博士論文

DESIGNING INSTRUCTION FOR DEVELOPING CULTURAL INTELLIGENCE (CQ) IN JAPANESE HIGHER EDUCATION

日本の高等教育における文化的知能（CQ）開発のための教育デザイン

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Abstract

The increasing reach and utilization of online learning continue to influence organizations worldwide. The globalization of education is thus connecting different cultures and learning traditions, leading to an increasing diversity in online learning groups. In many ways, technology is succeeding as a supportive partner in education. Simultaneously however there is also an increasing disparity observable in the profusion of technologies on offer and a shortage or absence of appropriate pedagogies to support it (Alonso, López, Manrique & Viñes, 2005). These are radical challenges for education and centralizes the role of instructional design (ID&T), given its concern with creating meaningful learning by incorporating technological advances in established learning traditions. It also seems vital for education to consider not only the cultural sensitivity and appropriateness of learning pedagogies, but also the intercultural competence (ICC) of online learners (Parrish & Linder-Vanberschot, 2010; Rogers, Graham & Mayes, 2007; Clem, 2004).

This project brings these adjacent issues together through a focus on structured learning – as an application of ID&T – to design and develop the necessary elements for cultivating ICC. The study presents the iterative phases of a 3-year project with undergraduates at a Japanese university that aimed to design and apply a focused pedagogy for the growth of cultural intelligence (CQ). The project employed an exploratory action-research approach that featured a multi-phase, mixed-methods design, anchored in the successive approximation model (SAM), and proceeded through five phases with eight underlying, research-based iterative cycles.

Findings suggest that overall, the study succeeded in understanding "how" CQ can be developed through the application of ID&T to the field of ICC. Further indications were that the investigative framework was successful in the iterative design and implementation of a blended university course that utilized smart devices and online technologies, supporting the goal of developing a more integrated pedagogy for ICC. Limitations of the study pertain to a limited cultural diversity on-campus and small sample sizes, with other impediments related to the profusion of technological aids and their associated problems. The study highlights the key role of ID&T in developing learning paradigms for the diversity of the 21st century and suggests future research in the areas of learning management systems, adaptive learning and ICC pedagogies that include online simulations and blended learning.

論文要旨

オンライン学習の拡大と利用の増加は、世界中の組織に影響を与え続けている。教育のグローバル化は異なる文化と学習の伝統を結びつけ、オンライン学習グループの多様性は増している。多くの点で、テクノロジーは教育の支援パートナーとして成功している。しかし同時に、提供されているテクノロジーは豊富になる一方で、それをサポートするための適切な教育法の不足に見られる格差が増大しつつある（Alonso, López, Manrique & Viñes, 2005）。これらは教育の根本的な課題であり、確立された学習の伝統にテクノロジーの進歩を組み込むことで有意義な学習を作成することに関心がある教育設計（ID&T）の役割が注目されている。また、教育には文化教育の学習の文化的感受性と適切性だけでなく、オンライン学習者の異文化間コンピテンシー（ICC）も考慮することが重要とされている（Parrish & Linder-Vanberschot, 2010; Rogers, Graham & Mayes, 2007; Clem, 2004 ）。

このプロジェクトでは、ICC を育成するために必要な要素を設計および開発するために、ID&T の応用としての構造的学習に焦点を当てて、これらの隣接する問題をまとめた。この研究では、文化的知性（CQ）の成長に焦点を絞った教育法を設計し、適用することを目的とした日本の大学の学部生による 3 年間のプロジェクトの反復フェーズを報告した。プロジェクトは、逐次接近モデル（SAM）に依拠した多段階の混合メソッド設計を特徴とする探索的アクション研究アプローチを採用し、8 つの基礎となる研究ベースの反復サイクルで 5 つのフェーズを進めた。

調査結果は、全体として、ICC の分野に ID&T を適用することにより、CQ を「どのように」開発できるかを理解することに成功したことを示唆している。さらに、調査フレームワークは、スマートデバイスとオンラインテクノロジーを活用したブレンド型大学コースの反復設計と実装に成功し、ICC のより統合された教育法を開発するという目的をサポートしたことが示された。研究の制約は、キャンパス内の限られた文化的多様性と小さなサンプル数に起因しており、他にも拡大しつつあるテクノロジーによる支援法とその問題にも関連している。この研究は、21 世紀の多様性に対する学習パラダイムの開発における ID&T の重要な役割を強調し、学習管理システムや適応的学習、あるいはオンラインシミュレーションやゲームを含む ICC の教育法の分野における将来の研究を示唆した.

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CHAPTER ONE

Introduction

The increasing reach and utilization of online learning continue to influence organizations globally. Computers and the adjacent developments in 'smart' technologies are increasingly providing new means for personalizing learning, assisting in the design of learning through an exacting assessment of learner needs and knowledge, as well as in the measurement and capture the learning process and its outcomes. In many ways, technology is succeeding as a formidable partner in education. Increasingly however, there appears to be an ever-widening divide between the profusion of technological features on offer and a shortage or non-existence of teaching principles, pedagogies and/or methodologies to accompany or support it (Alonso, López, Manrique & Viñes, 2005). This trend raises a radical challenge for educational establishments and further forefronts the central role of instructional design (ID&T), given its concern with how to meaningfully incorporate technological advances in established educational paradigms and learning traditions.

A salient result of the internationalization of education through online learning has been the gathering of people from very different cultures and learning traditions in online learning groups, increasing the diversity of the learner audience. In view of these trends, it therefore seems vital that educationists should consider not only the cultural sensitivity and appropriateness of educational methods and pedagogies, but also the intercultural competence (ICC) of course participants that engage in online environments (Parrish & Linder-Vanberschot, 2010; Rogers, Graham & Mayes, 2007; Clem, 2004). This is one of the key departure points for the current investigation, since cross-cultural competence, knowledge and skills are today recognized as a vital ingredient for the skillset of a global citizen (Fischer, 2011, Livermore, 2011). Universities have long been expected to prepare graduates for future careers but the notion that the diversity available in learning environments (physical or virtual) can be exploited to support the skill development of students seems to have been slow in gaining traction. This is perhaps as a result of the fast pace of expansion in the migrations of students internationally, but also noted to be partially due to the lack of an integrated underlying pedagogical approach that could support educators involved in this field (Leung, Ang & Tan, 2014; Fischer, 2011).

Institutions of higher learning (HE) in Japan have in recent years made various efforts to internationalize (Mori & Takeuchi, 2016). Embarking on a new educational initiative in 2011, the Japanese government (MEXT, 2019) has set a series of requirements for universities to emphasize an education that would result in more 'internationally minded' graduates. This vision appears to consider the fact that graduates are increasingly likely to work in diverse environments, regardless of whether these will be based in local, foreign or virtual contexts (Livermore, 2011; Fischer, 2011).

These trends and developments suggest that instructional designers need to remain aware of culture's pervasive presence in the learning process, take seriously some of the reported neglect in consideration of the cultural influences in e-learning (Henderson, 2007; Parrish & Linder-Vanberschot, 2010) and take care to actively incorporate a cultural awareness as part of their approach to curricular design and instruction (Clem, 2004; Thomas, Mitchell & Joseph, 2002). With these issues as background, the current investigation aims to forefront the role of ID&T in the learning design for ICC development. Specifically, it focuses on the design of training and structured learning as necessary components for developing ICC, with specific consideration towards utilizing online technologies to enable the development of cultural intelligence (CQ). The investigation outlines and presents the progressive development of a project with several phases that took place across a 3-year period at a Japanese university. The thesis proceeds across 8 chapters to showcase the incremental development of several iterations of the project, with the concomitant results and findings presented in four peer-reviewed publications.

In broad, the ensuing chapters cover the project as follows: (i) Chapter 1 – an introduction, statement of the problem and research questions; (ii) Chapter 2 – a literature review with relevant theories and models from this multi-disciplinary area, and a proposed theoretical synthesis in the form of a framework of enquiry; (iii) Chapter 3 – the underlying research design and methodological considerations; (iv) Chapter 4 – iteration 0, the first application of the framework in workshop format, represented in the 1st publication; (v) Chapter 5 – iteration 1.0, an expanded version with further application in a blended course format, represented in the 2nd publication; (vi) Chapter 6 – iteration 1.1, further course developments and a consideration of the learning outcomes in two formats, represented by the 3rd and 4th publications respectively, as well as the introduction of a learning checklist as a form of evaluation; (vii) Chapter 7 – a discussion of the findings, considering the

limitations and with implications for future research; and (viii) Chapter 8, concluding the investigation with an eye to the development of learning management systems that seeks to enhance the CQ of participants in online education.

1.1 Statement of the Problem

1. As suggested in the introduction, globalization continues unabated and graduate students, who comprise the future workforce, need to navigate an increasingly multicultural reality with the requisite intercultural skill (Stoner, Perry, Page, Gleason & Tarrant, 2016; Fischer, 2011; Knight, 2004;). In Japan (where this investigation is situated), tourism continues to grow, student populations are becoming more diverse (Mori & Takeuchi, 2016), and local companies increasingly require foreign sojourns from their workforce, or are extending employment to foreign workers to offset the labor shortage in the local workforce. These observed trends point to a growing future diversity in Japan.

2. Further to this is the contention that underlying cultural predispositions impact the way learners perceive, interpret and respond to their educational environment. Culture incorporates ideas about race, ethnicity, nationality, religion, class, gender, values, traditions, language, lifestyles, as well as workplace and academic cultures. Although culture is a salient influence in education, it remains central to the meaning-making process (Freire, 2005), implying that learners and teachers belong to, and participate in more than one culture at any given time in the learning process – whether in traditional classrooms or in online environments (Henderson, 2007). Culture and education are very much intertwined.

3. Accompanying these trends is the fact that online learning is now a global phenomenon (Henderson, 2007). Governments, corporations, educational institutions and companies worldwide increasingly make use of some form of online and/or blended learning to educate, train and develop their members and students (Hanson, 2010; Gunawardena, Wilson & Nolla, 2003). These participant-learners are increasingly spread over several different locations, cultures and time-zones, are participating in online learner-groups, or are pursuing education in a foreign setting (Stoner et al., 2016). It could perhaps be said that virtual worlds are now propably more diverse than 'real' world locations.

4. These preceding statements should demonstrate the continued need for cultural understanding globally, but specifically for higher education, since it often provides the foundation and eventual doorway for young people to launch their careers. There is thus a clear incentive for the field of instructional design and technology (ID&T) to remain cognizant of learners' cultures and how diversity might manifest in the learning process (Kivunja, 2015; Suzuki & Nemoto, 2012; Parrish & Linder-VanBerschot, 2010; Clem, 2004; Thomas, Mitchell & Joseph, 2002). Instructional designers can successfully employ existent theory to understand learner diversity (Thomas et al., 2002), but this area of study suffers from a shortage of research (Clem, 2004; Gunawardena, Wilson & Nolla, 2003) and often relies on frameworks from other disciplines (Rogers, Graham & Mayes, 2007). Research in the field of e-learning has been referred to as "culturally blind" (Henderson, 2007, p. 132).

5. While it appears that cultural understanding is necessary for a globally diverse future, it has long been accepted that with such an understanding comes an array of personal attributes/skills that can be cultivated through experience and education (Deardorff, 2006). The field of intercultural competence (ICC) has been occupied with researching these issues and continues to expand with globalization. Given its multi-disciplinary origins, the ICC concept boasts broad theoretical understanding and depth, but appears to lack some consensus in terms of its provision for a systematic approach to training and development. Although several training programs exist, a basic pedagogy for ICC is underdeveloped and training methods vary widely (Leung et al. 2014; Livermore, 2011; Lovvorn & Chen, 2011; Fischer, 2011). Recent developments in this area have suggested the notion of cultural intelligence (CQ) (Leung et al., 2014), which shows promise as an integrative theory for the field of ICC.

6. With these issues as background, two pertinent observations emanating from the increasing global diversity in education can be made: on the one hand, the need for focused educational interventions to cultivate ICC in future generations, and on the other, a (re)consideration of the learning designs behind the technologies, materials, methods and pedagogies that could cultivate ICC (specifically), but would also infuse – in terms of intercultural sensitivity and adaptibility – educational and instructional approaches (in general).

7. The current investigation therefore aims to apply ID&T in the learning design for ICC development. Specifically, it focuses on the design of training and structured learning as necessary components for developing ICC, with specific consideration towards utilizing online technologies to enable the development of cultural intelligence (CQ).

1.2 Research Questions

With these observations and stated purpose as background, the current project aims to explore this multidisciplinary convergence of issues by posing the following research questions:

1) Broadly speaking, how can the intercultural competence (ICC) – or, cultural intelligence (CQ) – of students at Japanese universities be nurtured, cultivated and developed?
2) More specifically, which theories within the fields of education, instructional design, psychology, cultural studies and human resources will be appropriate to investigate intercultural skill development and the consequent growth of CQ?
3) Given the interdisciplinary nature of the investigation, what type of models and theories could be effectively synthesized to create a framework for a research enquiry?
4) And, to explore the broad question of ICC development, how can this framework be applied to cultivate CQ in ways that would:
   (a) support and guide the enquiry by delivering research data;
   (b) allow for the continuous iteration, adjustment, and development of relevant instructional materials and methods;
   (c) utilize and/or incorporate online learning applications, methods and tools?

The research queries proposed here form the basis for an exploratory study into the broad question of developing CQ through an application of ID&T.

1.3 Contributions of the Research

This investigation seeks to contribute towards:

1. The design of a 21st century pedagogy for training and development in CQ specifically, and ICC in general;
2. The practical application and extension of ID&T in ways that explore and enhance the growth of ICC by focusing on the development of CQ;
3. The personal development and skill extension of undergraduate students at a Japanese university;
4. The potential utility of currently available technologies to the issues as outlined above.

1.4 Definition of Terms

The following list of terms are used extensively in this study and their working definitions are provided here to help elucidate their intended meaning(s). These terms and their uses are considered to be fundamental to the current investigation.

a) Culture

Given its many facets, shifting features and various expressions, "culture" is a dynamic and essentially complex phenomenon that is nearly impossible to define concretely. For the purposes of this study, a very broad understanding of the term culture, based on Liu, Volcic & Gallois (2015) is adopted as signifying:

> …a particular way of life of a group of people, comprising the sum of knowledge, experience, beliefs, values, traditions, religion, concepts of time, roles, spatial relations, worldviews, material objects, and geographic territory (p. 73).

While recognizing that there can be many reasons why cultures and cultural groups are identified, one purpose of such an identification is to indicate that groups of people differ in a various ways. Identification can help to recognize differences and help us to value diversity, but may also be the source of misunderstanding and conflict. Nevertheless, this study takes the view that cultures, and cultural identities, are always a process and exist in flux. As member-participants of culture, we can achieve greater awareness and knowledge through both experiential and organized forms of learning from, and about the enormous diversity of cultural expressions in the world today.

b) Intercultural Competence (ICC) & Cultural Intelligence (CQ)

There is general consensus that ICC is linked to an individual's ability to function effectively across cultures (Whaley & Davis 2007). Johnson, Lenartowicz & Apud (2006), defines ICC as "… an individual's effectiveness in drawing upon a set of

knowledge, skills, and personal attributes in order to work successfully with people from different national cultural backgrounds at home or abroad" (p. 530). For the current purpose, a definition of ICC suggested through the cultural intelligence (CQ) model is adopted. In this conception, CQ is seen as a set of intercultural capabilities that draws on the multi-factor model of intelligence, and is described as "… an individual's ability to effectively manage, and function in culturally diverse settings" (Ang, Van Dyne, Koh, Ng, Templer, Tay & Chandrasekar, 2007, p. 335).

CQ is seen as a set of flexible capabilities that draws from Sternberg & Detterman's (1986) multifactor view of intelligence to isolate four complex factors: (1) metacognitive CQ – an awareness, or the mental capability to acquire and understand cultural knowledge; (2) cognitive CQ – knowledge and knowledge structures about cultures and cultural differences, or a person's thoughts; (3) motivational CQ – an interest, or the capability to direct and sustain energy toward functioning in intercultural situations; and (4) behavioral CQ – taking action, or the ability to behave flexibly in intercultural interactions (Leung et al., 2014). CQ could thus be seen as an emergent capability that is narrowly tied to the inclination and ability of a person to appreciate, formulate and behave in ways that are quick, smooth and sensitively accurate when confronted with a complex new situation that involves cultural diversity. CQ could thus be seen as a comprehensive model for describing the notion of ICC.

c) Global Mindset

There appears to be little agreement on how the notion of a global mindset should be defined (Bouquet, Morrison & Birkinshaw, 2003). Using a managerial perspective and suggesting the use of a two-pillared model that consists of knowledge and skill, Kedia and Mukherji (1999) argue that, in terms of knowledge, a global mindset means maintaining an appreciation for the existence of differences, while skills imply the ability to put knowledge into action. Combining relevant knowledge with appropriate skill and experience, managers develop a global mindset over time and learn to operate with, as well as manage and lead in groups or situations characterized by diversity. This global mindset, according to Kedia and Mukherji (1999, p. 239-240), connects and combines across three specific knowledge bases: (1) mastery over technology, information systems and telecommunications, (2) an understanding of the socio-political factors of the different countries in which the firm operates, and (3) an appreciation of the role of culture and cross-cultural issues that impact managerial decisions.

Importantly, Kedia and Mukherji (1999, p. 240) tie the development of a global mindset to practical and contextual situations that include: (1) foreign travel, where cultural and sociopolitical and economic issues can be experienced, (2) opportunities to work in teams comprised of members with diverse backgrounds and perspectives, (3) appropriate training that is specific, effective and provided in a structured learning environment, and (4) work transfer to foreign locations to live, work and learn from the experience. Their perspective strongly advocates an experiential, or learning-by-doing approach to the development of a global mindset. It further emphasizes the importance of understanding and experiencing socio-cultural issues through first-hand experience, which acts as the moderator for the development of intercultural skill development, or expressed in another way, the growth of cultural intelligence (CQ).

A key observation then, is that the notions of global mindset and cultural intelligence (CQ) are conceptually closely connected. For the current purpose, a useful way of tying these concepts together is to propose that a person with higher CQ are more likely to develop a global mindset, as is suggested by Lovvorn & Chen (2011). Exposure to meaningful experiences foreign to our usual situations help to instill new ways of responding and learning to the diverse stimuli that unknown environments, languages, traditions and values provide. With time and repetition, the adjustment required in response to the continued exposure to such changes foster the growth of CQ and gradually assist in the formation of a global mindset.

d) Instructional Design & Technology (ID&T)

Helping people to learn better is the central pursuit of instructional design (ID) (Reigeluth & Chellman, 2009). Many attempts have been made to reach a conclusive definition for the field of ID&T, yet it continues to shift. Recent perspectives in this field, which have continued to recognize and incorporate advances in neighboring disciplines, particularly emphasize the facilitation of learning and the improvement of performance, as well as how these aspects are related to technological innovation and development (Reiser, 2012). Reflecting on these shifts in emphasis, Reiser & Dempsey (2012) propose the following comprehensive definition:

> The field of instructional design and technology encompasses the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and non-instructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace (p. 5).

Essentially defined, instruction is "anything that is done purposefully to facilitate learning" (Reigeluth & Chellman, 2009, p. 6). The facilitation of learning comes to the fore as one of the expanding recent trends and is also recognized as a central concern in the field of educational technology, where it is tied to technological advances. In this regard, the Association for Educational Communications and Technology (AECT)[1] (as quoted in Reiser & Dempsey, 2012, p. 4) defines educational technology as: "… the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources".

Unpacking this definition, Reiser (2012, p. 4-5) highlights the intention to facilitate learning, connecting the work of ID professionals to the improvement of performance. The AECT's definition implies that it is not merely sufficient for learners to acquire inert knowledge, but that they should be helped to apply their newly acquired skills and knowledge. Furthermore, there is an emphasis on the creative, utilitarian and managed elements in the generation of instructional interventions and learning environments. The creative elements referred to include analysis, design, development, implementation and evaluation. The utilitarian functions include selection, diffusion and institutionalization of instructional methods and materials, while the management aspect refers to project, delivery system, personnel, and information management. In this view, the role of an instructional designer thus covers a broad range of skills, capacities and functions that is centered around the facilitation of learning, with the assistance of various means, in a variety of situations and contexts, and can include individuals and groups.

e) Experiential learning

Formulating a comprehensive but essential definition of EBL for educational purposes remains a complex task. Beard & Wilson (2010), in a review of several definitions from various theorists, contend that adult experiential learning remains complex, vague and ambiguous, and for research purposes, is still inadequately defined and conceptually suspect due to the varied number of interpretations. The

[1] The Association for Educational Communications and Technology (AECT) is a professional association of instructional designers, educators and professionals who provide leadership and advise policy makers in order to sustain a continuous effort to enrich teaching and learning. https://www.aect.org/

implication is that EBL still lacks a single and clear definition. They propose a definition with broad applicability (Beard & Wilson, 2010, p. 26): "Experiential learning is the sense-making process of active engagement between the inner world of the person and the outer world of the environment." More specifically, their comprehensive interpretation of EBL is adopted here to help explicate and operationalize its application (Beard, 2010):

> … a sense making process involving significant experiences that, to varying degrees, act as the source of learning. These experiences actively immerse and reflectively engage the inner world of the learner as a whole person (including physical-bodily, intellectually, emotionally and spiritually) with their intricate 'outer world' of the learning environment (including belonging and doing - in places, spaces, within social, cultural, political context etc.) to create memorable, rich and effective experiences for and of learning (p. 26).

In its simplest form, EBL means learning by doing: students are first immersed in an experience and then encouraged to reflect in order to develop new skills, attitudes or ways of thinking (Lewis & Williams, 1994). In fact, as Boud, Cohen & Walker (1993) state, it is virtually impossible to separate learning from experience:

> We found it to be meaningless to talk about learning in isolation from experience. Experience cannot be bypassed; it is the central consideration of all learning. Learning builds on and flows from experience: no matter what external prompts to learning there might be - teachers, materials, interesting opportunities - learning can only occur if the experience of the learner is engaged, at least at some level. These external influences can act only by transforming the experience of the learner (p. 8).

Learning is thus irrevocably tied to experience, and it is commonly accepted that humans are born biologically ready to accommodate, organize and integrate new experiences in such a way that it furthers their own development. In fact, Fenwick (2000, p. 284) suggests that experiential learning inevitably implies a process of human cognition. Although the exact relation between experience and learning remains somewhat elusive, Beard & Wilson (2013, p. 24) conclude that "... experience probably provides the most coherent theory of learning".

f) Online Learning, e-learning & Blended Learning (BL)

The information revolution has entirely repositioned the roles of participants in the learning process. At the center of this challenge is the management and flow of knowledge and information, which has traditionally been within the domain and control of teachers, experts and educational institutions. Although technologically-

supported learning has a very long history, the advent of the internet revolutionized distance learning and further prompted the internationalization of education. Online education today encompasses a tremendous number of topics, subject areas, disciplines and degree programs. In its broadest terms, online education therefore simply means acquiring knowledge through the use of instruction provided via the internet. This type of education is acknowledged to be pedagogical rather than self-selected, implying a fundamentally educational intent in its design and practice (Friedman, 2019).

While online learning is education that takes place over the Internet, it is most often referred to as "e-learning". Sangra, Vlachopoulos & Cabrera (2012) concur that e-learning is a continuously evolving system of learning and has thus been difficult to define in exact terms. Their research proposes the general conclusion that e-learning is part of a new dynamic characterized by the educational systems at the start of the 21st century. These systems are a result of a complex merge between different disciplines, such as computer science, communication technology, and pedagogy, and therefore contains characteristics of more than one discipline. As a result, the concept of e-learning will likely continue to evolve to stay abreast with developments in the field of learning (and across disciplines) in general. Regardless of these developments it is also true that current understandings and practices of e-learning in many parts of the world still reflects traditional educational models where the bulk of the instruction students receive takes place inside the classroom, while assignments are completed or enhanced with the use of technological tools and the internet.

The recognition that technology is irrevocably changing the ways we learn has lead researchers to use the term blended learning (BL) to describe the various technologically-enhanced classroom adjustments and educational applications employed during the process of learning. Broadly speaking then, BL "…combines online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiate instruction from student to student across a diverse group of learners" (Watson, 2008, p. 3). Rather than formulating an exact definition of BL, Dziuban,

Hartman and Moskal (2004), in a research brief for EDUCAUSE[2], instead suggest that it should be viewed as:

> … a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment… and … should be approached… as a fundamental redesign of the instructional model (p. 3).

BL therefore represents a shift in instructional strategy and this type of learning offers the possibility to significantly change how teachers and administrators view online learning in the F2F setting. Using computers and online learning in education requires a much larger shift in thinking than simply adding a few computers to classrooms. For the instructor, Watson (2008) observes that a true BL implies a flexibility that should go beyond the classroom walls, where students communicate and collaborate with others outside their school and therefore "… requires that teachers approach their role differently, as guides and mentors instead of purveyors of information" (p.16).

g) Summative & Formative evaluation

Evaluation or assessment is a critical component in the systematic design of instruction. Essentially, it involves the process of gathering data that would give information about the teaching and learning process (Hanna & Dettmer, 2004). Such data can provide a picture of the range of learning activities conducted, and depending on the manner in which it is collected, can provide different types of insights into learning behaviors, processes and outcomes. Analysis of these results provide ways to improve on the recognized weaknesses, gaps, or areas for improvement. The present study employed two basic forms of collecting data about learning - summative and formative evaluation - as means for assessing teaching interventions and learning outcomes.

According to the Eberly Center[3] (2019), formative assessment aims to monitor student learning to provide ongoing feedback that can be used by instructors to

[2] EDUCAUSE is a nonprofit association that helps higher education elevate the impact of IT. https://www.educause.edu/

[3] The Eberly Center at Carnegie Mellon University aims to … "distill the research on learning for faculty and graduate students and collaborate with them to design and implement meaningful educational experiences." https://www.cmu.edu/teaching/index.html

improve their teaching and by students to improve their learning. Formative assessments help students identify their strengths and weaknesses and target areas that need work; while it assists faculty in recognizing where students are struggling and address problems immediately. Formative assessments are generally low stakes, which means that they have low or no point value. Examples of formative assessments can include asking students to submit a research proposal for early feedback, outline vague understandings of concepts, and expressing opinions (verbal/written) about topics they are studying.

Summative assessment, in contrast, aims to evaluate student learning at the end of instruction by comparing it against a standard or benchmark and is typically high stakes with an assigned point value. Examples here include midterm exams, final projects, essays, and so forth. Information from summative assessments can be used formatively when students or faculty use it to guide or improve their efforts and activities in subsequent courses (Eberley Center, 2019). Summative assessment therefore tends to be more product-oriented and assesses the final product, whereas formative assessment focuses on the process toward completing the product. Hanna & Dettmer (2004) suggest that rather than focusing on the differences between formative/summative assessments, a careful instructional design takes note of learning goals and content and adjusts assessment and evaluation accordingly.

h) Action research

Action research refers to the investigation of 'messy' problems, but very much implies a specified, strategic way of conducting research. It aims to bring together action and reflection, theory and practice, in participation with others, in the pursuit of delivering practical solutions to problematic situations. In consideration of the current project and its explorative, developmental process, action research as an overall stance and strategy therefore holds particular promise for taking care of the uniqueness of local circumstances and the position of the researcher-participant. Research design literature in the social sciences (Somekh & Lewin, 2014) suggest that action research is suitable in these type of research enquiries. Its basic approach is summarized well in the following quote (Noffke & Somekh, 2014, p. 94):

> Action research directly addresses the problem of the division between theory and practice, and assumes that the two are intertwined, with neither at a more valued position. Rather than research being a linear process of knowledge production that is later applied to practice settings, action research integrates the development of practice with the construction of research knowledge, including theory, in a cyclical

process. Practice generates knowledge, including theory, and theory can be tested in practice, not just applied.

