. Participants for the two workshops were a mixed group of local (predominantly) Japanese and international (Asian) undergraduates, while the two blended courses were all Japanese 2nd or 3rd year (19-21 years old) students. For enrolment in these English-based workshops and courses, students were required to be functionally literate in English at the intermediate level. Their majors included agriculture, sciences, engineering, education and economics. The ensuing discussion aims to further problematize the question of EBL and how these could/should be utilized to understand CQ learning.

Table 1
Key instructional modalities to assess the learning impact of EBL

Instructional modality	Learning assessment elements	Learning statements for research purposes
Cultural learning workshop 1 (Roux & Suzuki, 2017)	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.
Group 1 (2017) (N = 47)	2. Five EBL-based instructional elements: Activity & group-based discussion	<i>EBL-based workshop elements</i> 1. Cultural symbols drawing 2. 'Group areas act' 3. Learning gap / Interactive quizzes 4. Lecture 5. Multi-cultural groups
Cultural learning workshop 2	1. Learning statements	Learning statements 1-4 as above. 5. I enjoy interacting with people from different cultures. <i>* Added for workshop 2</i>
Group 2 (2018) (N = 40)	2. Five EBL-based instructional elements: Activity & group-based discussion	<i>EBL-based workshop elements</i> 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)	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.

(N = 33)		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.
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Results

Results from an intercultural learning workshop 1 (group 1)

As highlighted in table 2, the marked areas of *somewhat agree* and *agree* shows increases in 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 an online too/smart device). Although these increases may not seem significant, the impact of a rather short workshop on the learning statements is nevertheless clearly noticeable. Specifically, it shows that, in terms of the learning experience, participants do consider their learning to be positively impacted if there are other participants as well as different types of instruction and learning media available in the 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 an intercultural 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 (*I learn best by myself, quietly reading or studying*) for this group, possibly indicating that these particular 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, the observational record shows that workshop 2 was less interactive and occurred in a lecture hall, whereas workshop 1 was more interactive, and 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	<i>Disagree</i>		<i>Somewhat disagree</i>		<i>Neutral</i>		<i>Somewhat agree</i>		<i>Agree</i>	
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 these 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, a 15-week blended course to cultivate CQ was designed as an outflow of the original framework and the multicultural workshop. To consolidate these courses, a learning reflection checklist was compiled with an eye to the self-assessment of CQ learning gains and to gauge 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 to appraise the impact of learning. As is observable from both checklists (figures 3 & 4 below), most 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 course's 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, extending support for the blended approach.

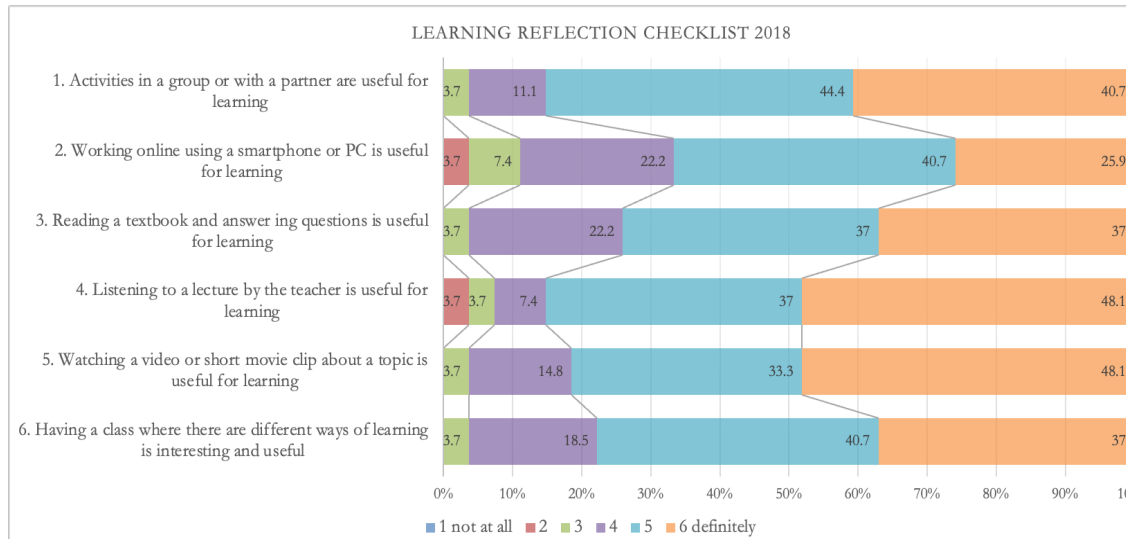


Figure 3. Group 3: Results from a learning reflection checklist (2018)