Noffke & Somekh (2014) further explain that instead of research being on a social setting, and the people within it, it is research from the inside of that setting. Research can be carried out either by the researcher working in collaboration with the participants, or by the participants themselves. Placing the researcher central in the study of phenomena thus implies the important function of acting as participant in the generation of (new) knowledge.

1.5 Overview of the Investigation

The current project took place over a period of approximately three years and can be divided into five phases with a series of eight steps that each represented cycles or iterations of educational/research-driven interventions. This is graphically depicted in a broad but simple outline (Figure 1) below, with the relevant steps indicated and very brief descriptions of each phase.

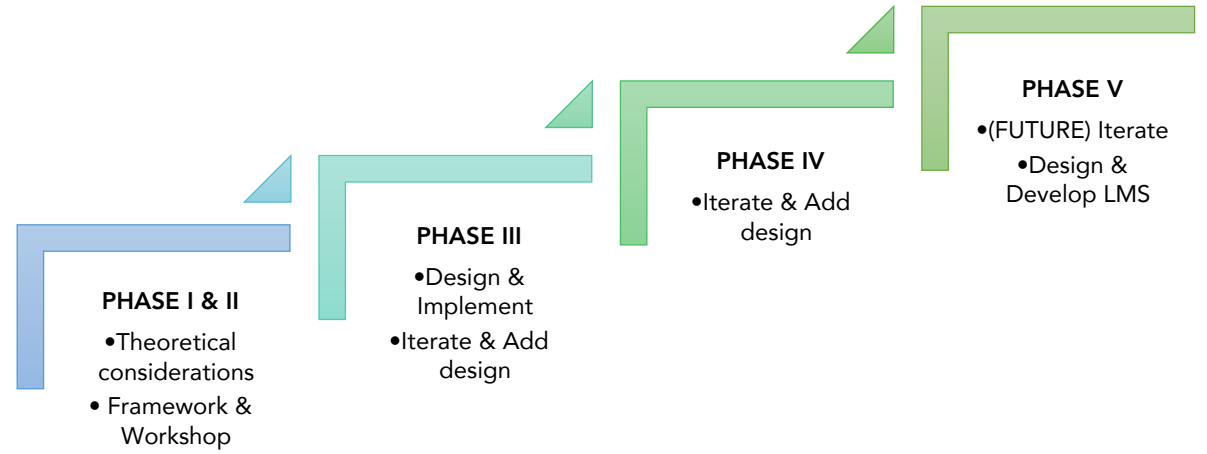


Figure 1. Graphic outline of the investigation

To assist the reader in gaining an overall view of the investigative process, Figure 2 on the next page provides a more detailed graphic depiction. This depiction illustrates how this investigation is anchored in the Successive Approximation Model (SAM), an ID model which is discussed in more detail in Chapter 2 (section 2.2). It is presented here for reference purposes, and to provide a birds-eye view of the current project at the outset. As illustrated, Figure 2 shows the five investigative

phases (Phase I-V) of the investigation, with the eight research steps (Steps 1-8) briefly described. Utilizing the SAM, **Phases I&II** represents the **Preparation Phase, Phase III** the **Iterative Design Phase**, and **Phases V and VI** the **Iterative Design Phase**. These steps are later described in Chapters 4, 5 and 6.

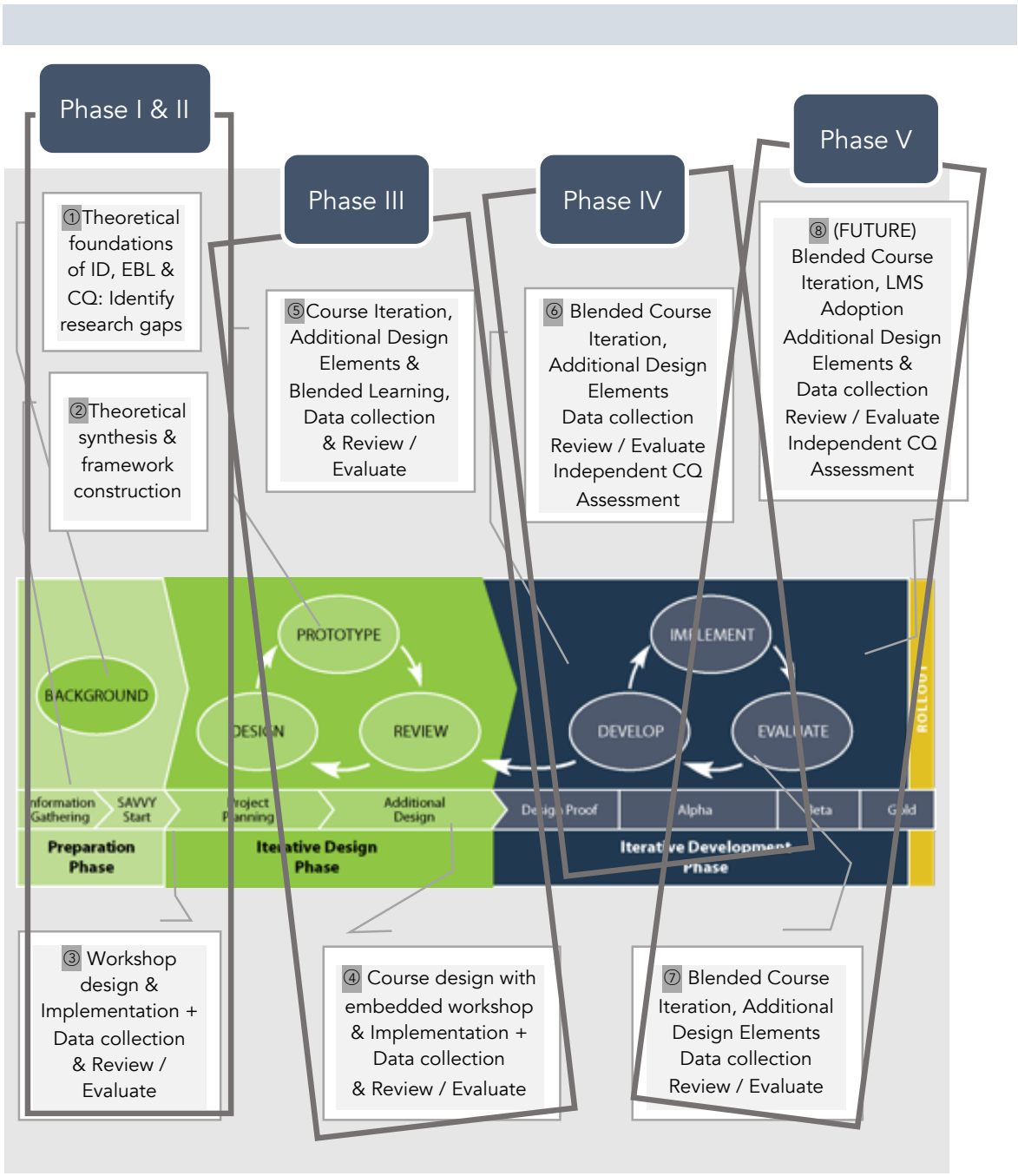


Figure 2. A multi-phase view of the investigative process utilizing the SAM

To summarize and accompany this multi-phase overview of the investigative process, Table 1 further displays the phases and their corresponding steps with brief descriptions. For introductory purposes here, the ensuing discussion introduces and outlines these phases in brief. The detailed rationale, analysis and discussion of these phases in the investigative process are presented in Chapters 4, 5 and 6. Note that the materials and publications briefly referred to in this section are contained in the Appendices (1-3), while specific references to these are detailed in Chapters 4, 5 and 6.

Table 1. Summary of research phases and steps in the investigation

Phases	Steps	Description
Phase I & II	1 - 3	1 - Theoretical foundations of ID, EBL, BL & CQ: Identify research gaps. 2 - Theoretical synthesis & framework construction 3 - Workshop design & implementation – Collect data & review / evaluate
Phase III	4 - 5	4 - Course design with embedded workshop & Implementation + Data collection & review / evaluate 5 - Course Iteration, additional design elements & BL, data collection & review / evaluate
Phase IV	6	6 - BL course iteration; additional design elements; data collection. Review & evaluate, obtain independent CQ assessment.
Phase V	7 - 8	7 - BL course iteration, additional design elements; data collection. Review / Evaluate 8 - (FUTURE) Blended course Iteration, LMS adoption; Additional design elements & data collection; Review / Evaluate; Independent CQ assessment.

As indicated in Figure 1, **Phase I** (Step 1 & 2) was concerned with considering the theoretical foundations for a framework that would support a workshop for intercultural skill development of a multi-cultural group of undergraduate students. The design of this framework incorporated 3 main theoretical elements: (1) instructional design (ID) theory, (2) experiential learning (EBL) theory and (3) cultural intelligence (CQ) theory, while also making provisions for a structured method of enquiry and the collection of data for research purposes. **Phase II** (Step 3) consisted of the workshop implementation, which included initial content development, data collection and resulted in an audience analysis. Findings from this phase was presented at the ICoME Kyoto conference in 2016 and published in the proceedings.

Building on this, a peer-reviewed article was published in the International Journal of Educational Media and Technology (IJEMT, 2017).

Phase III (Steps 4 – 5) saw the development and expansion of the original workshop into a 15-week, semester-long course, utilizing the original framework but expanding it through the use of a blended-learning (BL) approach, while embedding a refined version of the original workshop as one of the course elements. From these results, preliminary findings were presented at the ICoME Honolulu conference in 2017 and published in the proceedings. Building on this, a peer-reviewed article was published in the International Journal of Educational Media and Technology (IJEMT, 2018).

Phase IV consisted of an iteration of Phase III, but included additional design elements with some refinements to improve the course contents and methods of implementation. For this phase, an independent measure of participants' CQ development (as a pre/post assessment) were obtained through the Cultural Intelligence Center[4] based in Michigan, U.S. Preliminary results and findings from this iteration were presented at the ICoME 2018 conference in Cheongju, Korea and at the JSISE 2018 conference in Sapporo, Japan. Building on these developments, findings were published in two peer-reviewed articles, the first (IJEMT, 2019) focusing on the design elements and quantitative aspects of CQ development outcomes and the second (JISE, 2019), on the qualitative aspects of course participants' self-perceived CQ learning.

Phase V consisted of relatively minor additional design developments, mostly concerned with a learning checklist to further help evaluate the course. The purpose behind this was mostly evaluative in terms of course content, to confirm learning achievements for participants, gain formative learning impressions, and potentially, to help triangulate data analyzed through other means elsewhere in the course. The learning checklist is discussed in detail as the final section of Chapter 6. Developments beyond Phase V currently involve conducting longitudinal follow up with previous participants (using the E-CQS), while investigating suitable online platforms to host future versions of the course. To extend this brief introduction, the following chapter introduces the relevant research literature that informed this study.

[4] From their website: "The Cultural Intelligence Center is a growing, innovative training and consulting company that is changing the way individuals and organizations are approaching diversity and global engagement". The Cultural Intelligence Center https://culturalq.com/

CHAPTER TWO

A Review of the Literature

Introduction

The statement of the problem outlined in Chapter 1 sketched a broad picture of the multiple issues involved in the globalization of education brought about by technological advances. This outline identified some problematic issues: on the one hand, the absence of a comprehensive theoretical model for the development of intercultural competence (ICC) that would help, from an educational point of view, with the cultivation of cultural intelligence (CQ) and, on the other hand, the need for the field of ID&T to accommodate the explosion of diversity in online learner groups. Given this background, a central exploratory question was formulated to investigate whether/how theories regarding human learning, central to ID&T, could be utilized to develop ICC and facilitate the growth of CQ.

In line with the stated research questions, and as preface to this investigation, the current chapter takes a theoretical approach, as represented in **Phases I&II** (Steps 1 – 3, outlined in Table 1). This chapter therefore first considers the notion of ICC development or, as it is framed here, the cultivation and growth of cultural intelligence (CQ). Following this, the discussion then considers how the field of ID&T, and the adjacent theories of Experience-based Learning (EBL) and Blended Learning (BL) might assist in the facilitation of ICC development and the growth of CQ. The final section of this chapter then weaves together these preceding theoretical ideas in a synthesis that enabled the construction of a theoretical framework of enquiry. This framework acted as anchor to guide the research investigation and its constituent theoretical ideas are presented here in detail. The first application of this framework – taking form in the design of a multi-cultural workshop – is presented and discussed in Chapter 4, representing iteration 0. of the model. It is important to note that this theoretical synthesis became a model/tool that was utilized for investigative purposes. It is presented at the end of this chapter to link with Chapter 3, which introduces the methodological stance and strategies that followed from an application of this investigative framework.

2.1 Intercultural Competence (ICC)

'Globalization' is now a ubiquitous, perhaps even over-used term. Yet, it continues to expand in all the domains of human activity, giving rise to new challenges. For the fields of education and training, questions regarding the facilitation of learning continues: how do people learn best? and, how do they acquire and develop skills that help them function and thrive in a multicultural, globalized world? (Reiser & Dempsey, 2012). How can our personal and socio-cultural attributes be cultivated and what kind of learning is necessary for this? These, and other broad questions gave rise to the field of intercultural competence (ICC) (Leung et al., 2014).

Culture permeates every facet of human existence and through the process of early socialization, finds conception in our ideas about race, ethnicity, nationality, religion, class, gender, values, traditions, language, lifestyles, and so forth. These ideas eventually permeate the institutions of learning, our work environments and social existence. With the advent of the information age, expressions of culture are now also traceable in online worlds. It is thus well-recognized that culture remains a salient influence in education that stands central to the process of how individuals make sense of their world. Underlying cultural predispositions therefore impact on, and subtly influence the way that learners perceive, interpret and respond to their socio-educational environments. Moreover, the internationalization of socio-economic and political activities of nations and corporations means that intercultural differences often intersect exactly at the points of colliding interests. Despite the joys and excitement of new experiences brought about by globalization, hot spots for intercultural conflict persist, serving as stark reminders of the potential malevolence underlying cultural misunderstandings, tension and intolerance (Leung, et al., 2014).

These thoughts should briefly demonstrate the inherent value and power that cultural understanding implies for our relations with others who 'differ' from us. Since there is considerable variance in the conceptualization of interculturalism, the ensuing discussion aims to elucidate the concept, the various approaches and some of the methods and tools that have been developed in this broad field. Although this investigation utilized the cultural intelligence (CQ) model to focus research efforts, it is helpful to briefly present some of the other popular models to help illustrate the relevant issues in the field of ICC and to provide the rationale for using CQ here.

2.1.1 What is intercultural competence (ICC)?

Cultural training programs have evolved substantially after WWII, when international travel and collaboration accelerated in business and governmental exchange. Scientific interest in the need for these programs gradually grew, giving rise to theories of intercultural growth, identifying underlying cognitive processes, and demonstrating their effectiveness (Lane & Ogan, 2009). The result is that the field of ICC reflects a wide disciplinary diversity reaching across the spheres of anthropology, cognitive psychology, social science, corporate and business interests, military programs and more.

Simply stated, there is general agreement that ICC is linked to an individual's ability to function effectively across cultures (Whaley & Davis 2007). Ways of thinking and behaving appropriately interculturally is highlighted by Hammer, Bennett & Wiseman (2003), while Johnson, Lenartowicz & Apud (2006), defines ICC as "an individual's effectiveness in drawing upon a set of knowledge, skills, and personal attributes in order to work successfully with people from different national cultural backgrounds at home or abroad" (p. 530). For the purpose of this investigation a definition of ICC suggested through the CQ model is adopted. CQ is seen as a set of intercultural capabilities that draws on the multi-factor model of intelligence and describes an individual's ability to effectively manage, and function in culturally diverse settings (Ang, Van Dyne, Koh, Ng, Templer, Tay & Chandrasekar, 2007).

While ICC can be understood in terms of models of cognition and behavior, another way to approach this concept is to attempt an understanding of different character attributes and how these can be assessed. In this view, successfully adapting and adjusting interculturally involves a complex set of knowledge, skills, abilities and other behaviors (KSAOs). Very broadly defined, it includes being able to build and maintain successful, warm and mutually beneficial relationships through which people can be effective in their daily social and working lives (Matsumoto & Hwang, 2013).

Although there is some consensus that ICC consists of both cognitive and behavioral dimensions, a multitude of different models to conceptualize its elements exist: Leung et al. (2014) observes a plethora of more than 30 models and over 300 related constructs, with research generally taking an individual-differences conceptual approach to ICC. Van de Vijver & Leung (2009, p. 406) observe that

components of ICC fall into four categories: attitudes or orientations (e.g. towards other cultures); personality traits (e.g. cultural empathy and emotional intelligence); cognitive knowledge and skills (e.g. negotiation skills); and actual behavior in intercultural encounters. In another conception, Spitzberg & Changnon (2009) suggest that ICC models fall into five types that describes compositional, co-orientational, developmental, adaptational and causal processes.

Compositional models identify different elements of ICC in terms of a composite list of desirable attributes, knowledge and skills. In contrast, causal process models draw cause and effect relationships between different variables of ICC, making them useful for empirical testing. Deardorff's Process Model of Intercultural Competence (2006), for instance, identifies respect, openness and curiosity as attitudes likely conducive for the development of ICC. These personal attributes are linked to self-awareness and cultural knowledge, and combined with skills like listening, observation, analysis and interpretation. Together, these variables promote empathy and adaptation, which in turn facilitates "appropriate and effective outcomes" for ICC (Spitzberg & Changnon, 2009, pp. 32-33).

Co-orientational models focus on achieving shared understandings between interlocutors or speakers. To 'co-orient' is defined as the ability to "adapt to one another's meanings and behaviors" (Spitzberg & Changnon, 2009, p. 20). Byram (1997), for example, suggests that the core dimensions of ICC are attitudes, knowledge and skills, which he breaks down into five *savoirs.* The French word *savoir* in verb form translates as 'to know how to' and in noun form combines knowledge with ability. In English, it can be expressed as 'know-how'. In Byram's conception, *savoirs* define, 'having the know-how' in intercultural contexts to relativize the self and value the other. This means to simultaneously know the self and the other; to interpret and understand; to act with critical cultural awareness and to discover and interact (Byram, 1997, p. 34; pp. 88-89). He views ICC as mediated by the linguistic, sociolinguistic and discourse competence through which meanings and behaviors are negotiated, which is personified in the notion of an intercultural speaker.

Spitzberg & Changnon (2009) criticize compositional and co-orientational models for offering a limited explanation of how ICC can be attained. They argue that such models approach ICC as a once-off snapshot, whereas developmental models forward the understanding that ICC is a process that evolves over time. Among these models, the Developmental Model of Intercultural Sensitivity (Bennett,

1993; Bennett & Bennett, 2004) remains popular. Here, the development of ICC is viewed as a set of clearly identifiable stages along a continuum – from 'denial' of the existence of cultural similarities and differences, through to 'adaptation', which is defined as cognitive frame shifting, cultural empathy, or behavioral code-shifting (Bennett & Bennett, 2004, p. 156). Spitzberg & Changnon (2009) argue that developmental models are distinct from adaptational models, since these focus on the individual's ability to adapt to a different culture. In this conception, the skill of adaptability is taken as evidence of cross-cultural competence.

This great diversity of models illustrates the complexity of the ICC field, but they are less helpful in enabling the user to understand which model is most appropriate in which context. An observation by Van de Vijver & Leung (2009, p. 405) sums it up well: "… we are now at the stage where we are unable to decide which theories are well supported by empirical data, which frameworks should be modified, and which should be abandoned altogether". Further to this is a central limitation: while these models say a lot about the nature of ICC, they suggest very little about the process of **acquiring** ICC. The next section therefore considers the question of how individuals can become interculturally competent, and what the role of education and training might be in this process.

2.1.2 How is ICC achieved? The Role of Education & Training

It is generally accepted the acquiring ICC involves a process of learning. For instructors, the starting point therefore is to understand what guided interventions can facilitate the development of ICC. A number of authors in this field take the perspective the ICC learning should be a learner-centered development (Byram, 2009; Feng, 2009; Kim, 2001). Acquiring ICC, in line with the wider literature on learning theory, arises from both didactic and experiential methods (Fowler and Blohm, 2004), and most often various combinations of these. Much of ICC learning is gained by experiencing intercultural interactions either at home or when travelling abroad, and training literature is replete with studies and materials preparing individuals for crossing cultures.

Institutions of higher education have realized that an important way to experience intercultural learning is through opportunities for study abroad (Cushner & Karim, 2004; Vande Berg & Paige, 2009; Mori & Takeuchi, 2016). Although international student numbers are increasing globally, Vande Berg (2007) observes

that (in the US at least) many students are passive consumers of study abroad programs, and that higher education institutions are making consistent efforts to intervene actively in framing these activities as an intercultural experience for students. The situation in Japan is similar, with many universities actively cultivating study-abroad immersions and short- or longer-term stays for their local students (Mori & Takeuchi, 2016). Given Japan's unique set of historical and geographical factors, efforts at internationalization have had a checkered history. A concerted and broad effort for reforms in higher education was announced in recent years, and since 2014 MEXT Japan have identified a group of universities[5]:

> "… to provide prioritized support to those universities that are leading the internationalization of Japan's education by launching new programs to encourage and deepen interactions and partnerships with the world's top universities, reforming personnel and educational systems, enhancing educational systems to help students develop the ability to act globally and accelerating other globalization initiatives" (MEXT, Japan, 2019).

Many researchers in this field concur that a form of training intervention is necessary in order to develop ICC beyond the initial orientations that attempt to integrate intercultural experiences in traditional classroom practice (Bennett, 1993; Vande Berg & Paige, 2009). At this point, it is useful to consider what is meant by 'training' and distinguish it from 'education' in this field. Fleming (2009) argues that these two concepts have traditionally been viewed as distinct, with training as a subset of activities within the wider goals of education. In his words, education is "a process of acquiring knowledge and understanding" while training is "a process of bringing someone to an agreed standard of proficiency by practice and instruction" (Fleming, 2009, p. 3). Education is thus conceived as broader and less utilitarian while training implies the pursuit of a specific goal or outcome. This distinction also implies that training is often almost exclusively mediated by a teacher, whereas education in its broader sense can be both guided by a teacher and/or by oneself. With advances in technologies, it appears that this distinction is becoming less and less clear.

Whether through structured programs or broad educational strategy, the question underlying the discussion of ICC development is clearly formulated by Vande Berg & Paige (2009, p. 420): "how can individuals be taught, trained and/or mentored regarding the development of intercultural competence?". This question

[5] Top Global University Japan. (2019). https://tgu.mext.go.jp/en/index.html

is very much in alignment with the broad goal of the current project. Stated slightly differently, the question also opens up avenues for exploring the learning/training process in this area: 'how can a teacher, trainer or instructor intervene to help facilitate the ICC of students?'

From an instructor's perspective, viewing ICC as a learner-centered process is particularly important when we view ourselves not only as teachers, but also as intercultural learners. This perspective implies that we are best able to facilitate the intercultural learning of others. As Paige & Goode (2009, p. 346) point out: "international education professionals in the field are role models, intentionally or not, of intercultural competence for their students". This cultural mentoring role is still not well understood however, and ICC development is often left up to students themselves (Paige & Goode, 2009). There thus remains a somewhat underdeveloped conceptualization of ICC learning in reference to the educator/trainer.

2.1.3 Training methods, methods and assessment in ICC

Intercultural training programs typically include a blend of didactic and experiential components, using well-known methods such as lectures, discussions, films, case studies, and role-plays. These programs are usually aimed at developing individuals or groups of participants, typically to induce changes in knowledge, skills, behaviors and/or attitudes. Assessments of these programs also tend to focus on these dimensions (Lane & Ogan, 2009). The general agreement in this field is that ICC growth occurs gradually and, according to some, in stages. The assumption that people adjust gradually is both intuitive and generally supported by psychometric measures of cognitive, affective, and emotional change, and as Bennett (1993, p. 24) notes "… it is the construction of reality as increasingly capable of accommodating cultural difference that constitutes development".

The idea of 'otherness' is central to ICC learning. This notion seems to be dependent on one's own cultural identity and the cultural identity of others. In terms of the training, whether a culture-general or culture-specific learning is required will therefore depend on the kind of interaction with these 'others', and crucially, the context within which the interaction takes place (Yang, Wang & Drewry, 2009). Generally speaking, Storti (2009) identifies four basics for cross-cultural training: 1) defining culture; 2) identifying fundamental values and assumptions of the participant's own culture; 3) identifying the fundamental values and assumptions of

the target culture; and 4) identifying differences and strategies for dealing with difference. This approach is intended to prepare individuals to cross from their own culture to a 'target' culture, which aligns with most literature in this area. Hall et al. (2013) observes that research focusing on cross-cultural training of people in their local context remains very scarce.

In broad terms ICC learning implies the need to equip learners with a theoretical understanding of culture both in general and culture-specific terms. This enables the formation of an abstract conception of the intercultural experience. Importantly, this process contains a self-reflective element that is encapsulated well in Byram's (1997, p. 34) contention that there is in the learner "a willingness to suspend belief in one's own meanings and behaviors, and to analyze them from the viewpoint of the others with whom one is engaging". In similar terms, Jack (2009) proposes a 'critically reflective approach' in which learners "begin to realize that both they and the world around them could be radically different" (p. 111). In terms of conceptualizing the ICC experience, self-reflection thus plays a central role and Tomalin (2009) suggests that training methods should host a variety of experiential, comparative and reflective activities that link cognitive and behavioral aspects.

As noted earlier, a wide range of models and understandings for ICC exist and while many sources list a variety of training activities, Hall et al. (2013) notes that they tend to contain general prescriptions but do not suggest which methods are appropriate for what contexts or situations. Teachers and practitioners would know that a 'one-size-fits-all' approach is generally not advisable (Byram, 1997) and it appears that there remains a lack of consensus about how ICC is to be achieved in terms of a facilitated training. In a higher-education context with the trends as outlined earlier, it seems increasingly important to determine how students can be supported to achieve ICC. There is thus a demonstrable need for developing appropriate pedagogy in this area.

Furthermore, questions regarding the attainment of ICC and its measurement remains, and Lundgren (2009) argues that it can hardly be quantified. Byram (1997, p. 108) maintains that competencies "require a shift of perspective, not a movement along a scale", while Van de Vijver and Leung (2009, p. 413) claim that "most often the assessment instruments that are used in ICC research are based on self-reports, which have well-documented limitations". Furthermore, many of the training tools and instruments have been developed from an overwhelmingly western-centric and

predominantly North-American perspective, which has implications for the relevance of these approaches to students from non-western cultural perspectives (Trompenaars & Woolliams, 2009). These criticisms highlight that there remain several unresolved issues related to the understanding and assessment of ICC.

Despite these unresolved theoretical questions regarding the validity of assessment in this field, there is a recognition that the use of assessment instruments is in itself a form of guided intervention that will evoke a reflexive response in the learner (Hall, Ainsworth & Teeling, 2012) which can be interpreted as a positive outcome (Fischer, 2011; Vande Berg & Page, 2009). These findings have implications for learning in the field of ICC that perhaps need further investigation. Approaching ICC from an assessment-based perspective, Matsumoto & Hwang (2013) observe that 2 general approaches have been favored in creating tests in this field: culture-specific assessment tools (targeting specific cultures or regions) and culture-general assessment tools (based on the assumption that individuals inherently possess a set of KSAOs, regardless of culture/region). The ensuing discussion, in line with the approach taken in this study, follows the culture-general conception and assumes that all individuals are inherently capable of developing and improving ICC.

In terms of building models for the assessment of ICC, Leung et al. (2014) recognize a mixed-model approach, but also identify three further categories, mostly based on the individually constructed content that it represents. These intra-personal domains are: (1) intercultural traits; (2) intercultural attitudes and worldviews; and (3) intercultural capabilities. Based on this categorization, it is possible to delineate the different models that have been generated within the field of ICC development and assess their contribution to this rich and complex field. Significantly, building models of ICC has implications for generating theory, anchoring assessment and supporting the facilitation of training and development. As pointed out, intercultural models can be divided into trait-based, attitude/worldview-based, capability-based and mixed approaches. Based on the work of Leung et al. (2014), five of the most popular ICC models are summarized and presented in Figure 3.

Intercultural Competence Models & Instruments	Description (Leung et al., 2014)
Global Leadership Competency (Bird et al., 2010) Global Competencies Inventory (GCI)	A mixed model based on a synthesis of theory and research on global leadership and expatriation. A new model that is promising due to its comprehensiveness; however, needs further research.
Global Mindset (Javidan & Teagarden, 2011) Global Mindset Inventory (GMI)	A mixed model that combines traits, worldviews and capabilities. Evolved from cognitive origins (mindset) to broad factors. Aims to assess the mindset that underpins being able to process complex information in global environment. Further research needed to examine factor structure across cultures and predictive ability.
Multicultural Personality (Van der Zee & Van Oudenhoven 2000) Multicultural Personality Questionnaire (MPQ)	Trait-based model rooted in the view that character dispositions are reliable (if modest) predictors of performance. Measures 5 specific, traits deemed to predict multi-cultural effectiveness. Has demonstrated good internal consistencies across different countries and predictive validity with some populations of expatriates and students.
Developmental Model of Intercultural Sensitivity (Hammer & Bennett, 1998) Intercultural Development Inventory (IDI)	A cultural worldviews-model as conceptual basis that sees ICC as along a developing continuum with increasing complexity and sophistication. ICC develops across 6 stages from "ethnocentric" to "ethno-relative". Acceptable internal consistencies across 12 countries. Has predictive capacity for studying abroad populations, percentage of intercultural friends and effectiveness in organizations. Suggests that people with higher levels of ICC are less anxious in intercultural situations.
Cultural Intelligence (CQ) (Ang et al., 2007) Cultural Intelligence Scale (CQS and e-CQS)	CQ is an intercultural capabilities model that draws on the multi-factor model of intelligence and describes an individual's ability to effectively manage, and function in culturally diverse settings. CQ consistently predicts psychological outcomes such as intercultural adjustment, behavioral and performance outcomes.

Figure 3. Five ICC models, their measuring instruments and content domains

Leung et al. (2014) contend that both the CQ model and multicultural personality model have provided the most promising evidence as intercultural competence models. This is based on comparative research reviews that assessed these models in terms of factor-structure and measurement equivalence across multiple cultures, and their reported capabilities for predicting a range of

psychological, behavioral and performance outcomes. This contention is similarly supported in a review by Matsumoto & Hwang (2013), who explored ten of the most common intercultural competence assessment tools and offer insights in terms of content validity, construct validity and ecological validity.

Based on the preceding discussion, it seems evident that the CQ model is currently at the forefront of research in this field. Before moving to a more focused discussion of CQ, one brief observation of the ICC discussion seems appropriate. From an educational perspective it is understood that guided interventions by interculturally-minded teachers/trainers is required to develop ICC in learners. Although ICC can be developed in an individual capacity through travels abroad and intercultural experiences in a local environment, it is also true that students cannot simply be expected to acquire ICC without the means to articulate their learning in this area. In higher educational contexts, instructors can therefore play a vital and instrumental role in focusing and enabling the type of learning that facilitates ICC, especially in the cognitive, meta-cognitive and behavioral domains of learning.

2.1.4 Cultural Intelligence (CQ)

Cultural Intelligence (CQ) is conceptualized as a set of malleable capabilities that enable an individual to effectively function in and manage culturally diverse settings (Ang & Van Dyne 2008, Earley & Ang 2003). Drawing upon Sternberg & Detterman's (1986) multifactor view of intelligence, the cultural intelligence model comprises four factors: (1) metacognitive CQ (an awareness, or the mental capability to acquire and understand cultural knowledge), (2) cognitive CQ (knowledge and knowledge structures about cultures and cultural differences, a person's thoughts), (3) motivational CQ (an interest, or the capability to direct and sustain energy toward functioning in intercultural situations), and (4) behavioral CQ (taking action, or the ability of behavioral flexibility in intercultural interactions) (Leung et al., 2014). This model is graphically depicted in Figure 4 below, showing the concomitant descriptions of the concept.

Research in this area has grown exponentially in recent years, and the concept of CQ, through its focus on the personal capacities that would bridge cultural differences, has assisted in the integration of the somewhat fragmented field of intercultural studies (Ang, Van Dyne & Rockstuhl, 2012). Responding to research trends in this area, authors in the CQ field has moved to expand on the concept

through a closer analysis of CQ's subdimensions and expanding the understanding. In this regard, Van Dyne et al. (2012) observes that CQ is an individual's capability to detect, assimilate, reason, and act on cultural cues appropriately in situations characterized by cultural diversity. It is therefore a domain-specific activity that has special relevance to multicultural settings and global contexts.

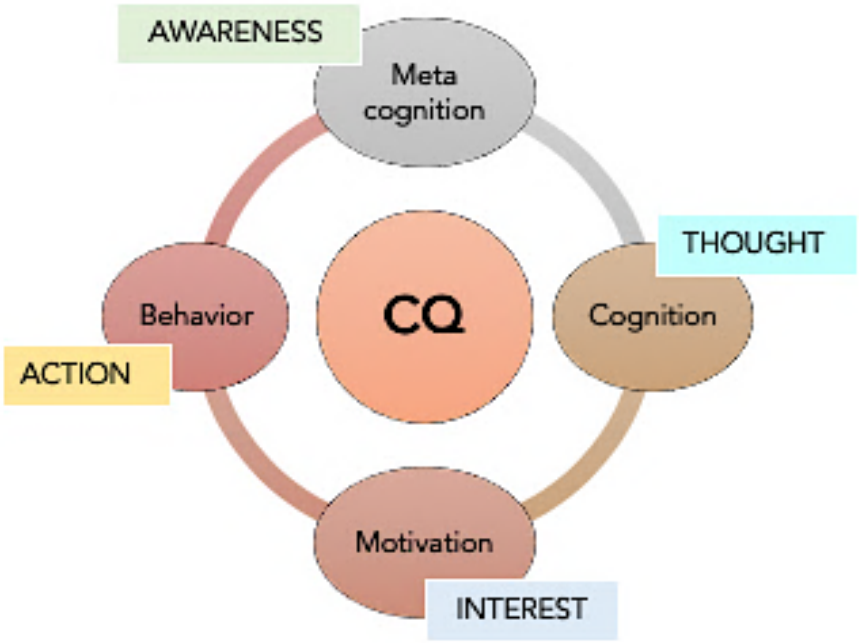


Figure 4. The CQ Model

CQ is malleable, which implies that it can be developed through active engagement in education, travel, international assignments, and other intercultural experiences. Since intelligence is more than the ability to grasp concepts and solve problems in academic settings, CQ complements other forms of intelligence, such as IQ (general mental ability) EQ (emotional intelligence), social intelligence and practical intelligence (Van Dyne, Ang, Ng, Rockstuhl & Koh, 2012). These forms of intelligence are complementary because norms for social interaction vary from culture to culture and neither cognitive intelligence nor emotional intelligence focuses specifically on capabilities with unique relevance to effectiveness in cross-cultural settings (Rockstuhl, Seiler, Ang, Van Dyne & Annen, 2011).

The *Cultural Intelligence Center*®[6], a commercially driven undertaking that focuses on the corporate and educational sectors, characterize CQ as the intercultural capacity of a person. Reflecting the research-based origins of this concept, they summarize the four-factor conceptual structure of CQ in the following manner (note that although the signified CQ factors are sometimes termed differently, they are conceptually the same): (1) CQ drive, which relates to a person's motivation, interest and confidence in settings with cultural diversity; (2) CQ knowledge, which refers to knowledge about how cultures are similar or different; (3) CQ strategy, which is how a person makes sense of culturally diverse experiences and social situations; and, (4) CQ action, which signifies a person's capability to adapt their verbal and non-verbal cultural behavior to appropriately suit a particular context (CQCenter, 2019). CQ is thus similar to, yet distinct from, IQ (general mental ability) and EQ (emotional intelligence) in that it measures a set of capabilities necessary for personal and professional success that focuses on multicultural contexts.

Leung et al. (2014) points out that motivation is a crucial component of the CQ model because (citing Ceci, 1996) most of cognition is in essence a motivated activity. In this context, motivation thus affects whether and to what extent a person directs their energy to learn about cultural differences and what efforts they make to accurately understand culturally different others. In this view, and because of the inextricable link between cognition and motivation, intelligence models that ignore the role of motivation are fundamentally incomplete (Leung et al., 2014). These authors categorize the CQ model as a capability-based approach to ICC, with the underlying assumption that it is developmental and can be improved given time and exposure to intercultural situations and contexts.

2.1.5 CQ Measurement

The Cultural Intelligence Scale (CQS) (Ang et al., 2007) is a four-factor, 20-item scale that grew out of the CQ model and has been used multi-nationally (South Korea, USA, Singapore, Ireland and Turkey), displaying similarity in factor structure and good internal consistency across multinational samples (Leung et al., 2014). CQ theory and empirical research has focused on the four factors of CQ and has relied on the 20-item Cultural Intelligence Scale (CQS) (Ang et al., 2007). This measure has

[6] The Cultural Intelligence Center https://culturalq.com/

gone through an extensive validation process, and research demonstrates that it is generalizable across (1) multiple student and executive samples; (2) time intervals ranging from four weeks to four months; and (3) in both global and domestic culturally diverse samples (Van Dyne et al., 2012). Responding to calls for further refinement, the original authors have been working on an expanded version of the CQS (E-CQS). This involved a refined theoretical conceptualization of CQ that delineates sub-dimensions for each of the four primary factors of CQ. The E-CQS is offered online through a commercial platform and its sub-dimensions aims to identify specific capabilities for each CQ factor and, through the provision of individual or group profile reports, aims to offer action steps for personal development plans to enhance CQ.

Most empirical CQ research have relied on self-reported measures of CQ and despite some criticisms of this measure, it has been shown to be reliable (Ang, Van Dyne & Rockstuhl, 2012). As these authors observe, self-report measures can be complemented through different assessment methodologies, for instance informant-based measures or performance-based measures. These would provide more nuanced picture of individual CQ by adding a triangulated view. Assessment tools are deemed to have strong validity when they contain the necessary elements to reflect what they set out to measure, can trace these measures to an underlying conceptual organization and when their findings are able to be generalized to real-life settings that are sufficiently diverse (Matsumoto & Hwang, 2013).

Following a request for permission to be used in this investigation, the CQS (original paper-form) was adopted as measure for this project. The E-CQS is only available online and requires institutional registration and payment. Both these forms were utilized in this study and a copy of the CQS is contained in Appendix 1. A sample of the 11-dimension E-CQS is reproduced below (Figure 6) to demonstrate typical questions. The original form is not reproducible due to copyright constraints, and the version from Ang et al., 2014 is provided here.

Sub-dimension	Example item
Metacognitive CQ	
Sub-dimensions	
Planning	I develop action plans before interacting with people from a different culture
Awareness	I am aware of how my culture influences my interactions with people from different cultures
Checking	I adjust my understanding of a culture while I interact with people from that culture
Cognitive CQ	
Sub-dimensions	
Culture-General Knowledge	I can describe the different cultural value frameworks that explain behaviors around the world
Context-Specific Knowledge	I can describe the ways that leadership styles differ across cultural settings
Motivational CQ	
Sub-dimensions	
Intrinsic interest	I truly enjoy interacting with people from different cultures
Extrinsic interest	I value the status I would gain from living or working in a different culture
Self-efficacy to adjust	I am confident that I can persist in coping with living conditions in different cultures
Behavioral CQ	
Sub-dimensions	
Verbal behavior	I change my use of pause and silence to suit different cultural situations
Non-verbal behavior	I modify how close or far apart I stand when interacting with people from different cultures
Speech acts	I modify the way I disagree with others to fit the cultural setting

Figure 5. Example Items of the E-CQS

On measures of validity the CQS achieved strong values, and was able to successfully predict cross-cultural judgment and decision making, general and interactional adjustment and well-being, task performance on a problem-solving simulation, work performance, cultural sales, culture shock, organizational innovation and transformational leadership behaviors, leader and team performance, cooperative relationship management behaviors, cultural adjustment, travel stress, psychological adjustment, and sociocultural adaptation (Matsumoto & Hwang, 2013). These authors further report that although there are some mixed findings using pre/post-tests of the efficacy of intercultural training using the CQS as an outcome measure, several studies have provided evidence for the incremental validity of the CQS to predict adjustment or adaptation above and beyond variables related to personality, demographics, and emotional intelligence.

The review by Matsumoto & Hwang (2013) offer two further relevant observations for future research. The first is the value that qualitative studies can add to quantitative validations of measurement, while the second includes the examination of the constructs underlying intercultural competency through a consideration of the fact that cross-cultural adaptation is an emotional process.

Future studies should therefore benefit from qualitatively exploring the extent of the overlaps between emotional skills and intercultural skills. These suggestions link with Leung et al. (2014) who have highlighted the need for research on how the measured competencies translate into effective behaviors in specific intercultural contexts. This suggests a continued need for understanding how ICC can be understood in order for it to be effectively learnt and applied.

To conclude this section of CQ within the broad frame of ICC and its development, it can be observed the CQ model has grown rapidly in recent years as it has been applied in various academic disciplines, but also in many practical applications. Due perhaps to its parsimonious four-factor model, it is easy to understand and explain to different audiences. With the continued expansion of globalization in all spheres of life, it seems likely that CQ will continue to be in demand as a means to describe the ease and efficiency with which people behave interculturally. Of the many questions posed in the preceding discussion, most pertinent to the purpose here is the issue of how ICC can be developed. Although several prescriptions or suggestions were evident in the ICC training and education perspectives presented earlier, the need for a comprehensive pedagogy for ICC came persistently to the fore, particularly in the context of higher education. This topic is now further discussed and, as outlined in Chapter 1, the means for exploring this central question of ICC development (or CQ growth), is augmented through the discipline of ID&T.

If culture is always salient to the learning process, the implication is that educational professionals of all persuasions are intimately involved in the transmission of culture during the learning process. In the words of Paolo Freire (2005), teachers are "cultural workers". Clearly then, there is a direct incentive for the educationist, and the designer of learning, to be cognizant of his/her own cultural predispositions as well as those of all the potential learner-participants (Parrish & Linder-VanBerschot, 2010). Cultural competence is an increasingly popular topic, not only in the field of intercultural studies, but also in a variety of fields that include business, organizational studies and higher education (Berardo & Deardorff, 2012). Research in these areas has shown that the development of intercultural skills must be intentionally developed over time through effective learning experiences. As a result, the need for new, innovative approaches to training and facilitating intercultural learning continues to increase (Berardo & Deardorff, 2012).

This contention is a key impetus for the current investigation, along with an observation by Fischer (2011) that the field ICC still lacks an overarching pedagogical framework to support and drive the development of this set of competencies and its associated methods and materials for learning and instruction. Similarly, and relevant for the field of ID and e-learning, research have indicated that e-learning tools lack a sufficient consideration of pedagogical approaches, leaving such matters to the educators using them (Alonso et al., 2005). In fact, a critical investigation of global e-learning practices (Henderson, 2007, p. 132) concluded that it remains, to some extent, "culturally blind". The increasing diversity of real-world classrooms and virtual learner groups has however caused a renewed consideration of the impact of cultural phenomena on the learning process (Thomas, Mitchell & Joseph, 2002; Clem, 2004; Rogers, Graham & Mayes, 2007; Suzuki & Nemoto, 2012). Nevertheless, this area of ID&T continues to suffer from a shortage of relevant research (Clem, 2004; Gunawardena, Wilson & Nolla, 2003; Parrish & VanLinder Berschot, 2010) and often relies on models and frameworks from other disciplines (Rogers, Graham & Mayes, 2007).

This situation appears to be slowly changing, with cultural and intercultural learning being investigated on the contention that "… virtual learning environments may represent a significant leap for intercultural training programs" (Lane & Ogan, 2009, p. 26). Based on a reading of research trends in these overlapping areas, two central issues relevant to the current purpose were thus identified: (1) a neglect of the cultural considerations in the design of instruction/learning, and (2) the lack of a coherent and overarching framework to inform the pedagogy for intercultural learning/training. These shortcomings are also evident in the insufficient design for online learning and the tools, software and environments to support ICC development. Discussion now turns to the central role of ID&T and its potential value in contributing theoretical insights and practical applications to the issues as outlined above.

2.2 Instructional Design & Technology (ID&T)

Helping people to learn better is the central pursuit of ID&T (Reigeluth & Chellman, 2009). The second section of this chapter therefore considers the foundations of effective instruction by introducing well-known ID theoretical models. Following a consideration of essential design elements, the third part of this chapter outlines two forms of learning-in-application: experience-based learning (EBL) and

blended learning (BL). The incorporation of these latter two approaches extended the reach of the initial ID theory and models.

Over the years, many attempts have been made to reach a conclusive definition for the field of ID&T, yet it continues to shift. Recent perspectives in this field, which have continued to recognize and incorporate advances in neighboring fields, particularly emphasize the facilitation of learning and the improvement of performance, as well as how these aspects are related to technological innovation and development (Reiser, 2012). As a reflection of these shifts in emphasis, Reiser & Dempsey (2012, p. 5) propose the following comprehensive definition:

> The field of instructional design and technology encompasses the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and non-instructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace (p. 5).

ID&T thus encompasses the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and non-instructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace. Essentially defined, instruction is "anything that is done purposefully to facilitate learning" (Reigeluth & Chellman, 2009, p. 6). The facilitation of learning comes to the fore as one of the expanding recent trends and is also recognized as a central concern in the field of educational technology, where it is tied to technological advances. In this regard, the Association for Educational Communications and Technology (AECT) (as quoted in Reiser & Dempsey, 2012, p. 4) defines educational technology as: "… the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources".

Unpacking this definition, Reiser (2012, p. 4-5) highlights the intention to facilitate learning, connecting the work of ID professionals to the improvement of performance. The AECT's definition implies that it is not merely sufficient for learners to acquire inert knowledge, but that they should be helped to apply their newly acquired skills and knowledge. Furthermore, there is an emphasis on the creative, utilitarian and managed elements in the generation of instructional interventions and learning environments. The creative elements referred to include analysis, design,

development, implementation and evaluation. The utilitarian functions include selection, diffusion and institutionalization of instructional methods and materials, while the management aspect refers to project, delivery system, personnel, and information management. In addition, professional conduct is highlighted in the reference to ethical practice, while the technological dimension includes all the types of processes that practitioners engage in, as well as the types of resources they typically produce.

This brief introduction should demonstrate that essentially, ID&T is concerned with the facilitation of learning through a system of procedures that develops education and training in ways that are reliable and consistent. For the current purpose, the discussion will delimit this very broad field through a focus on two of the well-known and popular ID models (ADDIE and ARCS), but will also reference a third, more recent model, namely the successive approximation model (SAM). These ID models, in conjunction with the application of two learning approaches – experience-based Learning (EBL) and blended learning (BL), were the methodological mainstays of this project and were synthesized with ICC and CQ theory as the investigative framework.

The field of ID traces its roots to behaviorism but has in fact benefited from several theorists across a variety of disciplines, most notably cognitive psychology and systems thinking (Branch & Merrill, 2012). The development of most ID models appears to have commonly included systems theory, leading to the observation that the actual practice of ID might be best understood as a curvilinear process. To exemplify this curvilinear process, Branch (1996) proposes the following diagram (Figure 6) to characterize the classic practice of ID. Curvilinear models help to successfully portray and communicate the processual and cyclical elements of ID thinking and its application in practice (Branch & Merrill, 2012). Practically all ID models generated since the 1970's contain some of the core elements typified in the so-called ADDIE model (Molenda, 2008). It is one of the main models that this investigation draws upon and is discussed forthwith.

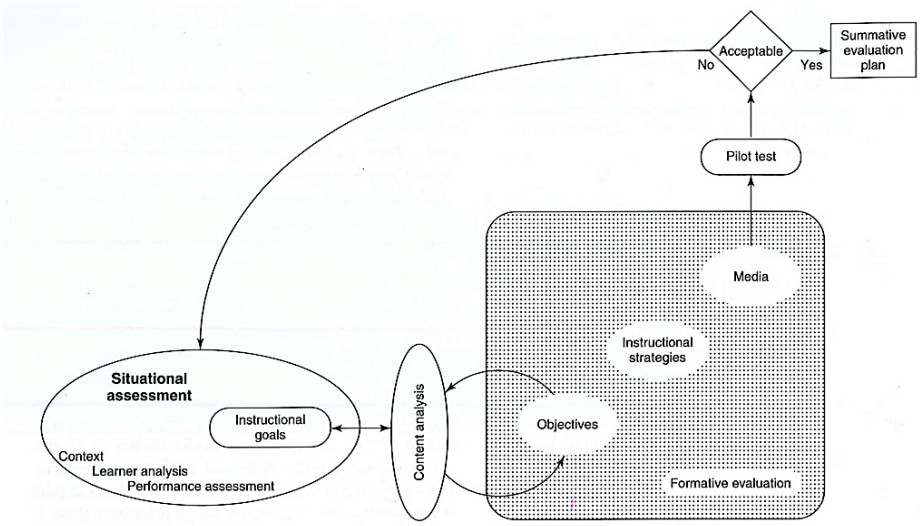


Figure 6. An ID model based on a systems approach

2.2.1 The ADDIE Model

The concept of systematic product development came to the fore with the formation and expansion of societies, and creating marketable products using the ADDIE model remains one of the most effective tools in contemporary product design (Branch & Merrill, 2012). ADDIE, which is an acronym for the elements of Analyze, Design, Develop, Implement and Evaluate, is based on the idea of systematic product development. ADDIE has become a colloquial term to describe this process and rather than being a fully elaborated model in its own right, should instead be viewed of as a paradigm for a family of models that share a common inherent structure (Branch & Merrill, 2012; Molenda, 2008). Figure 7 (following Branch & Merrill, 2012) portrays the core elements of ADDIE.

As illustrated, the *Analyze* element of this model includes conducting a needs assessment or the process of identifying a performance problem in a specific context (business, for instance), and formulating a goal. The second element, *Design,* includes writing objectives in measurable terms, outlining and classifying the types of learning while linking specific learning activities to it and specifying relevant media as a further step.

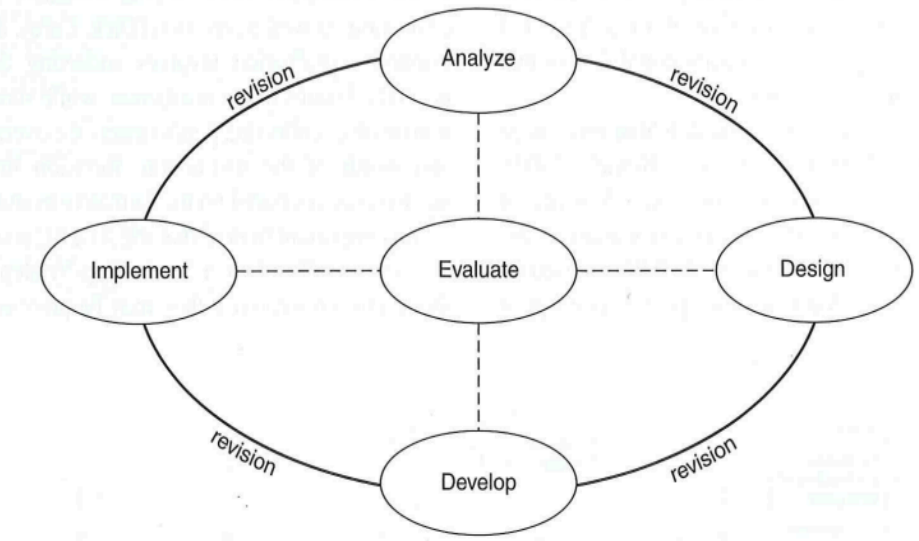


Figure 7. The core elements of ADDIE

Following this, *Development* then specifies student and instructor materials (analog and/or digital, or otherwise) cognizant of the design. *Implementation* includes delivering the instruction in the relevant settings, while *Evaluation* completes a cycle with formative and/or summative evaluation with revision included (Branch & Merrill, 2012). Formative evaluation refers to the collection of data for revision purposes while summative evaluation includes data collection that helps to assess the overall effectiveness and value of the instruction (Branch & Merrill, 2012). As pointed out in earlier discussion, the cyclical process that this model advocates highlights the iterative and self-correcting nature of the ID process, which assures opportunities for recurring and concurrent design of activities that should characterize the design of instruction (Branch & Merrill, 2012).

Project managers often describe ADDIE as a 'waterfall approach' (Figure 8, Rimmer, 2019) since it follows a series of ordered steps in product development. While popular in many organizations, critics have pointed out that this sequential approach contributes to many of the challenges faced by instructional designers. These challenges include (1) prolonged development cycles that are sometimes surpassed by demands of new training or technology, thereby arresting productivity;

(2) a communication and/or expectation mismatch between stakeholders (developers and clients) since issues related to the development cycle often arise only after product release; and (3) limited time for testing, which is actually a crucial step that are often skipped due to time or financial shortcomings (Rimmer, 2019).

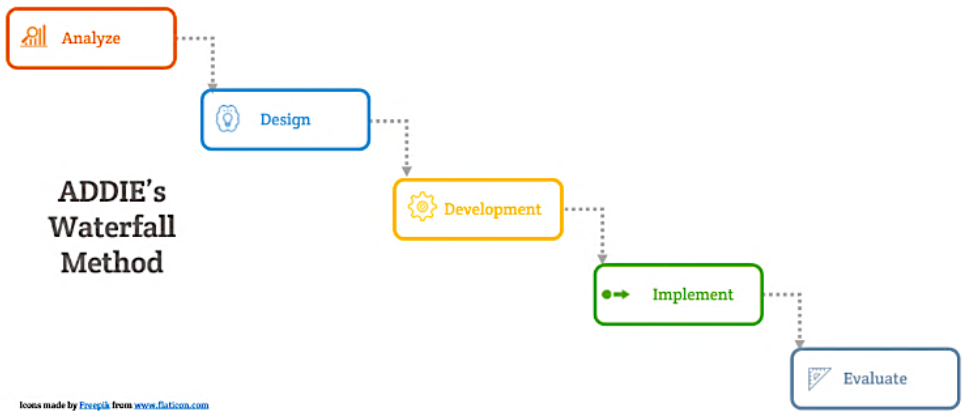


Figure 8. ADDIE's "waterfall method"

The systematic approach that is advocated through ADDIE can thus be described as a rational approach to the design of instruction that attempts to organize participants and events related to the learning process in a systematic way. As such, it encapsulates a systemic, responsive, interdependent, dynamic and creative approach that lends itself to broad applications in a variety of contexts. The application of the ADDIE model involved its synthesis in the framework of enquiry used in this project. This procedure is presented in section 2.4 of this chapter, while the first application involving the framework follows in Chapter 4.

2.2.2 The Successive Approximation Model (SAM)

Another, more recent ID model that shares a similar structure and language with the ADDIE approach is the Successive Approximation Model (SAM). Although this model was not explicitly applied within the current investigation, it was used as a frame of reference – and, to some extent, an organizational framework – to retain a "big-picture" perspective of the project, to retain focus of the identified goals and

to help keep track of the smaller developments within the larger project that extended over the 3-year period.

SAM has been described as an updated or improved version of ADDIE that is more in tune with current product design and the technological support it incorporates (Allen & Sites, 2013). The model was developed by Allen Interactions [7] and, unlike the big five sequential steps advocated by ADDIE, can be described as a more cyclical process which can be scaled from basic SAM_1 to a more extensive SAM_2 (Figure 9, Rimmer, 2019) application, depending on the client's need. SAM_1 is considered the basic SAM process which fits better with smaller projects or teams that do not require a lot of complicated technology (video or custom programming, for instance). This version of SAM is a cyclical model with three basic iterations that incorporates the familiar ID design steps of evaluation/analysis, design and development. With its basic iterative approach, all stakeholders' ideas and assumptions can be discussed, prototyped and tested, hastening the development of a useable product (Rimmer, 2019, Figure 9 below).