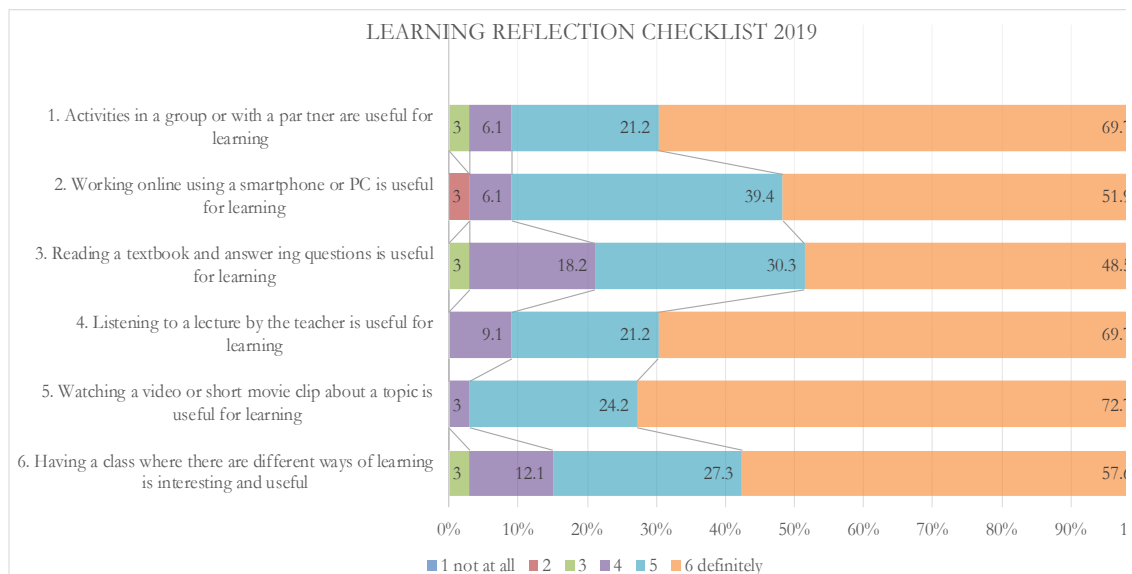


Figure 4. Group 4: Results from a learning reflection checklist (2019)

Findings & Discussion

The current paper represents a further attempt at appraising EBL's contribution to CQ learning design by exploring two interrelated questions: (a) the relevance and role of EBL in CQ learning and development; and (b) how this role can be effectively assessed to demonstrate its effectiveness in blended environments. These questions were explored by means of contrasting and analysing the participant feedback gained from two intercultural learning workshops. Further insights were provided through an analysis of a learning reflection checklist conducted on two occasions pursuant to the completion of a 15-week undergraduate course focused on CQ learning.

Results from the two workshops highlighted that participants favoured instructional variety and group-based learning activities. This finding is supported by similar results from the learning reflection checklists. Participants further 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 from one course to the next. Previous research iterations in this project (Roux & Suzuki, 2017; Roux et al., 2018, 2019a, 2019b, 2020) linked CQ learning to similar analyses and found evidence that CQ growth was achieved through application of this instructional approach. While the current findings appear to support, in broad, the use of various instructional methods in achieving some of the goals of ICC and concomitant developments in CQ, the measures employed do not allow for a direct and clear assessment of EBL's unique or exact contribution to these purported gains.

From these findings it must be deduced that there remains significant scope for further investigation. EBL theory suggests that learning is a holistic, dynamic and ever-evolving process that involves continuous relearning, since the resolution of adaptations and transactions between the individual and their environment ultimately culminates in creating knowledge (Kolb, 1984). These theoretical ideas suggest that learning is never complete, and importantly, may therefore never be entirely captured/quantified as a measurable outcome. CQ growth requires engagement with certain socio-cultural and environmental features, which combine with small shifts in the unique underlying characteristics of an individual. To obtain an understanding of CQ learning, it therefore seems useful to employ a variety of qualitative and/or quantitative measures over a certain period to gain insights into the incremental growth that the person undergoes. Given the availability of many new technologies, tracing the CQ learning path may be increasingly possible, affording more individualized profiles of the learning experience. What remains necessary and important is to determine precisely how EBL can continue to contribute to learning through the “creative destruction” (Kolb & Kolb, 2017) of educational technology. If blended environments (or a fully online experience, courtesy of COVID-19) are the new normal in education, a reconsideration of EBL as a paradigmatic principle in education will be required, since the learner experience is now entirely reframed by educational technology.