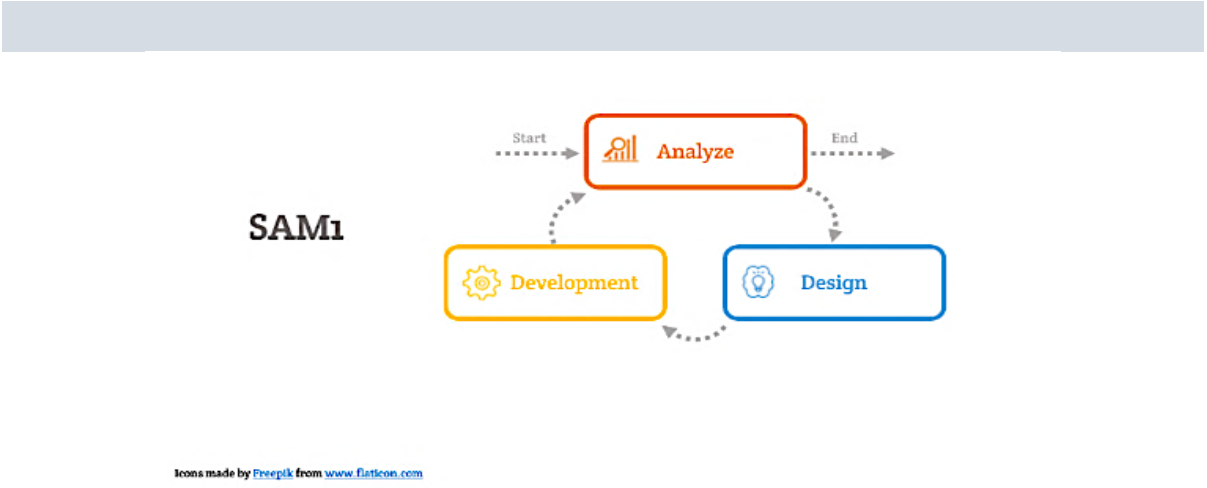


Figure 9. SAM_1

For more complex projects, SAM_2 is more appropriate. This version, an extended of SAM_1, consists of eight iterative ID steps spread across three project

[7] Allen Interactions Inc. is a company based in St. Paul, Minnesota USA. According to their website, their focus is on developing performance-driven training events, backed by the best instructional design. They strive to build meaningful, memorable and motivational custom learning solutions. https://www.alleninteractions.com/

phases: (1) preparation, (2) iterative design and (3) iterative development. The most apparent feature in this model is the two-step preparation phase, namely (1) gathering information and (2) holding a brainstorming and prototyping meeting, otherwise known as a "savvy start" (Rimmer, 2019). Essentially, this refers to bringing all relevant stakeholders together in a focused session (1-3 days) for brainstorming, sketching and creating a prototype (Allen Interactions Inc., 2019). As pointed out in Chapter 1, the SAM was utilized as an overall guiding process-principle for this project, and although the exact steps were not incorporated in the eventual framework, it continued to provide a useful anchor at the macro-level of the project.

For both SAM models, the emphasis is on using an iterative approach to create the end product right from the start, while continually analyzing and refining the work as it is being produced. While ADDIE is typically applied in a linear, waterfall methodology, SAM is considered to be an "agile approach", that is, design and development that follows incremental steps, instead of all at once. Using an agile approach to create learning can help to alleviate some of the many challenges referred to above: that is, a lack of visibility for the project team into the ID process, and a potential for protracted development time frames (Rimmer, 2019). SAM_2 is reproduced in Figure 10 below (Allen Interactions, Inc., 2019).

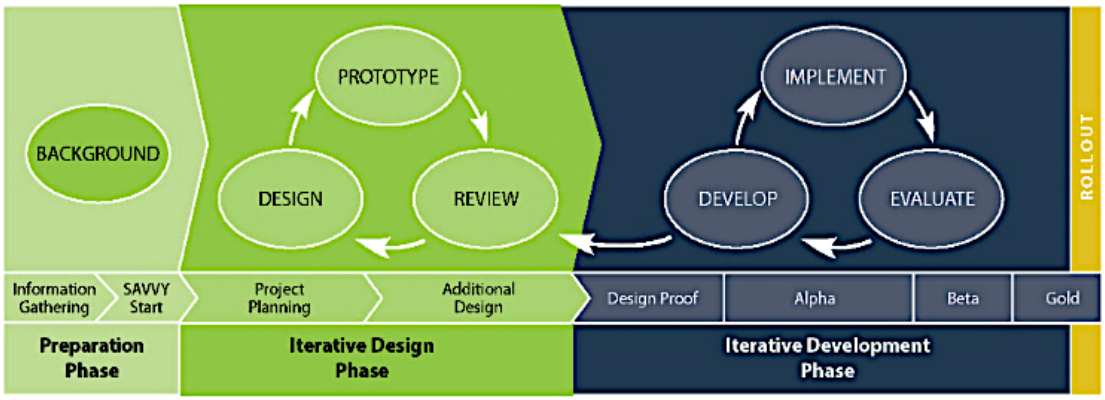


Figure 10. Iterative learning development with SAM_2

Both ADDIE and SAM follow approaches that are normative in nature, which helps to understand their sequential design steps and processual application. While such a rational approach to the learning process can help to describe, organize and

operationalize the steps that need to be taken by learning participants, there are other, mentally significant factors that can exert a determining influence on the 'objectively' observable cognitive processes and behaviors of people. For the sake of brevity, it will broadly be referred to here as psychological aspects related to learning, with the understanding that it includes mainly internal aspects of the learner. These impactful factors relate to the affective/emotional, socio-cultural, identity and personal characteristics that may influence the learning process and are vital to consider in the design of learning and instruction.

The fundamental principles of SAM is encapsulated in a clearly defined and manageable illustration of the design process that encourages creativity and experimentation throughout. It aims to consistently reveal the design as it evolves, in ways that are visible to all stakeholders for evaluation. In this way, it aims to help all team members communicate, contribute and collaborate. The small, purposeful and iterative steps help to facilitate analysis and evaluation and clarifies ways to achieve success. Each phase indicates definitive markers for completion, targeting moments for reaching agreement and consensus and encourage the management of budget and resources (Allen Interactions Inc., 2019).

The ensuing discussion now turns to these aspects, and in particular, to the volition for learning that becomes evident in the motivation for, and eventual impact that this has on performance. The reason for isolating this particular aspect of the learning process rests on a very basic assumption that a motivation for learning, in its broadest sense, exists in all people from birth. It is in fact a truism that all human development is tied to a fight for survival and that our development and achievements as a species thus far is the result of an inborn capacity to learn from experience, to adjust our mental faculties and consequent actions. The motivation for learning, perhaps because it was tied to environmental pressures from the beginning, could therefore be linked in a continuous way to our experience. The organization of learning in the education systems that we participate in from early childhood therefore impact and shape the internal motivational drive in various ways.

2.2.3 The ARCS Model

While studies on human motivation have existed in psychological literature for a long time, the concern for learner motivation in the field of ID came to the fore

most clearly in a seminal theoretical article by Keller (1979). In particular, the question of how to integrate motivation in the design of instruction lacked a comprehensive understanding due to the "… multitude of discrete motivational concepts and the lack of integration of motivational principles into the design process" (Keller & Deimann, 2012, p. 84). Research into the area of motivation within ID have flourished since the publication of Keller's (1979) article, and the understanding that motivation is an internal construct that is irrevocably tied to the personal experience and expectations of the learner, is now taken as a truism in the field. As Keller & Deimann (2012) points out, the instructional designer must not only be fully cognizant of the entire range of motivational methods and models that are available but should also know how to integrate them into a variety of learning contexts.

It is outside the scope of this study to review the entire field of motivation research and for the current purpose, the focus will therefore be limited to a discussion of the ARCS design process (Keller, 1987, 1999, 2008). Although other motivation researchers have made notable contributions to ID – Wlodkowski (1999) for instance – the ARCS model was utilized here because of its problem-solving approach and its comprehensive, but practical and systematic design process that includes an analysis of the audience. It was also a compatible choice, linking well with the ADDIE framework and the underlying approach expounded in EBL. The 10 steps that this model entails is consequently outlined and briefly discussed. As with the application of ADDIE in this project, the ARCS model in its current application will be explicated in section 2.4, since it was judged to be a methodological consideration within the framework that was developed for this investigation.

The ARCS model of motivation (adapted in Figure 11, from Keller, 1987) was developed to find more effective ways of understanding the major influences on the motivation to learn, and to assist in finding systematic ways for identifying and solving problems with learning motivation. The model is a method that improves the motivational appeal of ID materials and contains three distinctive features: (1) it has four conceptual categories that subsume many of the specific concepts and variables that characterize human motivation; (2) it includes sets of strategies that can be used to enhance the motivational appeal of instruction; and (3) it incorporates a systematic design process, called motivational design, that can be used effectively with traditional instructional design models (Keller, 1987).

Motivational Concept	Motivational Strategies	Motivational Concept	Motivational Strategies
Attention A	▪ Incongruity & conflict ▪ Concreteness ▪ Variability ▪ Humor ▪ Inquiry ▪ Participation	Relevance R	▪ Experience ▪ Present worth ▪ Future usefulness ▪ Need matching ▪ Modeling ▪ Choice
Motivational Concept	Motivational Strategies	Motivational Concept	Motivational Strategies
Confidence C	▪ Learning requirements ▪ Difficulty ▪ Expectations ▪ Attributions ▪ Self-confidence	Satisfaction S	▪ Natural consequences ▪ Unexpected rewards ▪ Positive outcomes ▪ Negative influences ▪ Scheduling

Figure 11. The ARCS Model

The ARCS model asserts that learners are individually different, motivationally speaking, a potentially determining factor that should be taken into account whenever possible during the design of learning (Francom & Reeves, 2010). As shown in Figure 11, the four main motivational constructs in the ARCS model are Attention, Relevance, Confidence, and Satisfaction. *Attention* refers to directing and sustaining learners' attention to appropriate learning materials. Several strategies for gaining and sustaining learner attention are then outlined and includes creating incongruity or conflict in information or events, expressing examples and visuals in concrete ways, varying presentation, media, format, and interaction styles, introducing humor in a lesson, supporting inquiry, and requiring learner participation (Keller, 1987; Francom & Reeves, 2010). *Relevance* in the ARCS model refers to the perceived relevance of subject matter to learners. Strategies to increase the perceived relevance of subject matter include relating what is being learned to learner prior interest or experience, stating the present worth of the subject matter, relating subject matter to future experiences that learners may have, matching student needs to instructional strategies, modeling enthusiasm for the subject matter, and providing learners with meaningful choices in learning (Keller, 1987).

Confidence refers to a learner's level of confidence that s/he will succeed. Highly confident learners may persist in learning, while those with low confidence may give up more easily. Making learning requirements clear to students, organizing materials to gradually increase difficulty level, helping learners to expect success, attributing learner success to effort, allowing learners to become more independent in learning activities, and practicing tasks in realistic settings as strategies, according to Keller (1987), may assist in increasing their confidence.

The *Satisfaction* dimension in the ARCS model refers to how learners feel about their accomplishments and is aimed at appropriately rewarding the learning performance based on learners' extrinsic and intrinsic motivation. Strategies here include providing positive natural consequences for learning, providing students with unexpected rewards for learning, giving learning feedback and praise, avoiding negative influence on learning, and scaffolding the frequency of reinforcements based on the level of learner experience with a task (Keller, 1987; Francom & Reeves, 2010).

Further to these the motivational concepts, the ARCS model recommends a motivational design process that can be utilized to improve the motivational appeal of instruction and address other motivational issues. In a recent version (Keller & Suzuki, 2004), this process suggests 10 steps anchored to four basic design phases, namely analysis, design, development and evaluation. Significantly, this development in the model enabled applications to e-learning and distance education (Keller, 1999), multimedia-learning (Deimann & Keller, 2006), computer-assisted-learning (Song & Keller, 2001) and a variety of other learning contexts, including settings a different cultural and geographical area (Keller & Suzuki, 2004).

2.3 Experience-Based Learning (EBL)[8]

The notion of learning through experience is arguably as old as humanity itself, with some of its recorded roots emanating in classical philosophy (Aristotle), tracing developments through the 17th century (John Locke) and 18th century (John Stuart Mill), and stretching through to the modern educational thinkers such as John Dewey and educational practitioners such Maria Montessori, Kurt Hahn and A.S. Hill

[8] Note that the terms 'experiential learning', 'experience-based learning (EBL)' and 'learning from experience' are used interchangeably. The concept is shortened to 'EBL' for the sake of brevity.

(Schwartz, 2012). Understandings of EBL in recent times have been most impacted upon by theoreticians and practitioners in the developmental, humanistic and cognitive psychologies (Andresen, Boud & Cohen, 1995). Theories of EBL started expanding in the mid-19th century as "... attempts to move away from traditional formal education, where teachers simply presented students with abstract concepts, and toward an immersive method of instruction" (Schwartz, 2012, p. 1). EBL therefore relies upon a broad interdisciplinary foundation that seeks to involve the learner in creative, experience-based ways to further specified educational goals.

2.3.1 Defining Experience-Based Learning

In its simplest form, EBL means learning by doing: students are first immersed in an experience and then encouraged to reflect in order to develop new skills, attitudes or ways of thinking (Lewis & Williams, 1994). In fact, as Boud, Cohen & Walker (1993) state, it is virtually impossible to separate learning from experience:

> We found it to be meaningless to talk about learning in isolation from experience. Experience cannot be bypassed; it is the central consideration of all learning. Learning builds on and flows from experience: no matter what external prompts to learning there might be - teachers, materials, interesting opportunities - learning can only occur if the experience of the learner is engaged, at least at some level. These external influences can act only by transforming the experience of the learner (p. 8).

Learning is thus irrevocably tied to experience, and it is commonly accepted that humans are born biologically ready to accommodate, organize and integrate new experiences in such a way that it furthers their own development. In fact, Fenwick (2000, p. 284) suggests that experiential learning inevitably implies a process of human cognition. Although the exact relation between experience and learning remains somewhat elusive, Beard & Wilson (2013, p. 24) conclude that "... experience probably provides the most coherent theory of learning".

Formulating a comprehensive, yet essential definition of EBL for educational purposes remains difficult. Beard & Wilson (2010), in a review of several definitions from various theorists, contend that adult EBL remains complex, vague and ambiguous, and for research purposes, is still inadequately defined and conceptually suspect due to the varied number of interpretations. The implication is that EBL still lacks a single and clear definition. They propose a definition with broad applicability (Beard & Wilson, 2010, p. 26): "Experiential learning is the sense-making process of active engagement between the inner world of the person and the outer world of

the environment." Their comprehensive interpretation of EBL is adopted here to help explicate and operationalize its application (Beard & Wilson, 2010):

> … a sense making process involving significant experiences that, to varying degrees, act as the source of learning. These experiences actively immerse and reflectively engage the inner world of the learner as a whole person (including physical-bodily, intellectually, emotionally and spiritually) with their intricate 'outer world' of the learning environment (including belonging and doing - in places, spaces, within social, cultural, political context etc.) to create memorable, rich and effective experiences for and of learning (p. 26).

Central to the practice of EBL is the notion that the experience of the learner occupies the primary position in all considerations of teaching and learning (Andresen et al., 1995). These authors observe that all learning necessarily involves experience of some kind, whether it occurred previously, or is current. At its most succinct, learning was defined by Kolb (1984, p. 38) as: "… the process whereby knowledge is created through the transformation of experience." Despite the brevity of this statement, there is a recognition that learning is a very broad and fluid activity that is not simply reducible to a single set of methods, strategies or formulas. Instead, as highlighted by Andresen et al. (1995, p. 225-6), three underlying and complex distinctions mark EBL as a unique and distinctive approach. It is recognized that each of these factors simultaneously operate as signifiers for an experience-centered learning:

1) An involvement of the whole person – intellect, emotions and senses. Learning thus includes the process of playing and/or acting that involves the intellect, the senses and emotions (such as in role-plays, games, etc.);
2) The recognition and active use of all the learner's relevant life and learning experiences. When these factors are drawn into new learning experiences, current learning is likely to be much more meaningfully and effectively integrated into the learners' values and understanding;
3) The use of a continued process of reflection associated with earlier experiences, adding to, and transforming them for deeper understanding. This is dependent on the learner's memory and is taken to be more significant than the actual experience itself; that is, the quality of the learner's reflective thought is tied to the true significance of the learning.

Ultimately, EBL therefore aims to cultivate the integration of learning material in such a way that it becomes personally meaningful: it seeks to attain the creation

of knowledge through a process of transformation (Kolb & Kolb, 2009). How this process is accomplished remains an ongoing research endeavor. Kolb & Kolb (2009) suggest an insightful model to help understand this process fundamentally (Figure 12, Kolb & Kolb, 2017). In this portrayal, the learning process is depicted as an idealized learning cycle (or spiral) where the learner moves through a series of steps (experiencing, reflecting, thinking and acting). This constitutes an essential, recursive learning process that is embedded in a particular learning situation which assumes

> … immediate or concrete experiences are the basis for observations and reflections. These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences (Kolb & Kolb, 2009, p. 299).

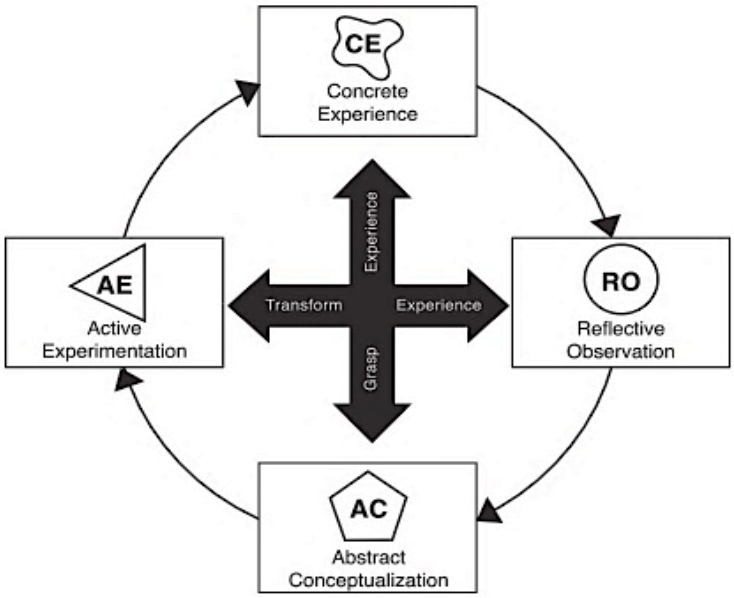


Figure 12. The Experiential Learning Cycle

Importantly, Kolb & Kolb (2009) take a broad view that EBL is more than merely the use of exercises and games in learning: their model indicates, for instance, that concrete experience (CE) and abstract conceptualization (AC) (so-called 'real' and 'actively imagined') are equal parts of the learning process and may become significant learning experiences, depending on the intensity of personalized engagement within the learner. Significantly, these authors link these processes to the ongoing development of meta-cognition. Building on research work of others

(Nelson, 1996; Owings, Peterson, Bransford, Morris & Stein, 1980), they suggest that the learner's (self-)reflective monitoring while spiraling through each phase of the learning cycle continues to enhance abstract conceptualization. In turn, this creates ongoing concomitant effects that feed into current and future acts of experimentation. This constitutes the essence of the spiral of learning.

2.3.2 Learning Design and EBL

Designing learning that incorporates EBL requires cognizance of several essential elements: (i) learners' personal engagement; (ii) debriefing and reflection as required stages; (iii) learning that involves the whole person (affect, cognition, senses, etc.); (iv) a recognition of what the learner brings to the learning process; (v) a basic ethical stance toward the learner that includes values of respect, validation, trust, et cetera (Andresen et al., 1995). In practice, the deliberate design of EBL incorporates the following foundations (Andresen et al., 1995):

1) *Intentionality of design:* Learning events are intentionally structured activities that include simulations, games, role plays, visualizations focus group discussion, sociodrama and hypotheticals;
2) *Facilitation:* This refers to the involvement of others, such as teachers, leaders, coaches, therapists, etc. EBL assumes relatively equal relationships between learners and these participants and involves possibilities for negotiation that aims to bestow considerable control and autonomy to the learner. Learning outcomes may be impacted by the level of skill displayed by these participants.
3) *Assessing learning outcomes:* In line with fundamental principles of EBL, the choice, extent and purpose of assessment within the learning process is taken into consideration. Assessment tasks typically include group projects, critical essays that take the learner's lived experience into account, reading logs, learning journals, negotiated learning contracts, peer- and self-assessment. It may also include a range of presentation modes other than writing, thus enabling holism, context and complexity of the learning to come to the fore.

EBL can broadly be divided into two categories: field-based experiences and classroom-based learning (Schwartz, 2012). Field-based learning (the oldest and most-established form) typically includes internships, practicums, cooperative education and service learning. Classroom-based EBL covers a broad variety of learning forms: role-playing, games, case studies, simulations, presentations and

various types of group work (Lewis & Williams, 1994). It is understood that both these forms incorporate what is implied with 'active learning', which has become sought after components in the learning re-design in higher education contexts. Taking a learning design perspective, Schwartz (2012) (building on Cantor, 1995), provides a three-step series of considerations for incorporating EBL into a study course. These are summarized in Table 2 below.

Table 2. Incorporating EBL activities into a course of study

Consideration	Possible questions
① Analyze the learner population & determine their needs.	▪ Are the students undergraduates/graduates? ▪ Are they mature learners or younger learners? ▪ What are their levels of content mastery? ▪ Are there cultural variations and needs?
② Identify appropriate activities for this learner population & course content.	▪ What activities are appropriate to match the content and cognitive demands? ▪ Which aspects of the course will benefit from EBL expansion? ▪ How does the activity help to meet course goals and objectives, and the curriculum? ▪ How does the EBL activity help learners to experience the key concepts in the course?
③ Identify potential issues when integrating EBL.	▪ How will EBL fit into the curriculum as a whole? ▪ When designing/modifying a course (how) will other content have to be adapted/modified or sacrificed for EBL? ▪ Is their institutional support for EBL in this curriculum?

Schwartz (2012) further points out that it is not the particular activity that is experiential, but rather the way that it is framed. She recommends a general framework to assist in designing instructional activities that are experiential, as proposed by Cantor (1995, p. 82):

1) Decide which parts of the course can be instructed more efficiently with EBL.
2) Consider how any potential activities match the course learning objectives.
3) Consider how the potential activity complements the overall course of study.
4) Consider the grading criteria and evaluation methods that would match the proposed EBL activity.

Following a decision about a potential activity that will be implemented,

Wurdinger (2005) suggests a series of design steps that will help frame the EBL activity. As a point of departure for the appropriate frame of mind, instructors need to think about problems to be solved rather than information to be remembered. To ensure a combination of thinking and doing, a problem/question must be intertwined with activities, projects and field-based experiences. It is further useful to think about a mixture of primary and secondary experiences and combining them within the same academic course. Primary experiences are the activities themselves and secondary experiences, or reflections, can be the result from these primary experiences. Graduate/mature students may have more primary experiences to draw upon for reflective purposes (Wurdinger, 2005), which relates back to a proper assessment of the learner audience. Significantly, building on the necessary structure, such as an effective experiential learning environment, is an important component of the design framework (Schwartz, 2012).

Integrating EBL into a course can utilize a series of principles, suggested by Wurdinger (2005, p. 63). These are summarized in Table 3 below.

Table 3. Instructional guidelines for integrating EBL into a course

1) Use a major project/field experience to guide learning over an entire course. This can serve as a unifying, driving force to help focus the learning and reminding the participants that the course has a purpose.
2) Use a combination of projects, classroom activities and external experiences to keep the course interesting and engaging while adding value to the overall process.
3) Tie everything together. Class readings and lectures should directly link to the EBL activities. These elements should be thought of as resources that will help learners complete the project.
4) Ensure activities are challenging, yet manageable. Learners should be able to grasp, execute and achieve completion.
5) Provide clear expectations for students. This could include assessment criteria, or examples of completed projects and activities from previous courses.
6) Allow students the necessary time to identify, clarify and stay focused on the identified problem.
7) Allow students to change direction midstream. Crucially, contents should be relevant and meaningful to students; if they lack interest, the learning will also fall short.

From the preceding discussion, it should be clear that the design of classroom activities for EBL should help to cultivate a sense of 'aliveness' - or active learning - in the classroom. In other words, learners should feel safe to creatively explore, analyze and think through a learning activity with a sense that it is relevant to them and that it is relatable to real-life situations.

2.3.3 The role of the instructor in EBL

Being a teacher in the EBL-inspired classroom differs from traditional classroom settings. Given the goal of retaining a learner-centered experience, the instructor seeks to relinquish the traditional roles of being an authority and leader. Instead, s/he aims to evolve as part of the learner-group, gradually taking the role as a guide, a cheerleader, a resource and a support (Schwartz, 2012). The teacher's role nevertheless covers a broad range of areas in the EBL classroom. Warren (1995) brings these overlapping responsibilities together in a set of roles (Table 4).

Table 4. The role of the EBL instructor

1) Informed consent: Provide an outline and course description in sufficient detail to enable students to become responsible participants.
2) Establish a concrete vision: Provide initial focus and structure that include goals and cultivate a particular style of engagement that will set the direction for the entire course.
3) Set ground rules: By creating classroom ways of behaving through statements and examples, the instructor creates a safety net that helps participants feel safe enough to express personal opinions and feelings. Warren (1995) suggests using "I" statements to express feelings, active listening, using inclusive language, constructive feedback and the intolerance of oppression.
4) Provide process tools: Participants need skills for being part of collaborative projects. Warren (1995) suggests ways to assist the development of these skills: a) Think as a group: learn & practice brainstorming, prioritizing strategies; b) Decision-making: explain consensus-building & practice in discussions; c) Leadership: learn about & practice the different roles of a group-leader; for instance, timekeeper, question framer, focuser, summarizer, etc.; d) Problem-solving: provide simple problems to be solved at the beginning, gradually building towards more complex problems;
5) Feedback & debriefing: Evaluation and reflection are essential elements and there should be regular and timeous points for obtaining these; provide guidelines for giving qualitatively sufficient reflections.

2.3.4 Assessing EBL

Assessment and evaluation are central to the EBL process and the appropriate methods of assessment are thus concerned with maintaining the reflective process in a cyclical learning format. This entails choosing appropriate tools for assessment, such as self-assessment in order to assist both instructor and student in realizing the depth and extent of learning growth. Because EBL activities are in themselves the means to achieve learning ends, assessment presents a unique challenge for instructors (Wurdinger, 2005).

While it is important to measure outcomes in learning, EBL requires a deeper assessment of both the process and the product of learning, that is, to try and move beyond the mere ability of participants' ability to recall information imparted during the course. It thus becomes necessary to devise unique assessment methods that may require separate methods for tracking and measuring formative and summative achievements (Moon, 2004, p. 155). A further challenge in developing appropriate assessments concerns the variability of experiential activities. Coupled with students' unique patterns of engagement emanating from the experiential nature of the activities, it cannot be assumed that participants will learn the exact same things. Instead, each learner is likely to integrate unique learning impressions (Schwartz, 2012). It is therefore a given that these variables be treated as uncontrollable and broadly confounding in terms of assessment.

Citing the work of Ewert & Sibthorp (2009), Schwartz (2012) discusses how to manage some of these confounding variables' influence. Basically, this involves categorizing the variables into three classes: (1) precursor variables (e.g. prior knowledge and experience, demographics, pre-experience emotions, self-selection, etc.); (2) concomitant variables (these arise during the learning experience and often exert an immediate impact as a result of, e.g. course particularities, group characteristics, situational impacts, frontloading for experience, etc.); and (3) post-experience variables (that arise after completion and might include social desirability or self-deception positivity, euphoria upon completion, adjustment or re-entry issues, response-shift bias, etc.).

Once an understanding of these confounding variables is obtained, it should be possible (to some degree) to assess the level of change and growth in learners and to be able to distinguish perceived learning from genuine learning (Schwartz, 2012). With these guidelines in mind, Schwartz (2012) encourages instructors to return to their reasons for assessment, and to specifically consider why there is an

assessment, what is to be assessed, what the broad goals are, and how the assessment results will be used. She suggests using a simple model proposed by Qualters (2010):

1) Input: Assess student knowledge, skills & attitudes prior to the learning experience;
2) Environment: Assess students during the experience;
3) Output: Assess the success after the experience.

This model appears suitable for use in both the design phase and upon completion of EBL activities. Considering the potential impact of confounding variables, they should help to guide learning designers through the assessment cycle of a course. A further aspect that concerns the student-centered approach of EBL and is the design of assessments. Wurdinger (2005, p. 70) suggests three ways in which students can conduct self-assessment:

1) Student-involved assessment: students choose what criteria will be used to assess their work, or they can help to create a grading rubric.
2) Student-involved record-keeping: students keep track of their work, for example a portfolio or diary.
3) Student-involved communication: students present their learning to an audience, such as with an exhibit or conference.

Finally, when designing assessment strategies students should be encouraged to reflect on their primary reflections. Instead of only assessing direct reflections resulting from the contents or activities, there should be a secondary goal of reflecting on the larger goal or project of the course. This can be achieved through a cycle of primary reflections with a view to a secondary reflection where students reflect on their first reflections in order to yield deeper levels of reflection with improved learning (Moon, 2004). Several methods, tools and techniques exist for the assessment of EBL and could include: maintenance of a learning journal or a portfolio; presentation on what has been learnt; essay/report on what has been learnt (referencing excerpts from reflective writing); self-awareness tools and exercises (e.g. questionnaires about learning patterns); a project that develops ideas further (group or individual); a request that students explore a theory and observe its application; self-evaluation of a task performed, short answer questions of a 'why' or 'explain' nature, an oral exam, and so forth (Moon, 2004, p. 166).

2.3.5 EBL and Online Learning

With the expansion of the internet in educational and work contexts, EBL has been further broadened through the introduction of new methods and tools. Technologies can act as cognitive tools to assist learners in ways to elaborate what they are thinking and to enhance meaningful learning. This perspective is akin to a constructivist approach; however, the nuanced and complex field that adult learning represents necessitates a closer inspection of some of the issues that are at stake. Jonassen (2000, p. 24) summarized ways that learners use technologies as intellectual partners in the learning process. These tools can help learners to:

1) Articulate what they know;
2) Reflect on what they have learned;
3) Support the internal negotiation of meaning making;
4) Construct personal representations of meaning; and
5) Support intentional, mindful thinking.

Advances in learning technologies (Internet and smart device applications) have resulted in increasing sophistication and is apparent in the use of online discussion groups, social networks, learning platforms and MOOCS. Whether these are used in asynchronous or synchronous ways, the role of technology is seen as similar to that of the "instructor-as-resource" to the self-motivated learner: to be a facilitator of learning through the tools and methods it can offer. In contrast to the reported promises of enhanced learning, Huang (2002, p. 31-32) presents seven ways that a constructivist approach, which underpins EBL, can create new sets of problems for the designer/educator using online technologies. These are set out in Figure 13 on the page following.

The aforementioned issues should demonstrate some of the critical considerations inherent in taking a constructivist approach to online learning. Perhaps most prominently, they demonstrate that the increasing sophistication and availability of technology for educational purposes have also brought a number of potentially underlying problems into sharper focus. This discussion further highlights the fact that philosophical and methodological shifts can profoundly affect the design and application of instruction, pointing to a need for learning designers to stay in touch with larger contextual developments in their particular sector of practice.

1)	Education online is about creating a different kind of structure for teaching and learning and can create new constraints in terms of dehumanizing the educational exchange and increasing social isolation.
2)	The quality and authenticity of learning may suffer through the ubiquity of information available on the internet. Since the mere availability of information does not equate or ensure the acquisition of knowledge, both teachers and learners are forced into a position of having to critically assess the information they are presented with.
3)	Through the use of online technologies, the role of the instructor is increasingly shifting toward that of a facilitator of learning. Since learner autonomy has increased, the instructor is encouraged to become more of a consultant, guide and resource provider.
4)	A central issue in constructivism is authenticity, from which flows real-world applicability. This comes to the fore in the fact that instructors normally pre-determine what authentic learning, materials and contents constitute. Since an online learning experience can include access to masses of information through the internet, different types of content may be competing with instructor-sanctioned content, and may in fact be irrelevant, inappropriate, self-serving, manipulative or even malicious. The authenticity and application of learning content to the real-world of the learner has therefore become a new site for disputation, one which can impact the learning process significantly.
5)	The evaluation of learning achievement in the constructivist approach is time consuming and difficult, making it hard to - "objectively" - evaluate learners' learning outcomes. The Deweyan approach emphasizes experience as the starting point of any educational process, making the quality of the learning process paramount. Adult learning theory, in slight contrast, focuses on the learning process and its results, as seen in its stance of "learning to learn".
6)	EBL and constructivism place the learner at the center of the learning experience and despite enormous advances in the design of individualized curricula through the assistance of technological tools, the educational promise has been slow in delivering real benefits in the area of individualized learning.
7)	There might be an underlying competitive dynamic present in the simultaneous promotion of collaborative learning (social constructivism) on the one hand, and the emphasis on individual learning on the other. Concurrently managing these somewhat opposing objectives in the learning process may increase the management complexity for the facilitator/instructor.

Figure 13. Issues in designing online learning in the constructivist approach

2.3.6 Dilemmas and Disputes in EBL

The preceding discussion regarding the utilization of online learning in the constructivist paradigm implied that EBL remains somewhat controversial. Andresen et al. (1995) highlight two basic contentious issues, both essentially related to the complexities of human learning. In a nutshell, these issues refer to the uncertainty, unpredictability and indeterminacy inherent to the learning experience.

1) The first issue relates to learning as a site of disputation: learning is a private experience, remains an intensely personal and internal mental experience and creating instruments that are capable of measuring these unique complexities are yet to be devised (Gosen & Washbush, 2004). This observation goes to the heart of EBL since its methodology is per definition learner-centered and uses the learner's individual qualities to further learning. EBL capitalizes on the subjective experience, seeks to enhance personal development and in fact, recommends learner self-assessment as a tool for tracking learning gains. In contrast, so-called 'objective' assessments and the measurement of learning gains are inevitably linked to institutional requirements for providing scores and achievements. Furthermore, these achievements are often linked to established disciplines or fields of study that require certain sets of knowledge in terms of standards for accreditation, which might also be outside of the degree-bestowing institution. The criticism that EBL has received therefore relates to the confidence with which assurances of adequate, coherent and appropriate assimilation of the relevant bodies of knowledge have been imparted to learners if, for instance, they were actively involved in the negotiation of the whole learning curriculum (Andresen et al., 1995).

2) A second issue is related to the unknown and unpredictable element that EBL often explicitly aim to cultivate in order to extend, deepen or problematize learning for the participant so as to enhance the learning experience. Andresen et al. (1995) point out that the emphasis on new experiences might take learners beyond their personal level of comfort and might thus be uncomfortable, unwanted, distressing or even dangerous. Since EBL theory suggests learning by doing as the fundamental approach, instructors might also neglect adequately informing their learners in advance in the belief that such a forewarned introduction to the activity could prejudice the desired outcome of the EBL activity. It should however be clear that there are cases where such forewarnings

are necessary or required, such as laboratory experiences, field trips and adventure training. Obviously, there are also legal responsibilities for health, safety and physical welfare involved in some of these activities. Andresen et. al. (1995) points out that as yet, a widely accepted code of ethics for EBL does not exist. Obtaining informed consent, using written learning agreements and negotiating explicit ground rules where learners can opt out of activities are examples of ways to address such ethical concerns.

In summary, this discussion highlighted some of the dilemmas in validating the effectiveness of EBL. The essence here lies in the fact that learning remains an intensely personal and internal mental process; and, to create an instrument that is capable of effectively capturing this unique complexity remains a challenge. However, the established level of acceptance that the EBL methods enjoy in various fields, as well as the agreement amongst practitioners that supports its satisfactory utilization, points to a verified credibility for continued use in education (Gosen & Washbush, 2004).

2.3.7 Concluding thoughts on EBL

Tracing the fundamentals of EBL, the preceding discussion highlighted its diverse origins and current interdisciplinary applications. Although EBL is an essentially complex approach, it was identified as a fundamental aspect of learning through its integral connection to cognition as part of the human experience. In line with EBL's broad application to educational interventions, the current investigation adopted a working definition of EBL as: "... the sense-making process of active engagement between the inner world of the person and the outer world of the environment" (Beard & Wilson, 2013, p. 26). Expanding on the characteristics of EBL, the discussion highlighted its normative stance toward the educational process, placing the learner at the center of the learning experience and aiming to enhance personally significant learning. EBL draws on learners' previous life experience and employs a context-rooted and stimulating activity-based methodology that engages the learner to participate and reflect on experience in ways that encourages continuous learning.

Further discussion looked at designs for learning through EBL, the role of the instructor in EBL and some of the means and methods, as well as the associated educational problems of assessing the outcomes of EBL. The discussion further highlighted some of the problems associated with online learning in the constructivist paradigm of EBL, concluding with some of the central disputes and

dilemmas that remain in this approach to learning. Despite significant attempts to clearly define EBL and its propounded outcomes, its educational outcomes remain difficult to validate; yet, it is also clear that its ubiquitous application in educational and work-contexts is commonly accepted. As human learning expands in online worlds, EBL and its applications will likely continue to grow.

2.4 Blended Learning (BL)

It is increasingly clear that the 4th industrial revolution, or Industry 4.0, has begun to effect major changes globally. These exponential changes are being caused through the adoption of cyber-physical systems, such as the Internet of Things (IoT) and the Internet of Systems. Together, their impact is changing the ways we live, work and relate to one another. With the accompanying advances in the development of artificial intelligence (AI), there is also a growing recognition that Industry 4.0 will challenge our ideas about what it means to be human. While educational systems have been impacted upon since the 1st industrial revolution, the technologies that came about through computerization in the 3rd industrial (or digital) revolution posed a radical challenge to educational institutions everywhere. At the center of this challenge is the management and flow of knowledge and information, which has traditionally been within the domain and control of teachers, experts and educational institutions.

The radical idea behind Information Communication Technologies (ICT's) is that, similar to biological life forms (including humans), ICT's can process information on their own (Floridi, 2014). Although humans have designed the linked processes, ICT's also now communicate information to each other without human intervention (Dziuban, Graham, Moskal, Norberg & Sicilia, 2018). The profound idea brought about by the 3rd and 4th industrial revolutions is the realization that humans are perceiving the world increasingly in informational terms, and not merely as only physical phenomena (Floridi, 2008). This has meant that developed economies are now increasingly characterized in terms of the value of the information that is generated and how it is applied to engender and systematize yet new forms of progress. The implication of this, as Dziuban et al. (2018, p. 3) observe, is that "… our world is also blended, and it is blended so much that we hardly see the individual components of the blend any longer." In fact, Floridi (2014) posits that the world has become an "infosphere" where humans live as "inforgs".

While computer-assisted learning, online learning and smart applications have delighted and challenged learners everywhere, these same advances are delivering a fierce challenge to teaching paradigms and pedagogical traditions (Alonso, López, Manrique & Viñes, 2005). If the education sector previously exerted much control over the flow of information, the new normal is that education is now in a perpetual state of flux (Dziuban et al., 2018), characterized by assisting and augmenting technologies for learning that have the potential to enhance effectiveness in the dissemination (teaching) and absorption (learning) of information. The breadth and speed with which these radical changes are occurring are however quite problematic.

While learners everywhere enjoy and marvel at the accessibility of knowledge/information and the ease with which it is obtainable, one particular area has struggled to adapt: traditional ways of teaching and the associated pedagogies. Alonso et al. (2005) observed that there is "… a serious dysfunction between the profusion of technological features that are put forward and the shortage or non-existence of teaching principles for e-learning" (p. 218). The resulting gap is an ever-widening area that developments in ID has tried to fill over the years in its unique synthesis of three basic learning theories of behaviorism, cognitivism and constructivism. These theories were covered to some extent in the introductory section of this chapter and the ensuing discussion of EBL. Most relevant for the present discussion however is the effect of the introduction and blending of key instructional procedures with technological aids that are creating profound shifts in the learner-instructor relationship, with obvious and concomitant effects on the individual learning process and the role of the learning/instructional designer.

Before turning to these various effects, it is necessary to define blended learning (BL). Broadly speaking, BL "…combines online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiate instruction from student to student across a diverse group of learners" (Watson, 2008, p. 3). Rather than formulating an exact definition of BL, Dziuban, Hartman and Moskal (2004), in a research brief for EDUCAUSE[9], instead suggested that it should be viewed as:

> … a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning

[9] EDUCAUSE is a nonprofit association that helps higher education elevate the impact of IT. https://www.educause.edu/

possibilities of the online environment… and … should be approached… as a fundamental redesign of the instructional model (p. 3).

These authors recognize a continuum of instructional models that range from fully F2F to fully online. They propose that BL be characterized in the following ways: (1) a shift from lecture- to student-centered instruction in which students become active and interactive learners – a shift that applies to the entire course, including F2F sessions; (2) increases in interaction between student-instructor, student-student, student-content, and student-outside resources; and (3) integrated formative and summative assessment mechanisms for students and instructor (Dziuban et al., 2004, p. 3). In line with this conception of BL as a range of instructional applications along a continuum, Watson (2004) provides a useful description of the range of instructional combinations. It is adapted in Figure 14 below.

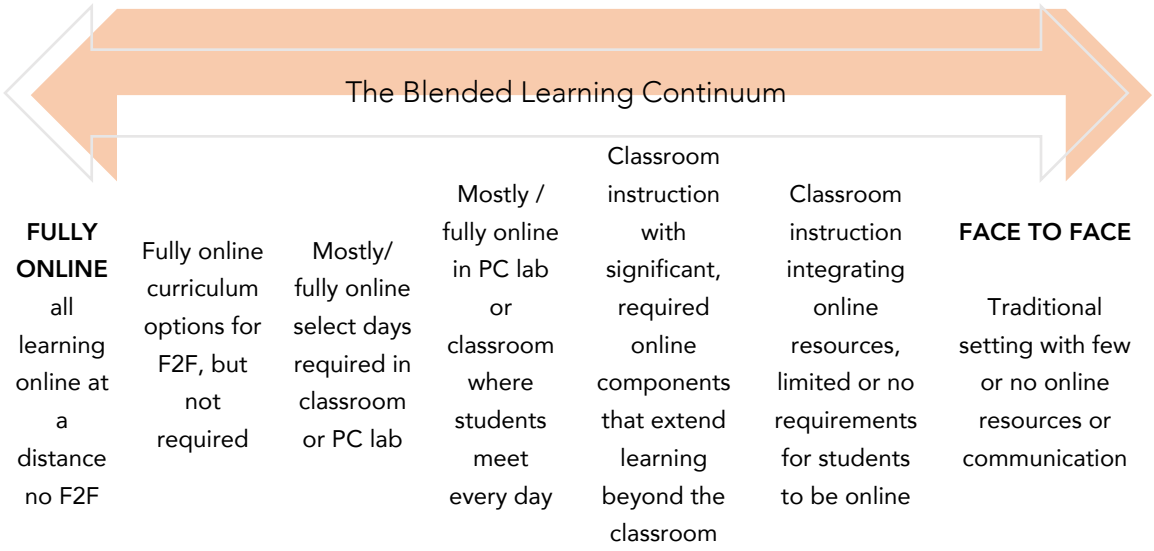


Figure 14. The Blended Learning Continuum

BL therefore represents a shift in instructional strategy and this type of learning is thus a fundamental redesign of the instructional model in that it mixes various event- or experience-based activities, including live e-learning (synchronous), self-paced learning (asynchronous) and face-to-face (F2F) classrooms (Alonso et al., 2005). Just as online learning represents a fundamental shift in the delivery and instructional model of distance learning, BL offers the possibility to significantly change how teachers and administrators view online learning in the F2F setting. Using computers and online learning in education requires a much larger shift in thinking than simply adding a few computers to classrooms.

For the instructor, Watson (2008, p. 16) observes that a true BL implies a flexibility that should go beyond the classroom walls, where students communicate and collaborate with others outside their school and therefore "… requires that teachers approach their role differently, as guides and mentors instead of purveyors of information." These changes also necessitate rethinking the professional development for existing teachers, and pre-service education for future teachers.

A review of BL practices in a number of public schools in the US reveals the following in terms of its application (Watson, 2008, p.14).

1) There is no single isolated type of blended education; as these situations develop over time, it is expected that all the spaces along the continuum (Figure 14) will be filled. In addition, online curricula will evolve to be a seamless and expected component of classroom instruction. Simultaneously, an increasing number of programs that are primarily distance-based may consider include a face-to-face teaching component.
2) Similar to how online teaching is regarded as different than F2F teaching, BL is also unique and requires new methods of instruction, content development, and professional development. This will in turn necessitate adjustments in evaluation and assessment.
3) Access to online content will need to be quick and readily available. Animation, video, simulations and other engaging and illustrative content that can convey concepts visually and dynamically will likely be more effective than either paper or traditional blackboard instruction.
4) The capacity and scope of an LMS might be a distinguishing feature of effective course delivery because BL requires relatively significant levels of web-based communication and content.
5) The great variance in the delivery of BL may present challenges for research and policy. It is not sensible to attempt to fit education into pre-set conceptions based on old methods of teaching and learning. This implies that education boards and policies should allow innovation in directions that may not be foreseeable at present.

The challenges faced by institutions of higher education (HE) are manifold, and Dziuban et al. (2004) observes that BL offers potential for a genuine transformation within academia. Speculations in this regard are that ICT's will alter the university's usual constraints of space and time, transforming how HE is organized and financed, as well as potentially altering its intellectual activities. These are bold assertions that

point toward potential for transformation; past experience however indicates that systems of complexity (such as universities) often need more time to adjust/adapt and might in fact find good reasons for resisting.

In this regard, Dziuban et al. (2004) observes that BL is likely to create complicated interactions among the many components of HE and cites a few cautionary reminders from a systems-perspective (Forrester, 1993): (1) predicting the way that interventions will impact a large institution is virtually impossible; (2) final outcomes are often counterintuitive; (3) unanticipated side-effects (positive and negative) are to be expected and must be confronted. In terms of the various role-players in HE, faculty will need to reassess their expectations of effective instruction, as well as the expectations of their students. Students will have to reevaluate their roles since BL courses require them to take more responsibility for managing their learning. Likewise, at the institutional level, administrators will experience changing role expectations as the management of entire programs are likely to require transformation of practices, particularly in terms of financial allocation and balancing the needs of all participants in a systemic way to that are in alignment with new institutional directions and formats for learning (Dziuban et al., 2004).

In spite of numerous challenges, BL offers a positive potential for HE in that it harbors a transformational energy that can significantly alter expectations for students, faculty and administrators. This process is formative in nature and might be opportunistic but can be effective if the changes are welcomed in ways that facilitate collaboration. In terms of cost and efficiency, BL holds promise for increased financial benefit, but will require institutions to change mindsets that are perhaps still invested in earlier paradigms regarding the goals and purpose of HE. Taking a long-term perspective in terms of learning as a life-long endeavor and working with collaborators and industry partners outside the traditional HE classroom may open up new avenues for future development. Indications are that BL can play a key role in these developments through its inherently collaborative and border-crossing approach to education (Dziuban et al., 2004).

Considering the idea that education is in part the systemic management of information, Rosenberg (2012) observes that when people use specific information to make decisions, or change their point of view/behaviors, that information becomes knowledge. The revolution that the Internet brought about has propelled the online delivery of learning and training to the frontline of innovation. This led, in

part, to the mistaken assumption that web-based learning will one day eliminate and replace the classroom. In time however, the recognition has dawned that it is rather a question of striking a balance between the benefits of online technologies and the value that traditional classrooms can still offer. This appears to be the true nexus of BL.

With this in mind, Rosenberg (2012, p. 164) offers four observations pertaining to the instructional design of learning:

1) Learning solutions may require both an instructional and informational approach; informational approaches may be more appropriate and cost-effective.
2) Most learning (almost 90%) takes place informally, on the job or in daily contexts, whereas the focus of ID is almost exclusively on formal environments. This implies that most opportunities to impact informal or workplace learning are often missed.
3) When including blended options, learning is often driven towards what can be the most expensive solution – training – without first considering less expensive alternatives. By implication then, if the focus is on providing only training solutions, opportunities for the inclusion of non-instructional alternatives disappear and the learning risks becoming inappropriate, thus failing in its original intent.
4) True blended learning, in Rosenberg's (2012) view, crosses the line between formal and informal learning and must recognize that the learning needs of people actually increase as they apply their formal learning/training. This realization implies that the designer of instruction should be looking beyond the mere blending of instructional solutions for learning in particular contexts. Instead, ID should be taking an extended perspective by embracing knowledge management and performance support. Doing so would widen the narrow definitions of e-learning and online learning to "… include a much wider array – or blend – of tools and approaches "(Rosenberg, 2012, p. 164).

In essence, education is about imparting information and developing (critical) thinking skills through the acquisition of knowledge. Industry 4.0 will require workers in entire sectors of economies to be able to access and acquire the skills and means to manage information, such as analyzing data and building sets of knowledge based on the events and patterns that the flow of information creates. It may very well be that BL is one of the central catalysts (Watson, 2008) for change within education. As

online learning expands – whether inside or outside the traditional classroom – it seems very likely that in the information age, 'blended' will become the new standard in education.

2.5 Concluding ideas from ID&T, EBL & BL

The preceding review of the field of ID&T, EBL and BL aimed to cover the fundamental principles from each of these fields and further attempted to explore some of the current trends in the respective research areas. ID&T was characterized as a cohesive discipline, offering several practical models and distinctive theoretical support to the designer of learning. The ID&T models referred to here (ADDIE, ARCS and the SAM) have been well-used in the field and were selected for application in this project to provide a structured foundation for systematic and practical use, but with a strong consideration toward maintaining flexibility for creative experimentation. These models from ID&T therefore provide a necessary systematic element to the enquiry, given the exploratory nature of the investigation and its relatively open-ended research questions.

While EBL offers a broad and varied depth of experience to the educational practitioner, the review here indicates that it escapes a definitive conceptual definition. This is perhaps a result of its intimate and irrevocable link to human (learning) experience, which ultimately rests in the mind of the learner and makes it impossible to pin down. Nevertheless, the EBL field offers a strong record of experience and a multitude of applied practices that can be valuable to any practitioner, no matter their discipline. The value of EBL's basic conception and the model it provides for the learning designer remains intuitively true in application – for both learners and instructors. With the incursion of technology into the educational arena, it seems very likely that EBL will continue to play a central and valuable role. Likewise, the review of BL indicated a fast-developing, if recent expansion of its understandings and applications in the field of human learning. It is clear that in the information age BL will become the new normal in educational practice and it seems increasingly necessary that pedagogical practices be updated to reflect the reality of BL.

Although the preceding discussion gave only brief consideration to a few of the relevant theories and models in the field of human learning, their combined effect, upon reflection of their respective contributions, provides a solid theoretical basis to

support the current investigation. Given that most of these theories and models share common foundations in psychological, educational and philosophical traditions, their intuitive compatibility are perhaps not surprising. Drawing lines between the basic tenets of EBL and the ARCS model for instance, it is not difficult to connect learner curiosity and interest to the actual experiences of learning through doing and the feelings of frustration and joy that comes along through practice and eventual mastery. Before continuing with a more expanded discussion and the synthesis of these theoretical ideas into the framework that was utilized in this investigation, a focused summary of several ID principles (Branch & Merrill, 2012) are provided to conclude this chapter (Table 5).

Table 5. Design principles and their description

Design principle	Description
1. ID is student centered.	Learners and their performance are focal points. Strategies and options for achieving this include teacher-facilitation, self- and group study, technological aids of various kinds as well as the mixing of these elements. The emphasis however is on a paradigmatic shift from teaching to learning.
2. ID is goal-directed.	Well-defined project goals that include and reflect client/audience expectations not only at the outset, but also during and after the intervention.
3. ID focuses on meaningful performance.	Learners are prepared to perform meaningful activities that includes solving authentic problems that can be related to or applied in real-world contexts.
4. ID assumes outcomes can be measured in a reliable and valid way.	Assessing performance relies on the creation of valid and reliable assessment instruments and the designer should ask how the knowledge and skill might be applied to enhance validity, while ensuring a sense of consistency across time and individual participants.
5. ID is empirical, iterative and self-correcting.	Data is central to the ID process and its collection starts at the outset of analysis, continuing through implementation and completion. Data should provide a rational basis for decision-making and it is accepted that its collection follows the curvilinear cycle of the ID process.
6. ID is typically a team effort.	Depending on the size of the project, several participants, with a variety of specialized skills are usually involved in the ID process.

The summary delineates a number of principles that were kept in mind during the process of instructional development and learning design for this investigation and draws on the work of Branch & Merrill (2012, p. 10-12). Although fairly general, these six principles can be considered as basic to the design process and assists the learning designer in keeping a focus on the central aspects of 'good' design. As described in Table 5, these principles can be seen to retain a focus on the learner, maintains learning as a processual activity, continuously incorporates technological support, allows for the flexible role of the instructor, takes care of assessment and evaluation and stresses cyclical, self-correcting iteration as a driver of the design process. Following this summary, discussion now turns to the final section of this chapter, which represents the key organizational feature of this investigation, namely the framework for enquiry that guided and supported the educational interventions and the resultant learning outcomes and data collection process.

2.4 Designing Instruction for CQ: A theoretical synthesis

This section presents and describes the basic framework for this investigation. As such, it details the construction of an investigative framework that synthesized all the relevant theoretical aspects as discussed in this chapter in a unique manner. In addition to hosting the relevant theory and models, the frame also represents the organizational structure of the investigation, thus acting as an anchor for the iterative design process and educational interventions, the concurrent research methods and procedures, as well as the cycles of learning outcomes and data production. In other words, the framework formalizes and describes how the theoretical constructs were operationalized, the elements that made implementation possible and the results it delivered. This implies that the framework can be described as both a theoretical and practical method and tool, much like a spade tends to a garden in the hands of the gardener.

To create a basis for investigating the process of ICC learning, a theoretical approach that could support initial and later explorations and allow for future improvements, were considered. These underlying theoretical aspects (as outlined in the previous sections of this chapter) were: the ADDIE approach (Molenda, 2003), the ARCS model (Keller, 1997) and the EBL model. These formed the core of the initial conceptualization, with significant consideration of broad ICC theory. Given that this was a preliminary step, the CQ model and theory was not explicitly incorporated here; mostly to avoid additional complexity at this early stage, but also

to first establish an ID foundation to which broad cultural ideas could be attached in an experimental manner as refinements were introduced.

Perhaps most significant at inception was the impact of the EBL model's (Kolb, 1984) basic structure, which informed and helped set the foundational cycle for the design and subsequent methodology. This model has proven success ratings in intercultural training and learning (Joy & Kolb, 2009; Kurpis & Hunter, 2017), and demonstrated effectiveness in CQ training and research (Barnes, Smith & Hernández-Pozas, 2017; MacNab, 2012; Ng, Van Dyne & Ang, 2009). As a pedagogical approach in university courses, the model has shown support for developing intercultural awareness and effectiveness in student populations (Barnes et al., 2017; Fischer, 2011; MacNab et al., 2012). For current purposes, and as shown in Figure 15, placing the EBL model alongside two ID models (ADDIE & ARCS) allows their individual components to be considered for a potential reciprocal or associative effect.