In view of these insights, it seems appropriate to revisit Kolb & Kolb's model (figure 5) (2017, p. 11), which allows for a more nuanced understanding of the dynamic learning process. It is outside the scope of the present investigation to consider a detailed application of this model, but it should be noted that both central dimensions – *grasping experience* and *transforming experience* – will be mediated (if not wholly determined) by technologies that aim to support the learning experience. It goes without saying that transforming experience into learning, which is at the core of EBL, remains in the mind of the learner; however, if the presentation of the educational experience itself is determined or largely mediated by technology (which affects the format, quality, duration and efficiency, etc. of learning) – the dimension of *grasping experience* will be profoundly and longitudinally impacted. Consequently, the learning outcomes and subsequent *active experimentation* will also be affected over time and as learning expands.

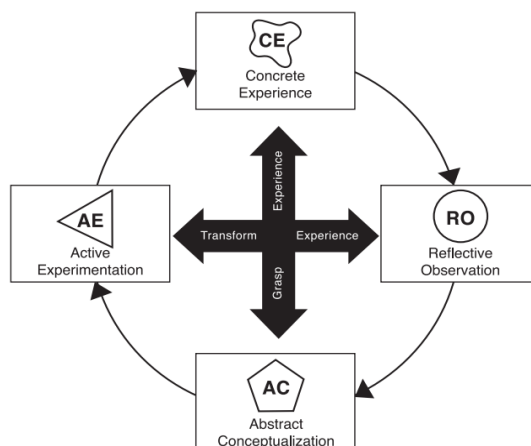


Figure 5. The Experiential Learning Cycle. Reproduced from A.Y. Kolb & D.A. Kolb, 2017. Experiential learning theory as a guide for experiential educators in higher education. *ELTHE: A Journal for Engaged Educators*, 1(1), p. 11. Copyright NSUWorks [2017].

Since it is commonly accepted that the tools humans use impact and change cognition and shape subsequent cognitive development, it seems vital that the application of educational technologies expand their focus on the core dimensions of the EBL model, namely the *grasping* and *transforming* of *experience*. If blended and online forms of learning constitute the ‘new normal’ in global education, the virtual educational experience will profoundly and irrevocably change the human condition. In fact, artificial education in education (AIED) is already widespread in various, if somewhat underdeveloped or fragmented forms, and exerting a profound influence on the presentation, creation and representation of knowledge (Holmes, Bialik & Fadel, 2019). These contentions need to be re-evaluated with an eye to past and present learning models and in view of developing CQ at the tertiary level.

Conclusion

As part of larger project that seeks to expand pedagogical support for developing cultural intelligence (CQ) in Japanese higher education, the current study aimed to explore the role of EBL in a blended environment. Specifically, the role and contributions of EBL were targeted through an analysis of participants’ self-assessed CQ growth and their estimations of the instructional methods employed to support these learning gains. Data from two multicultural workshops and two semester-long intercultural blended courses were analysed to problematize the relevance of the EBL method and its contribution to CQ development. Findings indicate that although EBL maintained a fundamentally active role in the personal growth of CQ, the manner in which it contributed to the blended learning experience raised several further issues. Essentially, these issues emanate from the profound impact exerted by the variety of learning tools that characterize the blended experience. The abundance of educational enhancements offered by adding a virtual learning dimension necessitates a reconsideration of EBL’s core contentions, which involves the grasping and transforming of experience into learning. The impact on these core dimensions, which is reframed and mediated by the blended experience have far-reaching implications for the creation and representation of knowledge and human cognition.

These findings therefore necessitate a reassessment and evaluation of the EBL model and the subsequent design of instruction in this area. Results further attest to the observation that the link between personal growth and focused learning – which is at the centre of EBL – is uniquely complex, and thus the ongoing challenge to

develop adequate measures for its assessment, remains. In the EBL approach, individual learning gains are mostly measured through self-assessment, and it seems that this method would be better served by a longitudinal and more individualized, qualitative exploration utilizing learning analytics. The implication for future CQ research work is to therefore attempt a narrower focus on tracing the individual understandings of CQ learning and development over time. As the ripples of the COVID-19 continue to effect education globally, and advances in learning technologies respond with various ways of “creative destruction” (Kolb & Kolb, 2017, p. 40), the disruption and re-imagination of our traditional learning approaches will certainly require renewed research-driven solutions.

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