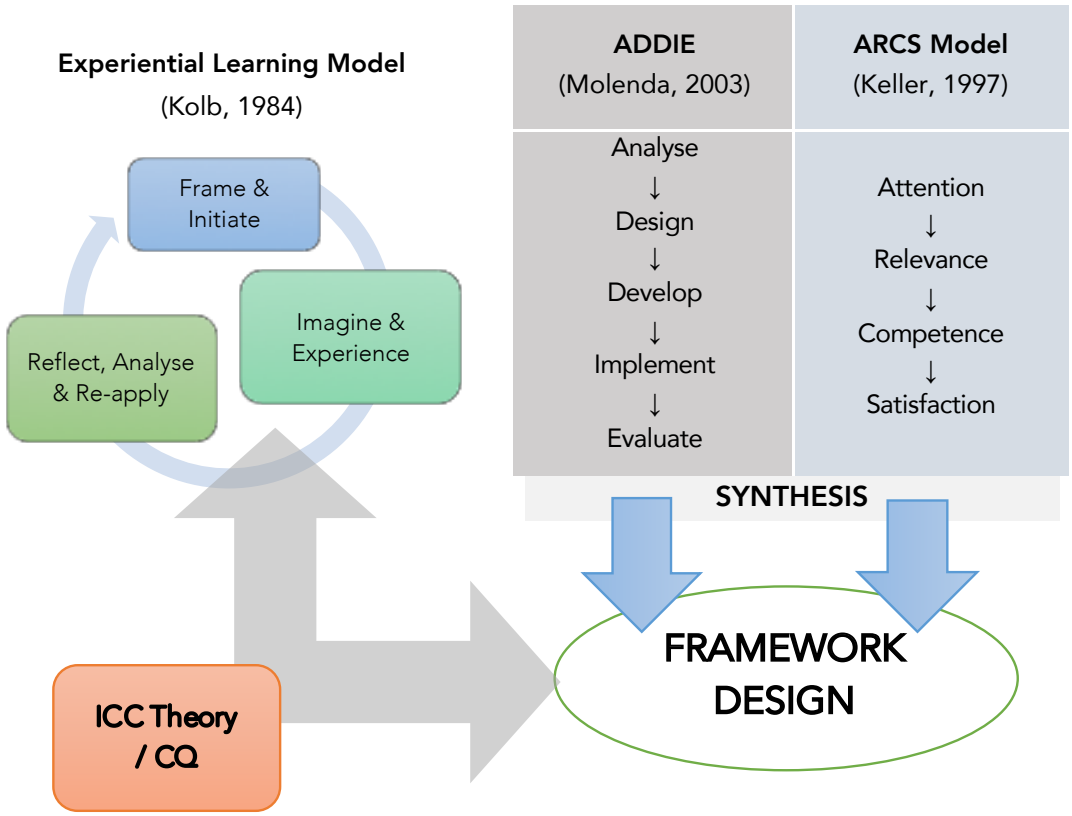


Figure 15. Theoretical synthesis and framework construction for developing ICC

Combining models in this way injects the ARCS model's motivational principles of systematic design on learning (Keller, 1997; Keller & Suzuki, 2004) into the frame, whilst simultaneously keeping track of the broader steps involved in the design process that the ADDIE model advocates. Using the models in conjunction thus helps to sustain an awareness of both the macro- and micro levels of the design process: the ADDIE model broadly acting as an 'organising principle' (Molenda, 2003, p. 36) and the ARCS model ensuring that motivational aspects are incorporated into the learning process. The dynamic nature of the EBL model assists with the overall structure of the framework and was theorized to help sustain an active element for the learning interventions embedded within the proposed instructional design for ICC development. Weaving together the elements of the three models thus guided the design process and enabled a theoretical synthesis that could support additional learning designs for instructional purposes.

Conceptually, the steps of the ADDIE, ARCS and EBL models overlap or link in certain ways that assist the designer in connecting topical content (ICC learning) with steps in the learning process. This understanding formed the bedrock of the synthesis. To illustrate using the ADDIE model, the design→ develop→ implement- sequence ties comfortably with the competency building component of the ARCS model if a link is provided through relevant learning content. A learning design sequence to develop CQ can thus be constructed as follows:

> *designing, developing and implementing (following ADDIE) → a culturally informative learning moment (EBL) can directly impact → cognition and behaviour (in CQ terminology) to → effect competency building (using ARCS terminology), thus supporting → the development of ICC or CQ.*

Following this approach consistently, it was possible to synthesise ideas from ICC and ID&T, resulting in the framework as outlined above. The EBL model informed the basic organisation of the frame by anchoring corresponding steps in each of the relevant models, thus creating a dynamic but integrative effect. The resultant synthesis thus supported later design products and additions. Notably, these involved the first prototype multicultural workshop (Phase II, Step 3, described in Chapter 4), later to be followed by a course design that incorporated CQ theory and the BL model, which were implemented in turn to became the iterated versions of the project (Phases III – V, as described in Chapters 5 & 6). Having presented the theoretical support for this project and its framework of enquiry, the following chapter turns to the research design and methods that enabled the investigation.

CHAPTER THREE

Research Design and Methodology

Prologue

The theoretical and philosophical underpinnings of this project discussed in the preceding chapter outlined some of the theories and models in the field of intercultural competence (ICC). Further to this, experience-based learning (EBL) and theoretical approaches and models from the field of ID&T were explored as potential means to inform the design for the learning and development of ICC, through an application of CQ theory. Two relevant observations, identified in Chapter 1, assist in organizing the investigation: on the one hand, the need for focused educational interventions to cultivate ICC, and on the other, a (re)consideration of the learning designs behind the technologies, materials, methods and pedagogies that could cultivate ICC specifically, but would also infuse – in terms of intercultural sensitivity and adaptibility – educational and instructional approaches in general.

These related issues and their underlying theoretical and research strands enabled a framework for a structured enquiry – formulated in a set of research questions – to explore how learning designs and pedagogical support can be developed through a focused lens of CQ theory. The stated proposition is to explore how ID&T can inform ICC to create a pedagogy for the development of CQ. This chapter presents the methodological approach followed to help realize this endeavor.

It is noteworthy to mention here that the aforementioned framework, from a methodological point of view, is treated here as an investigative method/tool, but with the understanding that it remains a complex theoretical construct that involves a series of underlying, requisite steps in order to be realized. For this latter reason, the original synthesis and framework was considered mostly a theoretical exercise and therefore contained in the previous chapter. The first application of this framework (representing Phases I, II & III) was published and is presented in detail in Chapter 4.

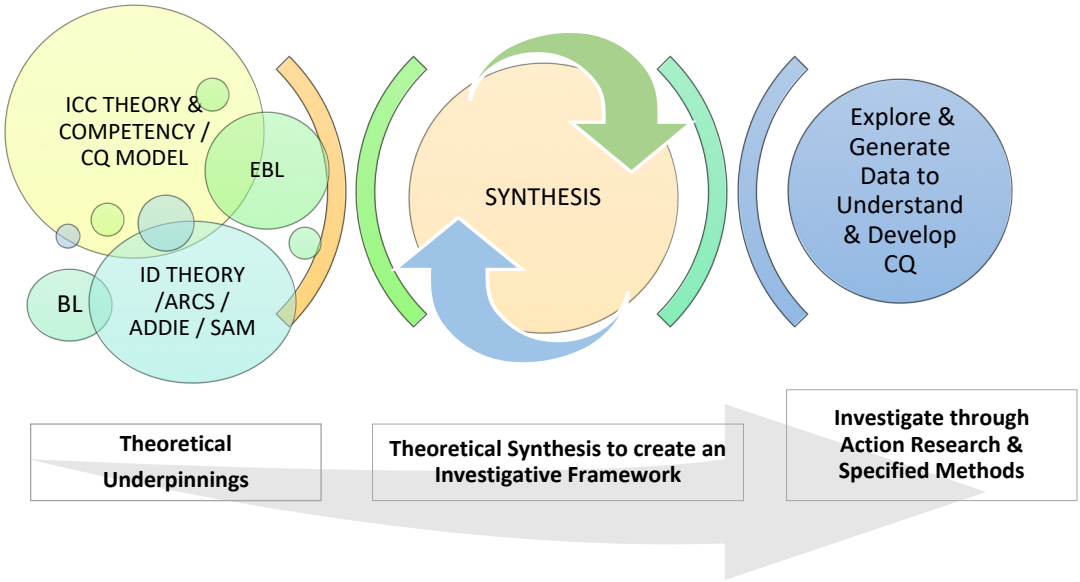


Figure 16. A dynamic overview of the methodological approach

3.1 Introduction

This chapter outlines the process of this investigation by explaining, in broad, the methodological steps that underpins the explorative process. Figure 16 depicts a dynamic overview of the investigative approach with its constituent elements. In particular, this chapter also presents the reasoning behind the investigative decisions and actions. The purpose for these methodological considerations resides as much in the theoretical/philosophical roots of the disciplines they draw on as in the reasons for their practical application. Simply put, the contention is that theory realizes its purpose through practice, and this chapter explains the reasons behind the chosen stance and the strategies, and to some extent, the methods and tools that were utilized.

To help orientate the reader, the diagrammatic overview of the project with its methodological steps from Chapter 1 is reproduced here in Figure 17. A summarized description of each research step follows in Table 6. Note however, that the details

and discussion of research steps and procedures will be presented in Chapters 4, 5 and 6 respectively, in keeping with the processual development of the investigation.

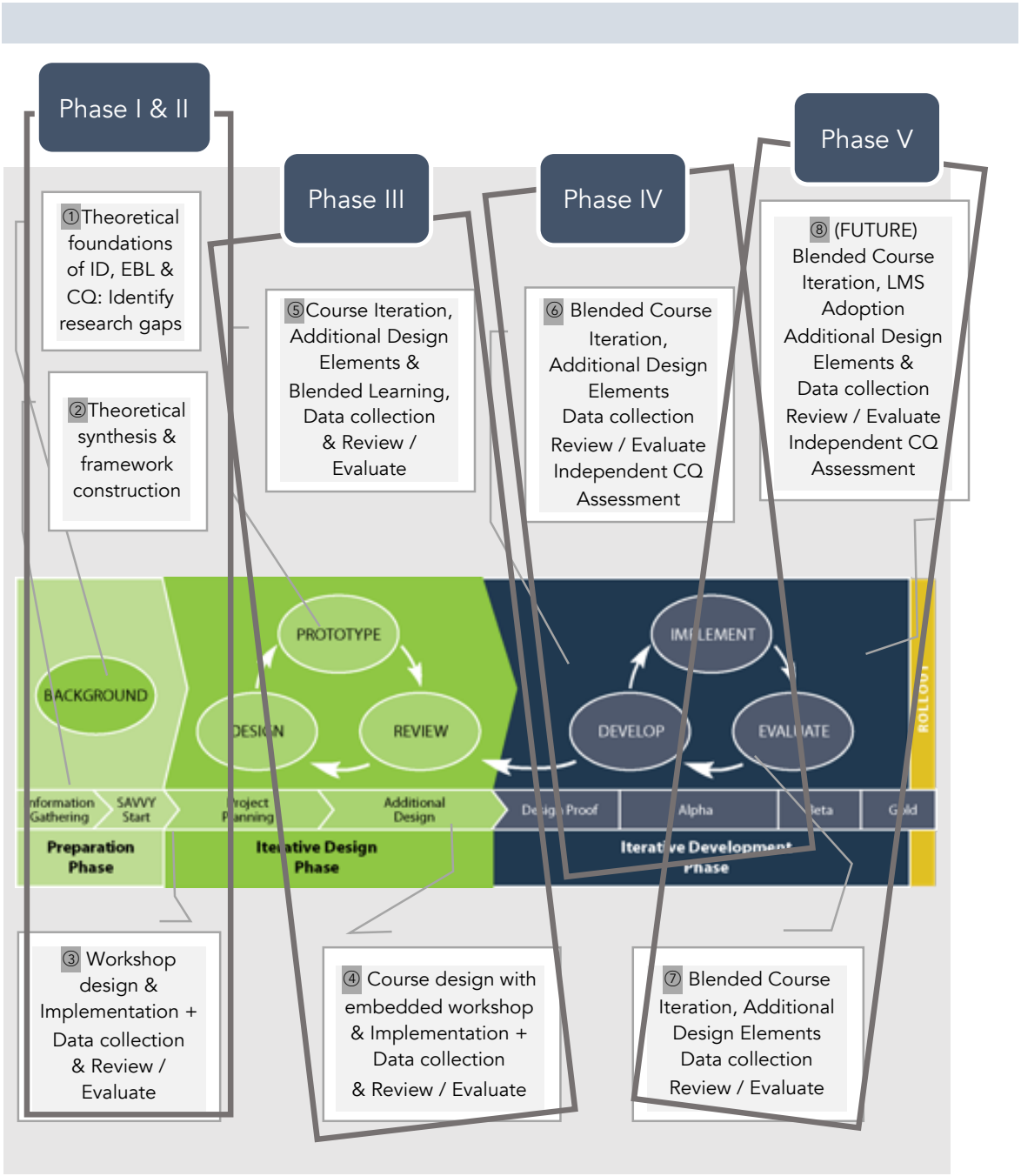


Figure 17. An overview of the investigative process

As indicated, this investigation moved through five overlapping phases (Phases I-V) that included eight broad methodological steps (Steps 1 - 8). Table 6 summarizes each of these steps to help explain the methodological rationale.

Table 6. Project overview: Research steps and their rationale/description

Phase	Research Step	Rationale & Description
I & II	① Theoretical foundations of ID, EBL, BL & CQ: Identify research gaps.	⇒ Build an understanding of relevant theories. Identify areas where they converge, overlap or where gaps are evident.
	② Theoretical synthesis & framework construction	⇒ Based on ①, synthesize and integrate relevant theory to create a framework to organize, anchor and guide the investigation.
	③ Workshop design & Implementation - Data collection & Review / Evaluate	⇒ Based on ②, as a "savvy start", design and conduct a multi-cultural workshop for the purpose of an audience analysis, framework testing and general data collection.
III	④ Course design with embedded workshop & Implementation + Data collection & Review / Evaluate	⇒ Following ③, design & build a 15-week course with an embedded workshop to develop CQ. ⇒ Collect data, evaluate framework application & course components. Review results, make adjustments, refine design elements and reiterate.
	⑤ Course Iteration, additional design elements & BL, data collection & Review / Evaluate	⇒ Building on ④, repeat course, expand BL format, introduce additional design and course elements. ⇒ Collect data, evaluate framework application & course components. Review results, make adjustments, refine design elements and reiterate.
IV	⑥ BL course iteration; additional design elements; data collection. Review & evaluate, independent CQ assessment.	⇒ Following ⑤, repeat blended course, expand BL format, introduce additional design and course elements. ⇒ Collect data, evaluate framework application and course components. Review results, make adjustments, refine design elements and reiterate. ⇒ Obtain independent evaluation.
V	⑦ BL course iteration, additional design elements; data collection. Review / Evaluate	⇒ Following ⑥, iterate blended course, consider additional design elements & course components. ⇒ Collect data evaluate course components. Review results, make adjustments, refine design elements and reiterate.
	⑧ (FUTURE) Blended course Iteration, LMS adoption; Additional design elements & data collection; Review / Evaluate; Independent CQ assessment.	⇒ Building on ⑦, consider options for future LMS adoption and associated design adjustments. ⇒ Longitudinal follow-up with previous course participants: to interview and repeat CQ assessment. ⇒ Collect data with a view to understand learning analytics.

As noted in Chapter 1, the investigative process evolved over a period of roughly 3 years and selections of research results were published in a series of papers. These publications and their associated content and all the relevant information are presented and discussed as follows:

- Chapter 4: Phase I & II (Steps 1 – 3)
- Chapter 5: Phase III (Steps 4 -5)
- Chapter 6: Phase IV (Step 6) and Phase V (Step 7 – 8)

The ensuing discussion details the investigative process in terms of its methodological stance, approach and strategy.

3.2 Methodology as a process of investigation

In conducting a research investigation, a researcher needs to consider three basic elements for the design of the guiding research framework: (1) philosophical assumptions about what will constitute the relevant knowledge, (2) the general procedures of research, also referred to as strategies of inquiry, and (3) methods, or the detailed procedures of data collection, analysis, and writing the interpretation (Creswell, 2003). The current chapter emphasizes point (2), namely the strategies followed in the enquiry to help illuminate the procedural activation and flow of the investigative process.

Strictly speaking, 'methodology' refers to the theoretical rationale or the set of principles that justify the research methods appropriate to a field of study. A methodology can therefore not be derived from research but instead has to be grounded in some pre-existing theoretical knowledge that is usually referred to as 'philosophy' (Somekh & Lewin, 2014). Since these underlying theoretical strands were explored in Chapter 2, the emphasis here shifts to a consideration of the methodical activation, theoretically and to some extent, practically, of the underlying principles in the investigation.

This section therefore considers the main orientation, which involves the context, the researcher and the participants. It further considers the research strategy employed by presenting its explorative and observational stance that was supported by a sequentially applied, action-research mixed methods model, anchored in the successive processual model (SAM). The research methods utilized were mixed: qualitative, quantitative and observational, often relying on principles

suggested by EBL and BL models, as well as ID&T theory. The tools and procedures emanate from these methods and models and include a wide array of practical activities and active research tools to help generate, observe, reflect, revaluate and iterate in an ongoing cycle. As noted, this chapter presents these methodological approaches and tools in broad, and they are taken up again in greater detail in later chapters to exemplify the practical realization.

3.2 Framing the investigation

A methodology is irrevocably tied to its theoretical foundation, but both these elements are contained within a specific setting or environment, which forms the context of the investigation. Much as a theory informs the method and its application, the context of an investigation may be an impactful, if not a determining influence. Before proceeding with a description of the general methodological process, it is therefore important to orientate the reader by providing a consideration of the contextual information within which the project is situated. This orientation is in line with a notion in the social sciences that the environment that a researcher is placed in cannot be divorced from the research s/he conducts. This has important implications for the investigator as an individual, since s/he is centrally placed as instigator, driver and observer-participant of all the research components. As a result, there are particular advantages and some limitations to this contextualized stance that are considered in the ensuing discussion.

3.2.1 The Research Context, Investigator & Research Stance

Research in the humanities inevitably involves a consideration of the context it is situated in, and the participants that are involved. Central to the current investigation are the rippling effects brought about by globalization and its technological advances. As highlighted in Chapter 1 and 2, the resultant effect on the internationalization of learning has increased the movement of students across continents, cultures and institutions of higher learning. In Japan, where this investigation is situated, activities involving internationalization have typically included an "outbound" student cohort, that is, programs for local students that are geared toward activities that happen abroad or across borders (Knight, 2004). In recent years, Japan has seen a slight increase in "inbound" programs, that is, programs that occur on the home/local campus and involve both foreign (inbound) and local students (Mori & Takeuchi, 2016).

The present investigation draws on both these identified groups: local students that aim for short and/or long-term study sojourns abroad, as well as foreign students who join similar programs at their host institutions to study at local Japanese institutions. Since 2010, and following policy introduced by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT), local universities have made various attempts to capitalize on the increases in international exchange. The resultant – if slow – uptake of these programs is having a diversifying effect on Japanese campuses and this trend was taken as one of the core inspirations in the current study. In essence, the project adopted the contention that the process of learning to communicate efficiently inter-culturally can enable students to gain and develop a set of soft skills that would cultivate in them a global mindset (Lovvorn & Chen, 2011), or – as framed in this project – develop their CQ.

The author of this project is employed at a local university in Japan as a lecturer in the faculty of Arts and Regional Design. Although my duties include teaching English to both undergraduate and graduate students, further responsibilities include leading groups of students on short-term study-abroad immersions, teaching and preparing students for longer study abroad programs, as well as designing and teaching courses that combine local and foreign students with a stated purpose of increasing opportunities for intercultural learning. I am therefore directly involved in the design of curricula, courses, activities and materials that can be organized under the broad umbrella of 'global education' and 'internationalization' in higher education.

Given this context as background to the study of ICC, it was important to consider an appropriate stance toward the investigation at the inception. Since conducting an investigation within this context would inevitably mean the adoption of a dual role (instructor/researcher), it was a question of accepting that I would fundamentally occupy an intimate and actively involved position in the project as a learning designer-instructor, as well as participant-observer. This is a complex role that has increasingly gained recognition in academic research and research design literature in the social sciences and Somekh & Lewin (2014) suggest that action research is suitable in these type of research enquiries. Its basic approach is summarized well in the following quote (Noffke & Somekh, 2014, p. 94):

> Action research directly addresses the problem of the division between theory and practice, and assumes that the two are intertwined, with neither at a more valued position. Rather than research being a linear process of knowledge production that is

later applied to practice settings, action research integrates the development of practice with the construction of research knowledge, including theory, in a cyclical process. Practice generates knowledge, including theory, and theory can be tested in practice, not just applied.

Noffke & Somekh (2014) further explain that instead of research being on a social setting, and the people within it, it is research from the inside of that setting. Research can be carried out either by the researcher working in collaboration with the participants, or by the participants themselves. Placing the researcher central in the study of phenomena also implies the important function of acting as participant in the generation of (new) knowledge. There is a wide range of approaches within action research, which Noffke (1997) categorizes in three dimensions: (1) the professional, which focuses on improving what is offered to clients in professional settings; (2) the personal, which is concerned with social action to combat oppression, and (3) the personal (not necessarily separated from either of the preceding), which is concerned with factors such as developing 'greater self-knowledge' and 'a deeper understanding of one's own practice'. Eilks & Markic (2011, p. 156, from Grundy, 1982 and incorporating Masters, 1995) provides a useful description of the different modes in action research, which is adapted here in Table 7.

Table 7. Three modes of action research

Technical Action Research	Practical (Interactive) Action Research	Emancipatory Action Research
The goal here is to test a particular intervention based on a pre-specified theoretical framework. Collaboration between the researcher and practitioner is technical and facilitatory. The researcher identifies the problem and a specific intervention, upon which the practitioner is involved, and they agree to proceed with the intervention.	Brings together the researcher & practitioner to identify potential problems, their causes & potential interventions. The problem is defined after dialogue between researcher & practitioner, reaching for a mutual understanding.	Promotes emancipatory praxis & cultivates a critical consciousness in the practitioner, which exhibits itself in political & practical action to change. It does not begin with theory & ends with practice; rather, is informed by theory. Confrontation with theory provides the initiative to undertake the practice. The dynamic relationship between theory & practice results in the expansion of both theory & practice during the project.

This description provides a succinct summary of the actions and collaborations involved between the researcher and practitioner. For purposes here, both the roles

of researcher and practitioner roles were performed by the author. This implies that the description of **practical, or interactive action research** (Table 7) is the closest fit for the role of the author/investigator. In a sense, although the author assumed the main role of researcher, his surrounding community – the teachers and supervisors of the GSIS community – performed roles of observers, consultants and distant collaborators. This gave the investigative process a valuable reflective dimension that occurred on a meta–level. It is also notable that, in line with the underlying dynamic of action research theory, these three modes of action research are not clear-cut types but may flow forward/backward as the process cycles.

Further to this outline of the three modes of action research, Eilks & Markic (2011, p. 156) apply this understanding to science teacher education and provide the following description (Figure 18). This schema is adopted here to help illustrate the role of the researcher/instructor in this project and to explicate the active and participatory nature of the role. It also demonstrates the dual role of teachers/instructors when they act upon identified problems, suggest innovation to change or improve the situation and proceed to participate in its application. This understanding appears particularly suitable for instructional designers in their role as learning innovators.

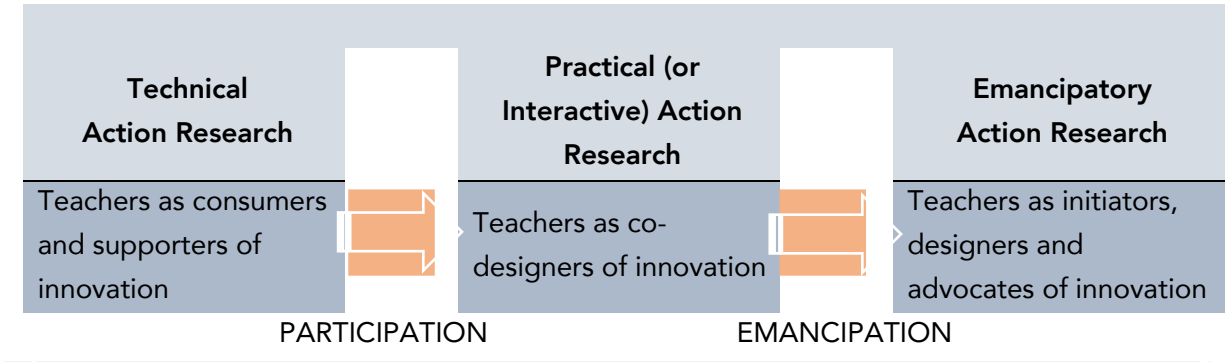


Figure 18. The structural development of action research

To help elucidate the ideas from an action research perspective, the following set of principles (based on Somekh & Lewin, 2003; Brydon-Miller & Maguire, 2003 and Noffke & Somekh, 2014) are summarized in Table 8. These should clarify the stance of the current investigator and helps to explain some of the methodological decisions taken during the investigative process. In consideration of the discussion of

EBL in the previous chapter, it is notable that a number of links can be drawn between EBL and the stance that action research advocates.

Table 8. Principles that inform action research

1)	Action research is closely linked to reflective practice, which has its roots in the work of Dewey (1933) and Schön (1983). It also means that reflection can lead to the testing of hypotheses in action.
2)	Action research is based on a continuous consideration of data collected during practice in ways that can help to distance the practitioner by considering data as another point of view on practice. This can assist in the triangulation of data.
3)	Action research do not always start with a clearly defined research question, and the driving force for the investigation might be a desire for innovation or change. Through the process of designing 'actions' or interventions, there is a deepening of participants' understanding of their situation(s) and the development of new ways/strategies to cultivate improvement.
4)	Following on (3), action research is always rooted in the values of participants and will adapt or develop in different ways depending on the social group.
5)	Action is central to this research approach, which implies that the methods used (and the intention behind their design), are directly influenced by this stance.
6)	For many researchers who choose this model, there is a further element in the design of research, namely the improvement of the overall social situation in which practices occur, which can include both local and global intentions.
7)	For many participants, action research will involve a personal dimension that requires rethinking one's actions in the world and revaluating their worth and effectiveness.
8)	Research emanating from this stance tend to generate new knowledge through its emphasis on balancing the relationship between theory and practice, thus producing both popular and academic forms of knowledge.

Brydon-Miller & Maguire (2003) observe that given its focus on local contexts and situational knowledge, action research often generates good validity (in contrast to other forms of social research). One of its weaknesses, however, is its localism and the difficulties in intervening in large-scale social change efforts. This means that most action research takes place on a case by case basis, which can be effective in a local situation but fails to extend beyond that local context (Brydon-Miller & Maguire, 2003). Further to this, action research' preference for learning from experience and its pendant for engaging uncertain and/or complex situations prompted Ackoff (1999) (cited in Brydon-Miller & Maguire, 2003) to use the term "messes" to describe this approach. He defines 'messes' as complex, multi-dimensional, intractable,

dynamic problems that can only be partially addressed and partially resolved. These issues have clear implications for the generalizability of research findings.

Nevertheless, as Brydon-Miller & Maguire (2003) note, action research goes beyond the notion that theory can inform practice, to a recognition that theory can and should be generated through practice. It recognizes the notion that knowledge is socially constructed and recognize that all research is embedded in an existent system of values, and thus often seeks to tackle unjust and undemocratic economic, social and political systems and practices.

Action research therefore meets the test of action, something not always true of other forms of social research. Brydon-Miller & Maguire (2003) observe that conventional research traditions are concerned with objectivity, distance, and controls; action research in contrast, takes particular notice of relevance, social change, and validity tested in action by the most at-risk stakeholders. The active element contained in this form of research gave additional impetus to the present investigation since it matched well with the constructivist element present in EBL. This dynamic support provided ongoing stimulation and gave the project momentum.

In conclusion, action research refers to the investigation of 'messy' problems, but very much implies a specified, strategic way of conducting research. It aims to bring together action and reflection, theory and practice, in participation with others, in the pursuit of delivering practical solutions to problematic situations. In consideration of the current project and its explorative, developmental process, action research as an overall stance and strategy therefore holds particular promise for taking care of the uniqueness of local circumstances and the position of the researcher-participant. Since action research specifically seeks to support individuals and to help their communities flourish, it means that in a broad sense, action research is regarded as work in progress. This aligns well with the intention behind this investigation in its stated goal of cultivating ICC in undergraduates through an exploration and application of learning designs that would foster the growth of CQ.

3.2.2 Research strategy: Breaking down the steps

The problem that was presented in Chapter 1 converged around the issue of a lack of a comprehensive theory for ICC development, which was understood to be one of the main reasons for the identified lack of pedagogical support to develop

CQ. This understanding invited a suggestion that the field of ID&T might offer potentially creative ways for investigating how ICC can be developed, and that doing so would in turn generate information which could be applied to cultivate the CQ of university students. This knowledge in turn, would be usefully applied to construct a pedagogy for CQ.

In reference to this problem statement, Cresswell (2003) advises that a problem which reflects an inconclusive state of affairs in observed phenomena indicates that an exploratory approach might be best suited. This type of approach allows for a somewhat open-ended exploration and is appropriate for research studies that might need to draw on diverse sets of theories, are looking to bridge gaps in available information/knowledge and can be applied to investigate a variety of contexts with an array of different tools and methods.

Given that the literature review indicated some gaps in the available research, especially related to the central issue in the understanding of, and subsequent learning design for education and training in CQ development, the current project adopted an exploratory stance in approaching the stated problem. This stance gave rise to the relatively open-ended research questions formulated in Chapter 1. Following on from the adoption of this open-ended, exploratory stance, a second consideration advocated by Creswell (2014) is the utilization of an investigative methodology that helps to continuously generate information that addresses the stated research questions. This is a key consideration, since it encapsulates how answers can be found, and it basically involves the operationalization of the method.

Given the open-ended nature of the current enquiry, a decision had to be made about the manner that the investigation was to proceed if it was to continuously generate data that would address the stated research questions. Traditional methods of scientific enquiry usually involve choosing a quantitative, qualitative, or mixed methods (a mix of qualitative/quantitative methods) approach (Creswell, 2014). Since the project was essentially explorative, it was necessary to generate and gather as much information as possible about the studied phenomena. A decision was therefore made to use a mixed-methods approach. This approach entails the use of both qualitative and quantitative methods, but in line with the overall open-ended inquiry, the emphasis remained on the ways and means that would help generate further questions, while continuing to supply potential answers (in the form of data) to those questions as the investigation progressed.

Creswell (2014) observes that early ideas about the value of using multiple methods emerged on the recognition that all methods contained some bias and/or weaknesses, and that the collection of both quantitative and qualitative data could potentially neutralize the weaknesses of each form of data. The use of a mixed methods approach therefore implies the existence of a relationship between quantitative and qualitative methods of enquiry. Creswell (2014) stresses that this remains an emergent field of research, with new ways to combine methods from the different models being suggested. For instance, a means for seeking convergence across qualitative and quantitative methods was developed and termed triangulation (Jick, 1979).

Ways to expand mixed methods include: (i) comparing qualitative and quantitative databases for accuracy (validity); (ii) one database could explore the questions generated by the other; (iii) one database could lead to developing better instruments if not well-suited for a particular sample; and (iv) one database could build on other databases, or alternate with others in a longitudinal study (Creswell, 2014). Although several designs exist in the mixed methods field, three types are relevant for consideration here (Creswell, 2014, p. 44-5). These are summarized in Table 9 below.

Table 9. Three types of mixed methods

1)	Convergent parallel mixed methods involve converging or merging quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. In this design, the investigator typically collects both forms of data at roughly the same time and then integrates the information in the interpretation of the overall results.
2)	Explanatory sequential mixed methods involve first conducting quantitative research, analyzing the results and then building on the results to explain them in more detail with qualitative research.
3)	Exploratory sequential mixed methods require the reverse sequence from the explanatory sequential design. It involves beginning with a qualitative research phase by exploring the views of participants. The data are then analyzed, and the information used to build into a second, quantitative phase. This qualitative phase may be used to build an instrument that best fits the sample under study, to identify appropriate instruments to use in the follow-up quantitative phase, or to specify variables that need to go into a follow-up quantitative study. Challenges in using this design reside in focusing on the appropriate qualitative findings to use and the sample selection for both phases of research.

Creswell (2014) continues by observing that these basic models can be used in more advanced mixed methods strategies, such as using theoretical lenses drawn from social justice theory and using an overarching frame that combines quantitative and qualitative data to achieve a transformative effect through the research. Other combinations exist, but the core idea is that either quantitative or qualitative data is embedded within a larger design and the data sources play a supporting role in the overall design. For instance, a multiphase mixed methods design is common in the fields of evaluation and program interventions, where concurrent or sequential strategies are used in tandem longitudinally to help understand a long-term program goal (Creswell, 2014).

Earlier discussion in Chapter 2, notably those involving the approach advocated in EBL and action research, highlighted the processual and cyclical nature of learning. These conceptions were further extended through a discussion of ID theories. All three of the models/approaches presented there (ADDIE, ARCS and the SAM) further stressed this cyclical, processual progression in the design of instruction and its application in learning, training and competency development. Reflecting these theoretical roots, the current investigation aimed to adopt a research process that would stay true to this conception of the process of learning and therefore adopted and applied research models that would accomplish this. In Creswell's (2014) conception, the **multiphase mixed methods design** was employed here, given its applicability in the fields of evaluation and program interventions, where concurrent or sequential strategies are used in tandem longitudinally to help understand a long-term program goal. Drawing on this conception, Table 1 (Chapter 1) - which displayed the investigative outline - can now be updated to show the methodological strategy employed throughout all the phases. This is shown below in Table 10, as part of the conclusion.

3.2.3 Conclusion

This investigation followed an open-ended exploratory approach that was driven in principle by an action research stance and strategy, and followed a processual, and cyclical multi-phase, mixed methods design to generate quantitative and qualitative results for theoretical interpretation and practical re-application. As noted, the intention behind this investigation is to address the problem converging around the lack of a comprehensive theory for ICC development. This identified gap was understood to be one of the main reasons for the shortage of pedagogical

support to develop CQ. With the methodological approach as suggested here (see Table 10), the identified gap could thus be addressed in a methodical investigation that would potentially generate ways for investigating how ICC – and CQ - can be developed. Doing so would deliver information/data that could be harvested and developed, using ID&T, to cultivate the CQ of university students and simultaneously building a pedagogy for CQ. The following chapter turns to the first set of results that were produced following the implementation of the investigative framework.

Table10. Updated outline of the research phases and steps

Phases	Steps	Description	Methodological strategies
Phase I & II	1 - 3	①Theoretical foundations of ID, EBL, BL & CQ: Identify research gaps. ② Theoretical synthesis & framework construction ③Workshop design & Implementation - Data collection & Review / Evaluate	Note that these steps were applied (to a more or lesser degree) in all the phases: ⇓ ▪ Critical analysis ▪ Synthesis ▪ Observation ▪ Audience analysis & Feedback: Summative & Formative analysis Following the collection of data in this manner: ⇒ Quantitative & Qualitative analysis ⇒ Interpretation of findings
Phase III	4 - 5	④ Course design with embedded workshop & Implementation + Data collection & Review / Evaluate ⑤Course Iteration, additional design elements & BL, data collection & Review / Evaluate	
Phase IV	6	⑥ BL course iteration; additional design elements; data collection. Review & evaluate, obtain independent CQ assessment.	
Phase V	7 - 8	⑦ BL course iteration, additional design elements; data collection. Review / Evaluate ⑧ (FUTURE) Blended course Iteration, LMS adoption; Additional design elements & data collection; Review / Evaluate; Independent CQ assessment.	

CHAPTER FOUR

Iteration 0. A Multi-Cultural Workshop for Developing Cultural Intelligence (CQ)

Prologue

The theoretical formulation of the investigative framework for this study that was presented in Chapter 2 provided the foundation for further discussion of the methodological strategy and process in Chapter 3. As noted before, this investigative framework helped to activate and sustain the investigation. Discussion now turns to the first application of this investigative framework in a multi-cultural workshop that took place during June 2016 at Saga University with a multi-cultural group of undergraduate students. To help illustrate the dynamic strategy that informed the design of this workshop within the broad investigative framework, Figure 17 from Chapter 3 is reproduced below in Figure 19. The points of emphasis highlight the focus of the current chapter.

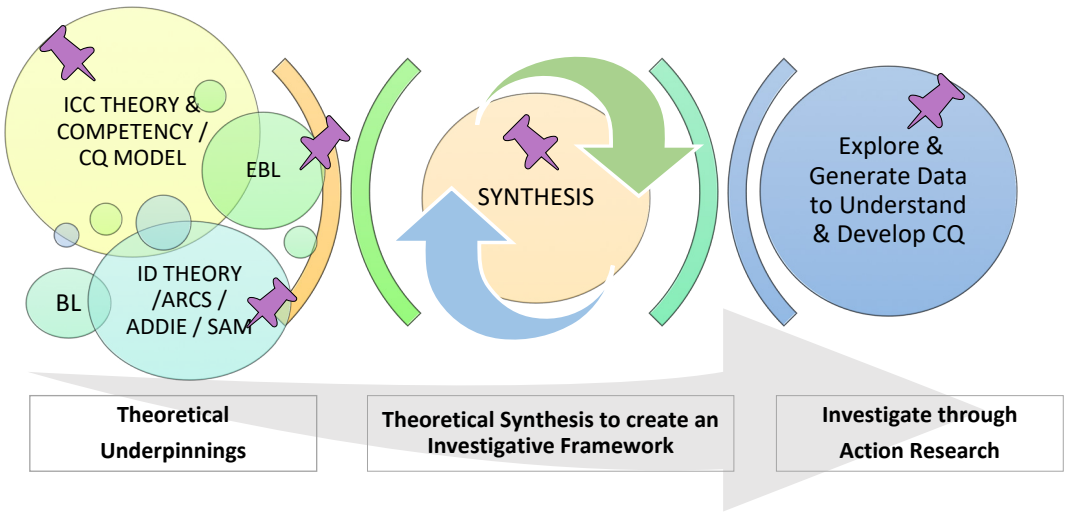


Figure 19. Workshop development: A strategy for the investigative process

Although this strategy describes the whole investigation, this process and strategy were also followed in the design, development and application of the

workshop, thus helping to anchor, test and/or confirm the unique theoretical synthesis and framework application. The theoretical underpinnings of the workshop at this point in the investigation employed the basic theoretical design elements: relevant ID theory and models (ARCS, ADDIE & SAM), ICC theory (CQ) and EBL. To further illustrate and detail the steps taken in the design of the multi-cultural workshop, Figure 2 (Chapter 1) is reproduced to help focus the ensuing discussion. Note that Phases I & II is highlighted here to denote the focus of the current chapter.

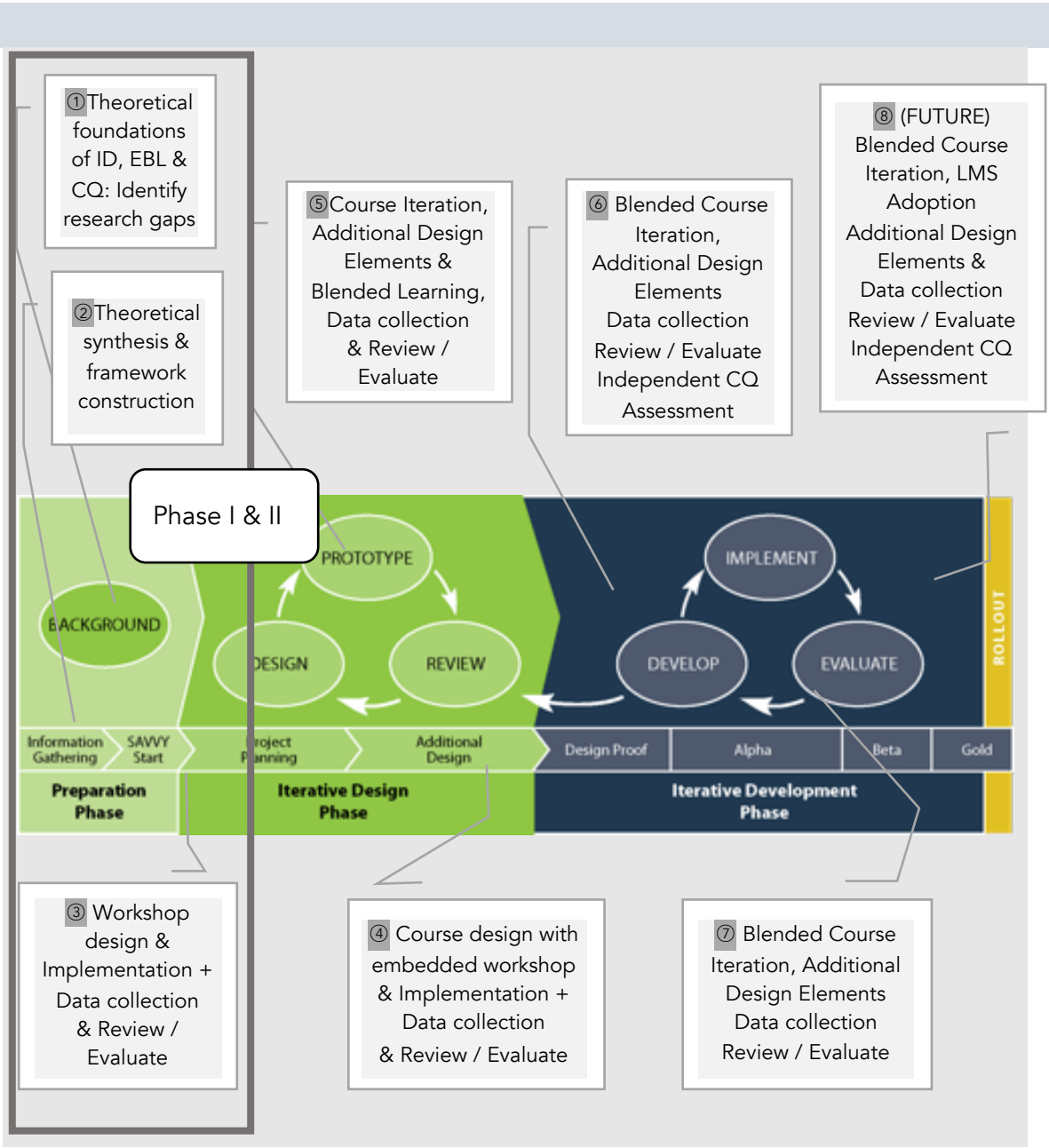


Figure 20. Phases I & II of the investigation utilizing the SAM

Phase I thus considered the theoretical foundations that would be necessary to help formulate and construct a framework for the ICC (CQ) development for a multi-cultural group of undergraduate students. This preparatory phase is represented in steps ① and ② in the model above. The fundamental design of this framework incorporated three main theoretical elements: (1) instructional design (ID) theory, as represented through ADDIE, ARCS and SAM (2) experiential learning (EBL) theory and (3) ICC theory, with preliminary reference to the CQ model.

Phase II considered how these abovementioned models would translate into a design for an integrated framework to enable a structured method of enquiry and the collection of data for research purposes. The enactment of this process consisted of the first workshop design and implementation with its associated data collection and audience analysis. This constitutes step ③ in the model given above. The results and findings from Phases I & II were presented in Kyoto, Japan, at the International Conference for Media in Education (ICoME) in 2016 and published in the proceedings. Building on this, a peer-reviewed article was published in the International Journal of Educational Media and Technology (IJEMT, 2017)[10]. This article is presented forthwith as the main content of this chapter.

Note that Appendix 1 contains all the supporting materials for this chapter. It includes the workshop slides, handouts, media, EBL activities utilized, data analysis and published materials. Further note that the reference list for this article is included in the final reference section, after the conclusion.

Following the reproduction of the abovementioned article, this chapter concludes with a brief discussion of the main findings and how these are placed in the larger frame of the project, with special reference to the findings for further design and development. These are then drawn together to conclude and linked to Chapter 5, which contains a further iteration and expansion of the current work.

[10] Roux, P. W., & Suzuki, K. (2017a). 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.

4. Designing Online Instruction for Developing Cultural Intelligence (CQ): A Report from a Classroom-Based Workshop

Abstract

Online learning continues to expand globally, increasing demands for educational materials that are sensitive and adaptive to learners from diverse cultural backgrounds. The current project aims to construct a workshop series that incorporates theory and practice from the fields of instructional design (ID) and intercultural learning. As part of an ongoing research initiative, preliminary findings from an initial classroom-based workshop, aimed at exploring the development cultural intelligence (CQ) with a diverse group of learners at a Japanese university are presented here. The focus is to report on the foundation of the initial design which includes a synthesis of cultural learning content with widely used models in the ID field. In addition, results from the application of this design enabled an audience analysis that is presented together with general observations and participant feedback. Findings are discussed with a view to adaptation of procedures and materials for the development of intercultural competence or CQ.

Keywords: Cultural intelligence (CQ), Experiential learning, Japan, Instructional design, Intercultural competence

4.1. Introduction

Online learning is now a global phenomenon. Governments, corporations, education systems and companies worldwide increasingly make use of some form of blended learning to educate, train and develop their members and students – learners who may be spread over several different locations and time-zones, or pursuing education in a foreign setting. This increasing diversity requires a consideration for learning materials and methods that are culturally relevant, adaptive and informed about the potential impact of cultural diversity on the learning process (Clem, 2004).

Since culture is central to the meaning-making process, there is clear incentive for instructional designers to be cognizant of their learners' cultures and how this diversity might manifest in learning pathways (Parrish & Linder-VanBerschot, 2010; Thomas, Mitchell & Joseph, 2002). Instructional designers can successfully employ existent theory to understand learner diversity: a study (Thomas et al., 2002) utilizing the ADDIE model for instance, demonstrated that a sensitive design can safeguard

against the injection of cultural bias into the learning process. Nevertheless, the area suffers from a shortage of research (Clem, 2004; Gunawardena, Wilson & Nolla, 2003) and often relies on frameworks from other disciplines (Rogers, Graham & Mayes, 2007). It has even been referred to as 'culturally blind' (Henderson, 2007, pp. 131-2) following a critical investigation of global e-learning practices.

Cultural predispositions influence the way learners perceive, interpret and respond to their educational environment. Since culture incorporates ideas about race, ethnicity, nationality, religion, class, gender, values, traditions, language, lifestyles, as well as workplace and academic cultures, it implies that e-learners and e-teachers belong and participate in more than one culture at any given time in the learning process (Henderson, 2007). As international education expands, students need to navigate an increasingly multicultural reality with the requisite intercultural skill – a trend that is not likely to diminish any time soon. In Japan where our investigation is situated, tourism continues to grow, student populations are becoming more diverse and companies increasingly require foreign sojourns from their workforce – trends that partially triggered the current study.

Cultural intelligence (CQ) is a recent theoretical development that has shown promise for investigating and understanding intercultural learning and effectiveness. CQ describes an individual's capability to function effectively in situations characterized by cultural diversity (Ang, Van Dyne & Tan, 2011). Having CQ means utilizing four complementary capacities embedded in a personal intelligence: metacognitive, cognitive, motivational, and behavioural abilities that interact to help navigate the socio-cultural environment (Ang & Van Dyne, 2011). Although the development of CQ theory has offered useful understandings of this skill set, MacNab, Brislin & Worthley (2012) point out that there are few specific models for teaching people how to understand and develop the capacities implied in raising CQ. Research has suggested that the experiential learning approach to CQ education, training and development are effective (Ng, Van Dyne & Ang, 2009) and that university participants are ideal for this pedagogical method, (MacNab et al., 2012). We introduce the concept of CQ here with a view to later investigations since it shares theoretical roots with educational theory, the learning sciences and instructional design (ID).

Reporting the first trial, the current paper presents findings of the attempted theoretical synthesis and application of the conceptual framework. We explore in a

limited fashion how the methods and means available in the field of ID and the learning sciences can be combined with cultural theory to inform the creation of culturally sensitive and adaptive ways of learning. Four goals operationalize our ideas: (1) to design a workshop for a multicultural audience that draws on a synthesis of ideas from the fields of learning theory, ID&T and cultural theory; (2) to conduct the workshop and gather feedback for audience and data analysis purposes; (3) to consider whether, and how, the relevant theory could be applied to support the development of CQ; and finally, (4) to briefly consider the future design implications and adaptations of these methods and materials for CQ development. Findings are discussed with a view to future iterations and its proposed benefit to intercultural learning.

4.2 Research Design, Methods and Procedures

The initial exploratory workshop combined local Japanese university students with several foreign student sojourners. We offered a voluntary, once-off workshop where students were invited for an intercultural learning experience. Research shows that motivation affects whether and to what extent people will direct energy to learn and understand about other cultures (Leung, Ang & Tan, 2014), so our call for voluntary participants was aimed to attract students who had a self-identified motivation for intercultural learning. We further reasoned that combining students from across faculties and programs would draw on a variety of interests and enhance the cultural and learning diversity in our workshop.

We approached lecturers within the General Education Faculty – who typically teach subjects in the humanities, and mostly teach in English – to invite students to the workshop. The same invitation was displayed on the campus terminal's main announcement page. The 90-minute workshop drew a multicultural audience of 47 participants from 5 faculties, ranging from freshman to post-graduates. Groups of 6-8 students were arranged, making sure that each were sufficiently diverse. Sixty-eight percent of participants were Japanese, with other large groups from Thailand and Korea, while a further 3 south-east Asian countries were represented. Only a marginal proportion identified as European and female students constituted the majority (73%). Nine different home languages were reported, and self-report measures indicated that most students had use of a second language; in most cases, English.

4.3 Workshop Design I: Considerations for a Theoretical Synthesis

To create a basis for intercultural learning, we considered a theoretical approach that could support initial and later explorations and allow for future improvements. Accordingly, we designed a workshop template (Figure 21) to incorporate the ADDIE model (see Molenda, 2003), the ARCS model (Keller, 1997) and the Experiential Learning model (Kolb, 1984). Given that this was a preliminary step, the CQ model and theory was not explicitly incorporated here; mostly to avoid additional complexity at this early stage, but also to first establish an ID foundation to which broad cultural ideas could be attached in an experimental manner as refinements were introduced.

Figure 21 shows the experiential learning model (Kolb, 1984) that informed our design thinking and subsequent methodology. This model has proven success ratings in intercultural training and learning (Joy & Kolb, 2009; Kurpis & Hunter, 2017), 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 university courses, the model has shown support for developing intercultural awareness and effectiveness in student populations (Barnes et al., 2017; Fischer, 2011; MacNab et al., 2012). For current purposes, and as figure 21 shows, placing the experiential learning model alongside two ID models (ADDIE & ARCS) allows their individual components to be considered for an associative effect.

Combining models in this way injects the ARCS model's motivational effects of systematic design on learning (Keller, 1997; Keller & Suzuki, 2004), whilst simultaneously keeping track of the broader steps involved in the design process that the ADDIE model advocates. Using the models in conjunction thus helps to sustain an awareness of both the macro- and micro levels of the design process: the ADDIE model broadly acting as an 'organising principle' (Molenda, 2003, p. 36) and the ARCS model ensuring that motivational aspects are incorporated into the learning process. The dynamic nature of the experiential learning model assists with the overall structure of the workshop and sustains an active element in the individual activities embedded within the workshop. Weaving together the elements of the three models thus guided the design process and gave rise to the eight points featured in the synthesis section of the framework, forming the workshop's outline.

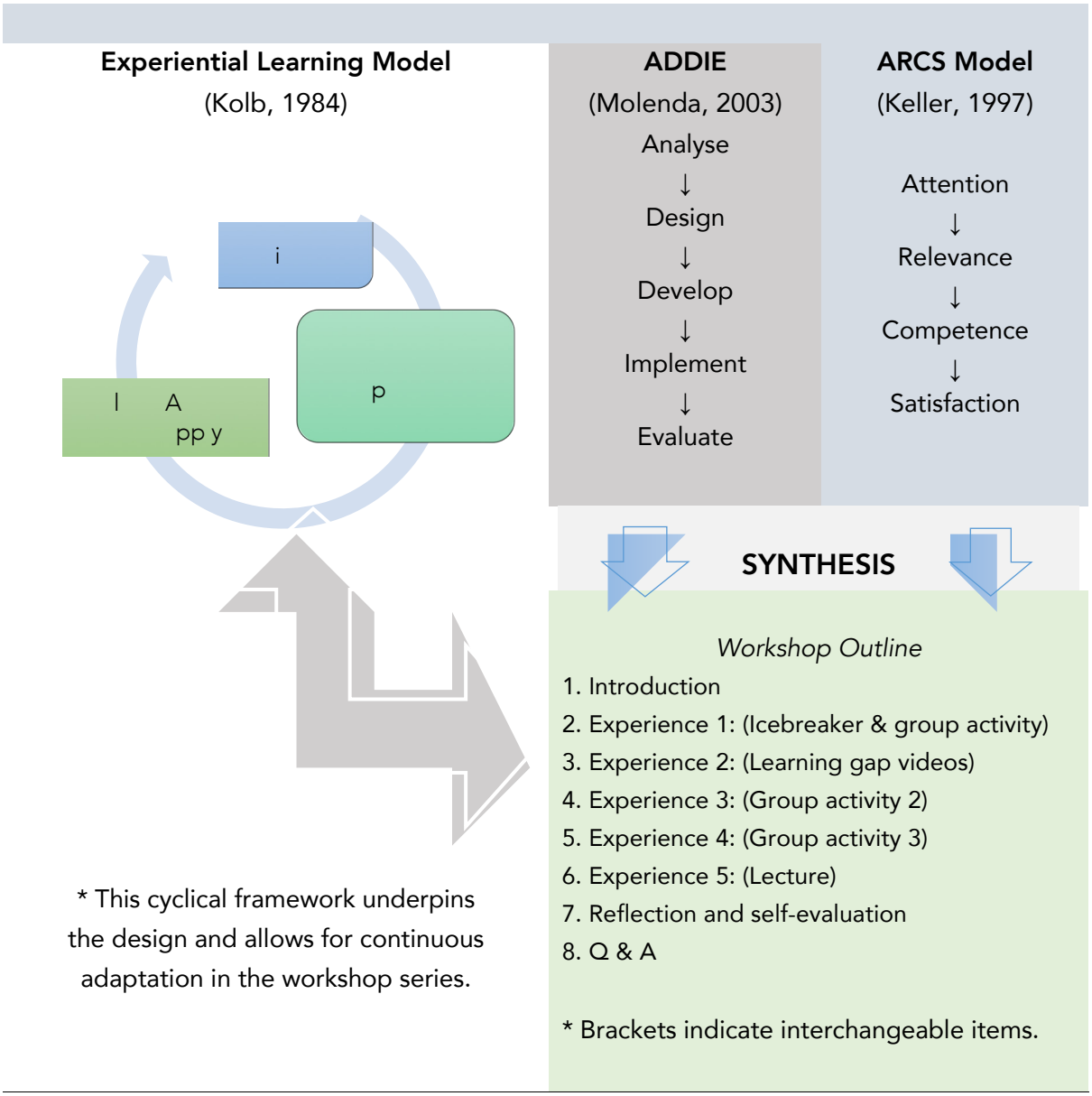


Figure 21. Constructing a workshop framework

A synthesis between the compatible ideas from the three mentioned models supported workshop learning content. Table 11 details the workshop elements in line with the steps specified by each of the ID models. To incorporate broad cultural aspects and ideas that would support intercultural skill/CQ development, learning materials featuring topical content (in this case, racism in apartheid South Africa) were explicitly created for experience-centred, classroom-based learning targeted at our audience. The learning contents (steps 1 – 7) are viewed as interchangeable and fluid, in keeping with the vision that it should accommodate alternative topics to support intercultural learning for future workshops. The resultant framework thus constitutes a foundation for future refinement, re-application and development.

Table 11. Detailed outline of models and fusion with workshop learning contents

ADDIE Model		ARCS Model	WORKSHOP CONTENT Should I care about RACE? Reflections on Apartheid South Africa	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	**Frame & Initiate**
Design how it is to be learnt	Mixed methods		2 Experience 1: Ice breaker – Draw a cultural symbol Discussion & self-reflection	10	
Develop learning materials	Provided: Videos & Hand-outs	**Relevance**	3 Experience 2: Learning-gap videos & self-assessment – Discussion	20	
Implement in a real-world context	Facilitate workshop	**Confidence**	4 Experience 3: 'Group Areas Act' – Discussion	5	**Imagine & Experience**
			5 Experience 4: 'The politics of opportunity' – Discussion	10	
			6 Experience 5: Lecture	20	
Evaluate adequacy of learning	Evaluation of learning contents	**Satisfaction**	7 Self-evaluation & workshop evaluation / Q & A	10	**Reflect, analyze & re-apply**

4.3.1 Theoretical synthesis

Conceptually, the steps of the ADDIE, ARCS and experiential learning models

overlap or link in certain ways that assist the designer in connecting topical content (intercultural learning) with steps in the learning process. This understanding formed the bedrock of our synthesis. To illustrate using the ADDIE model, the design → develop → implement -sequence ties comfortably with the competency building component of the ARCS model if a link is provided through relevant learning content. A learning sequence to develop CQ can thus be constructed as follows:

> *designing, developing and implementing (following ADDIE) → a culturally informative learning moment (experiential learning) can directly impact → cognition and behaviour (in CQ terminology) to → effect competency building (using ARCS terminology), thus supporting → the development of intercultural effectiveness, or cultural intelligence (CQ).*

Following this approach consistently, we fused intercultural learning contents with the ID models and theory, resulting in the workshop as outlined above. The experiential learning model informed the basic organisation of the workshop by anchoring corresponding steps in each of the relevant models.

4.4 Workshop design II: Methods and tools, goals and rationale

Building cultural competence is necessary for developing intercultural skill and research has shown that the acquisition of such capacities need to be intentionally developed through effective learning experiences (Berardo & Deardorff, 2012). At university level, this can be achieved through a combination of lectures, behavioural training and experiential approaches (Fischer, 2011; MacNab, 2012). Following completion of the basic framework, we gave more detailed attention to the workshop elements, the various activities and the rationale for their inclusion.

To support and guide the actual implementation of these activities a set of paper-based materials were designed for student use. These were collected post-workshop to assist in audience analysis and digitized for research purposes using Google forms. We focus on the self-rating scales, group-based experiential learning activities (1-5) and final evaluation here. The main elements in our design thinking and subsequent methods and approach are summarized Table 12 below.

Table 12. Methods and rationale behind workshop elements

Workshop elements	Goals & Rationale
Framework	→ To create a theoretical foundation using ID & ICC theory to support intercultural skill / CQ development
Self-rating scales (pre- & post-workshop)	→ To raise intercultural awareness → To investigate and reflect on learning style & preferences → To assist in audience analysis
Group-based EBL activities	→ To enhance workshop engagement → To increase communication between participants → To support learning through doing → To support intercultural learning
Final evaluation	→ To assess the workshop experience → To assist in audience analysis

Self-rating scales were devised to raise intercultural awareness and knowledge, broadly investigate learning styles and preferences, and to assist the audience analysis (Table 12). We generated questions 1-4 to raise student awareness and probe their learning preferences/styles, remaining cognizant of culture's complex interaction with learning styles (Joy & Kolb, 2009). Our intention was to get a sense of what students had in mind at the outset and to obtain a sense of any shifts or changes in these cognitions upon completion. Questions 6-10 aimed to gain insights into students' intercultural orientation, knowledge and interest, including ideas about race and racism. The self-report utilized a 5-point Likert-scale (1 – strongly agree & 5 – strongly disagree).

Since cognition is considered an important aspect of cultural intelligence (Ang & Van Dyne, 2008) we reasoned that actively raising student awareness and providing relevant materials would support intercultural learning. The self-reports thus aimed to measure the impact of the workshop elements on participants' intercultural skill/CQ development. Evaluations of similar brief intercultural interventions embedded in university courses have been shown to have some effectiveness in raising intercultural awareness (Fischer, 2011; Kurpis & Hunter, 2017). To cultivate and measure audience engagement we introduced a learning-gap activity accompanied by a self-rating scale. We reasoned that a game-like activity would be suitable given our experience-centred model and goals for learner

engagement. Garris, Ahlers & Driskell (2002) note that certain elements of games, such as sensory stimuli, a personal challenge, control over effort, and sense of mystery can be employed to support learning. Typically, such elements activate curiosity and motivation to participate and continue, creating further interest and task persistence.

To explore whether and how these aspects could be utilized in our workshop we introduced two short quizzes (one African-themed, and the other, South African). These were interspersed with topical video content to help raise cultural awareness, impart knowledge (facts, statistics) and provide material for discussion. Aided by group discussion during the workshop, these were aimed specifically at expanding participants' intercultural learning and assist in audience participation and analysis.

Group-based experiential learning activities were designed with the goals of learning with cultural 'others' in mind, i.e., activities that require students to think critically, are enhanced by diversity and draws on, or challenges existent skills. Such activities have been shown to have transformative potential (Barnes et al., 2017; MacNab, 2012). Five experiences (Table 11, points 2 – 6) were designed to increase participant engagement through topical content that supports intercultural skill development. The activities were staggered as follows: (1) an ice-breaker that had students introduce themselves by presenting a picture of a cultural symbol they valued through a picture they were asked to draw on the spot; (2) a learning-gap activity that combined group discussion with 2 videos about Africa and South Africa to impart knowledge and raise awareness; (3) an activity that introduced the laws of racial discrimination by arbitrarily assigning different levels of power to the groups in the class, which tied with (4) an activity that demonstrated the socio-economic gaps that the laws of apartheid caused in South African society; and finally, (5) a lecture that brought together these preceding activities with historical and factual explanation. Presented as a series of knowledge building blocks, these constituted a learning journey based on the initial framework.

Final evaluations consisted of a question and answer session with paper-based reflections and feedback. This was an opportunity for participants to take stock of the impact of the session, to re-think their initial opinions and adjust or confirm thoughts and ideas. This vital step also corresponds with the final dimension of each of the models employed here. Both the ADDIE and ARCS models advocate an evaluative component to help participants, teachers and researchers assess and

reflect upon the outcomes of learning or participation (Keller, 2000; Molenda, 2003). Since motivation in learning fluctuates depending on degrees of stimulation and interest, which in turn affects persistence (Keller, 2000), the ARCS model's cognizance of satisfaction as a constructive end to the intercultural learning process is a crucial consideration. Likewise, experiential approaches are ideal for CQ development since the reflective component it advocates holds the potential for linking the gap between thought and action (MacNab, 2012), thereby completing the loop of a learning/training intervention.

4.5 Results and Discussion

Given our goal of exploring intercultural learning through the application of ID theory, the first result to consider is the effectiveness of the workshop in terms of intercultural skill gains by analysing participant self-evaluation, levels of engagement with learning content and final feedback. Secondly, certain results are highlighted for the purposes of audience analysis. Finally, consideration is given to the relative success of the workshop design features in relation to intercultural competence development.

4.5.1 Workshop impact and effectiveness

Comparative results (pre-/post workshop) of participants' self-rating scales are presented in Figure 22. These display the type of shifts evident in participant preference during the workshop. The multiple values delineated in each bar (indicated by colour/percentage) allows for the stated preference in response to each question to be identified as a grouping, thus making it possible to see the shifts in audience cognition. Current limitations do not permit a full discussion of the questions, but a few are highlighted to demonstrate effectiveness of learning content.

The first four questions aimed at gaining a sense of the learning styles and preferences of the participants. Joy & Kolb (2009) found significant cultural influences in learning styles, particularly for undergraduates. Their study showed that cultural influences relate to differences in respect of their reliance on concrete experiences versus abstract concepts in the way learning occurs, a useful finding for the experiential nature of our design. Perhaps most striking is the very mixed picture of preferences that the self-reflection surveys on learning styles delivered (Figure 22). This is also evident in the shifting pattern (depicted by the coloured bars) they

exhibited in the self-reported measures pre- and post-workshop. This is not an unexpected result given the multicultural, multi-national audience and the inherent differentials in learning backgrounds. It is understood here as a strong indicator that variety and difference are key themes in the results, as is the fluidity and shifts in the expression of learner styles/preferences.

We interpret the shifts in cognition during the session as positive, although we cannot extrapolate with any accuracy at this early stage. It is expected that these will likely remain important features of the future audience profile and is therefore incorporated in our design thinking.

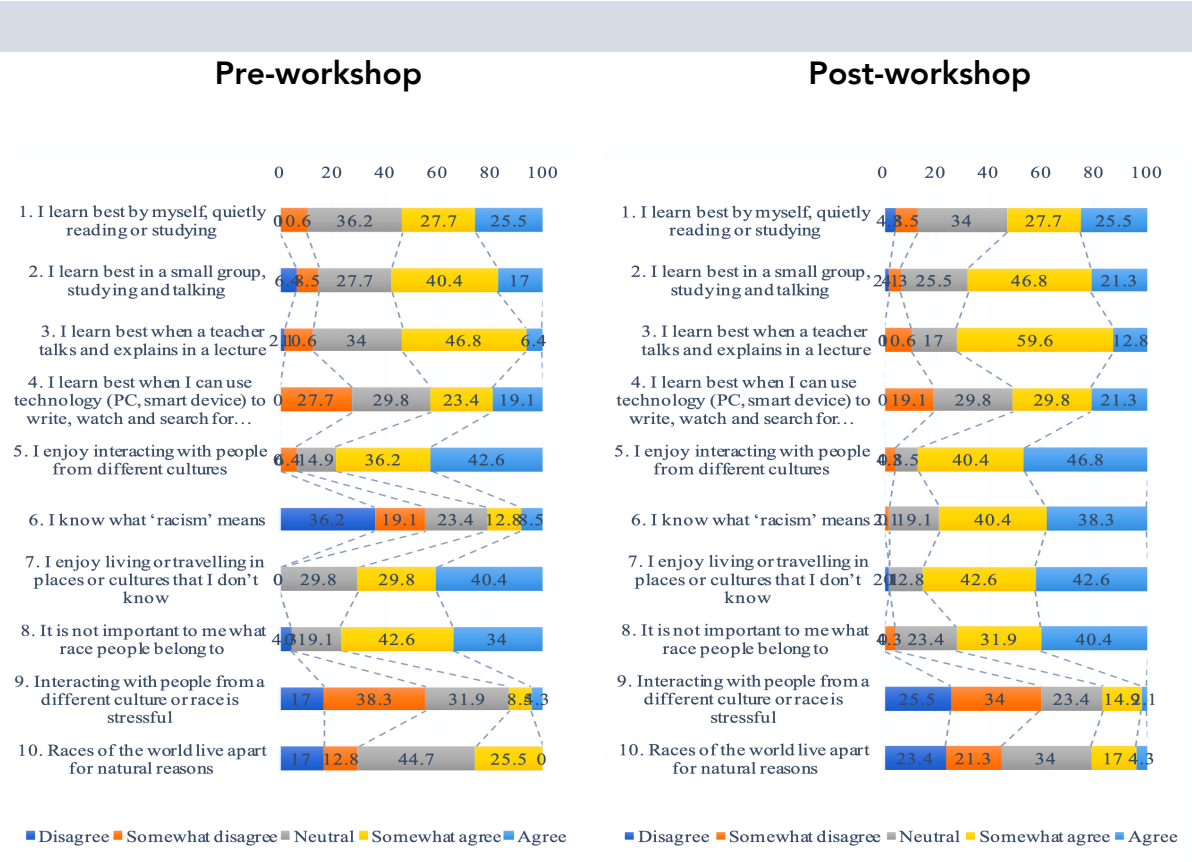


Figure 22. Participant self-reflection results from the workshop

Another observation here is that there was a clear shift away from a generally 'neutral' (grey) position towards a more positive 'agree' (blue) position when pre-/post-workshop results are compared. Since a neutral position can be associated with lower levels of engagement, this shift could indicate activated audience engagement. It might also indicate that participants reconsidered their learning styles/preferences, thus raising their learning awareness. This is a cautious contention and we aim to

validate this with future iterations. Joy & Kolb (2009) points to the many predictor variables and different levels of analysis that are required in this overlap between cultural- and educational systems.

Participant preferences regarding the use of different forms of technology in learning (results from question 4) are interesting to highlight, given that aside from projected videos used during the learning gap activity, the only other technology in use were smartphones that students used for translation. Given the linguistic diversity in attendance, it was an observable feature that students switched between multiple languages and used smartphone dictionaries or the internet to communicate. The types of media, applications and tools used for communication were unfortunately not noted down but will be attended to in subsequent investigations. Learning preferences here also shifted markedly in favour of a more positive association with a technologically enhanced way of learning. This could indicate that learners re-evaluated their previously held notions and is taken here as another sign of learning engagement – even if indirectly.

Observations here highlight the enormous potential of technology to support and enable intercultural communication (Merryfield, 2003) – an enhancement that we aim to investigate in relation to raising CQ. A key implication then is that linguistic variety and skill could potentially play a decisive role in workshop interaction, influencing patterns of interaction and subsequent intercultural communication, in turn exerting an influence (positive/negative) on the development of CQ. Effective communication strategies are stressed in the CQ model and Leung et al. (2014) acknowledge the need for further investigation in how these underlying processes combine to build intercultural competence.

Comparing the cultural and racial-awareness aspects of the survey (questions 5-10), results show promising signs of knowledge gains (question 6). In addition, participants' estimation of enjoyment arising from cross-cultural experiences (questions 5 & 7) also increased markedly, further supporting the notion of a positive experience during the workshop. The shifts evident in responses to questions related to some negative aspects of intercultural interaction (questions 8 and 9), signifies an active engagement with some of the cultural controversies. Results here show that the slightly more negatively loaded pre-workshop opinion shifted towards a more neutral position, i.e., participants' opinion became less polarized. Finally, given the shift away from neutrality in question 10, participants seem to conclude

that there is some form of social organisation imposed through human association on the racial groups of the world, i.e., that our social organisations restrict or enable the movement of racial groupings. This question will need further investigation for clarification.

Achieving audience engagement and participation are key drivers in the transfer of learning and were central aims in our design. The positive results obtained from the learning gap activities (Figure 23) can thus be taken as signifying active learning engagement, supporting earlier findings and giving credence to the inclusion of this type of activity. Presented as an interactive quiz (students compared their respective performance in groups) this activity proved very popular, generating much discussion and interest. The positive gains and affective rewards reported here provide incentives for further investigation and ties positively with Simon's (1995, quoted in Garris et al., 2002, p. 441-2) contention that cognition and motivation should be simultaneously incorporated in ID research.

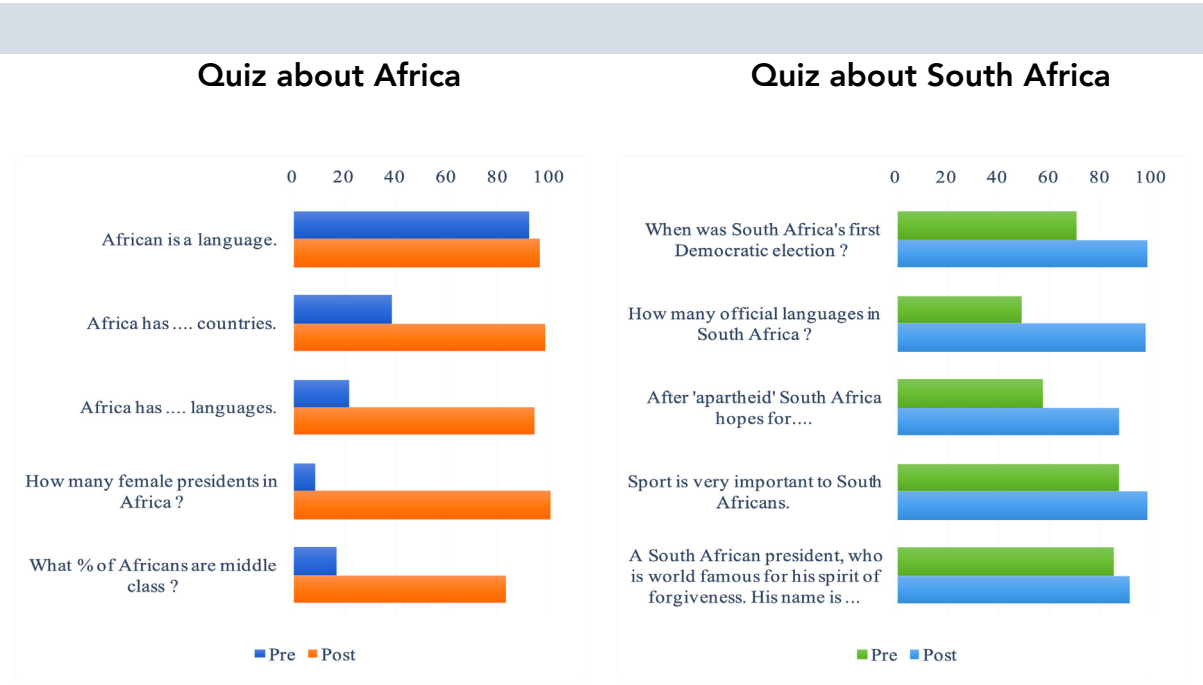


Figure 23. Comparing results from the workshop learning activity

Results from the final evaluation (Figure 24) rate the workshop's experiential learning activities and show a highly favourable audience response expressed in the levels of engagement, understanding and overall enjoyment of the contents. Most learners rated these activities as either 'very enjoyable' or 'great'. This is a very positive finding in terms of our framework and goals.

Given that experiential approaches have been extensively applied in cross-cultural training and is proposed as appropriate and effective in developing high cultural intelligence (MacNab, 2012), we feel optimistic that continuing in this vein would be advantageous. The high ratings for the multi-cultural character of the classroom experience provides further support for future workshop development in the same vein.

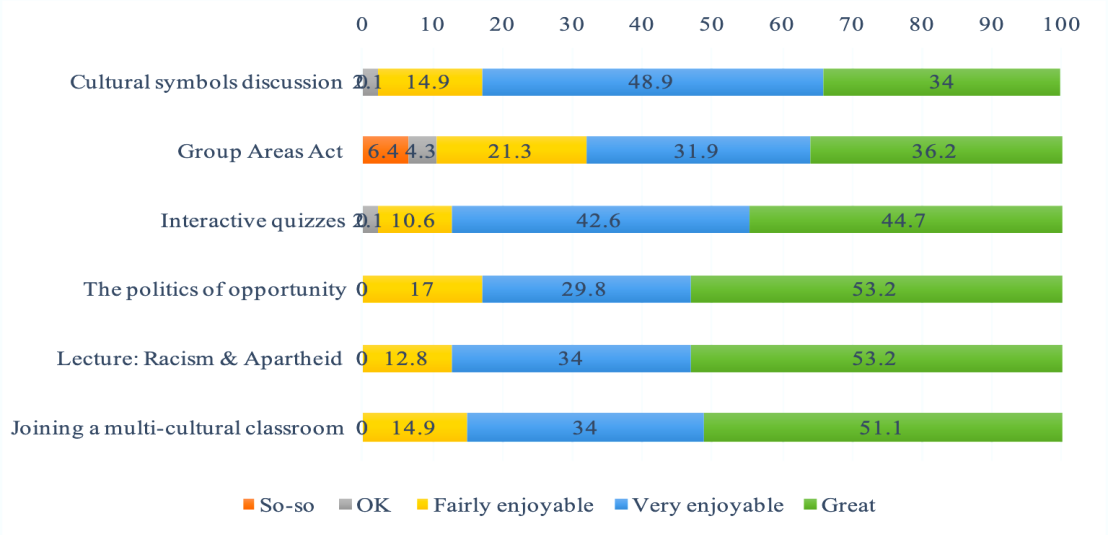


Figure 24. Evaluation of workshop components

In summary, results show marked shifts on the intercultural development measures we introduced; a positive finding considering our initial goals. These relate to shifts in perception, knowledge and opinion – signifying an actively engaged audience with indications that important elements in the intercultural learning process were activated. These findings tie with other studies that explored cultural influences in cognition (Joy & Kolb, 2009; Kurpis & Hunter, 2017).

4.5.2 Audience Analysis

As advocated by the ADDIE model, our workshop further attempted to gage who the participants are and what capabilities they have. Rogers, Graham & Mayes (2007, p. 212) note that instructional designers often underestimate the differences between themselves, their learners and the comparative contexts, unintentionally creating gaps between the way the instructional experience is designed and the expectations and capabilities of the learners. These reminders seem crucial in a cross-

cultural environment, where differences exist on so many levels. Results from the present investigation are shown below (Table 13) in a summarized form, using an adapted version of a learner analysis found in Stefaniak & Baaki (2013). We rely on biographical data to highlight the audience characteristics and, referencing earlier discussion, include: (a) situational characteristics, (b) learning preferences and circumstances, and (c) motivation and attitude.

Table 13. Audience analysis of workshop participants

Gender: Both genders; female majority Age range: 18-23 Education: Undergraduate to postgraduate Ethnicity: Mostly Asian, majority Japanese; 9 nationalities represented. Language: 9 languages recorded; majority Japanese. English the most common 2nd language.
Specific characteristics: Language flexibility, use of technologies, group, pair & individual work.
Learning preferences & circumstances: Variety of preferences but appears fluid. Multi-cultural environment positively rated.
Motivation & attitude observations: Responsive and engaged audience. Positive shifts in audience opinions and knowledge of cultural content indicate activated learning.

4.5.3 Workshop design features & integration of ID models with cultural contents

(a) Results indicate that the application of the ARCS and ADDIE models are compatible within a larger framework of the experiential learning. Successfully harnessing the procedural strengths of these models and applying it to cultural learning contents created a foundation to enhance intercultural learning in a multicultural group.

(b) Inclusion of pre-/post-workshop self-rating scales added a vital reflective component to the design. Based on results presented earlier, this workshop element succeeded in terms of raising intercultural awareness, cultural knowledge, assisted in audience analysis and encouraged participants' awareness of their learning styles and preference.

(c) Experiential learning activities proved effective and popular: enhancing workshop engagement, increasing communication and activating learning.

(d) The final reflection and evaluation served its dual purpose effectively as a workshop assessment and audience analysis. We conclude that the initial goals for our framework design was achieved.

4.6 Findings and Recommendations for Future Research

Findings are presented here with a view to adaptation of procedures and materials for the development of intercultural competencies which might also be enhanced by online tools and formats in future iterations of the project.

1) Audience learning styles and preferences displayed a mixed picture that warrants further investigation. Future instructional designs should thus accommodate difference in learners and learning backgrounds and remain flexible.
2) Smart technology supported linguistic variety and communication strategies during the learning process. Instructional designs should be cognizant of these aspects by incorporating it usefully in the learning framework, giving attention to specifically useful applications and tools.
3) Cultural learning contents were successfully integrated with ID theory and experiential activities, suggesting positive gains for intercultural learning and providing support for our synthesized framework. These findings warrant replication and further evaluation for iterative purposes.
4) Our results show that experiential learning activities enhance intercultural learning, supporting other findings reported here. These will be expanded and adapted for use in blended learning environments. where they might be enhanced by online components.
5) The audience analysis yielded a useful characterization of potential future audiences and we aim to retain this analytic feature for future workshop and training development.

4.7 Conclusion

The expansion of global online learning continues rapidly, increasing the demand for culturally sensitive and adaptive learning materials. As part of a larger project that applies instructional design theory to develop cultural intelligence (CQ), the results of an initial, exploratory workshop with university students, aimed at the construction of a foundational framework was reported here. Findings indicate that the design of the framework was successful at synthesising ID models and theory with desired cultural content to support a workshop for a multi-cultural, multi-linguistic group of learners. An audience analysis recorded a broad variety of learning styles & preferences and noted that linguistic factors, supported by smartphone applications

and online access impacted positively on intercultural communication patterns. High levels of audience engagement and positive evaluation indicated activated learning, thus supporting further investigation using the proposed workshop format and modus operandi in this context. Further research work will focus on a reiteration of the framework, re-application and fine-tuning of learning elements for validation, and development of more experience-based learning activities for exploring application and potential use in blended learning environments.

Postscript

Following the reproduction of the abovementioned article, this chapter now concludes by referencing the original purpose of this investigation and bringing together the main findings of Phases I & II within the larger investigative framework. It is summarized in the ensuing discussion and tied together here to connect with Phase III in the following chapter.

Referring back to the investigative process provided at the outset of this chapter (Figure 21, utilizing the SAM) it can be noted that Phases I & II constituted a preparation phase that included 'information gathering' and 'SAVVY Start', serving as background and foundation for the investigation. These two phases consisted of using the identified theoretical foundations (ID, EBL & ICC/CQ) to gain a sense of the field of ICC development and how ID could potentially be applied to investigate the problem of formulating sufficient and effective instructional materials to meet some of the identified shortcomings in the pedagogical support for developing ICC/CQ. Through an integration of theoretical strands, it was possible to create a synthesis of the relevant theories/models and formulate a unique framework for investigative purposes. This framework was then applied by conducting a multi-cultural workshop, providing data and findings from which an audience analysis and several indications for further steps in the investigative process emerged.

Very briefly, these findings – in terms of further development of the investigative process – provided a number of instructive insights. From a practical implementation perspective: 1) learning designs should remain flexible to accommodate differences in learners and learning styles/preferences; 2) audiences in the present context are likely to display similar features as the one that attended the workshop, although multi-cultural composition could vary greatly; and 3) utilizing smart technologies (phones/tablets and their associated tools and applications) during the learning

process proved very valuable and their presence in the design of further instruction and learning – using a blended learning (BL) format – should be harnessed to further the goals of the investigation.

From a theoretical application perspective, 4) general ICC theory and the CQ model were successfully integrated with the chosen ID models (ADDIE & ARCS), and EBL, providing strong potential for gains in CQ development. This finding was evidenced in the preliminary positive outcomes of the workshop in terms of the overall aim of this project. Taken together, these four broad indicators provided a foundation that suggested replication – and significant expansion in a longer cycle (course) with a blended format – could be useful to deepen the investigation and enhance understanding of its purpose. This chapter therefore concludes the cycle of SAM's preparation phase, and Phases I & II of this investigation. Forthwith, Chapter 5 of this investigation takes these findings and indicators through to the next phases of design, development and expansion, as encapsulated in Phase III.

CHAPTER FIVE

Iteration 1.0. Designing a Blended Course for Developing Cultural Intelligence (CQ)

Prologue

Chapter 4 presented Phases I & II, and constituted the information gathering and 'SAVVY Start' (in the SAM) of the investigation. Findings from these phases provided incentives and support for iterating the framework in an expanded format with blended features, which is the central focus for this chapter. Discussion now turns to the second application, or **Phase III** of this investigative framework, which was expanded to a semester-long (15-week) course that took place during 2017 at Saga University with a group of mainly local Japanese undergraduate students. To help illustrate the dynamic strategy that informed the design process of the course, Figure 17 from Chapter 3 is reproduced as Figure 25 below. The point of emphasis, blended learning (BL), indicates the additional design feature at this stage of the investigation.

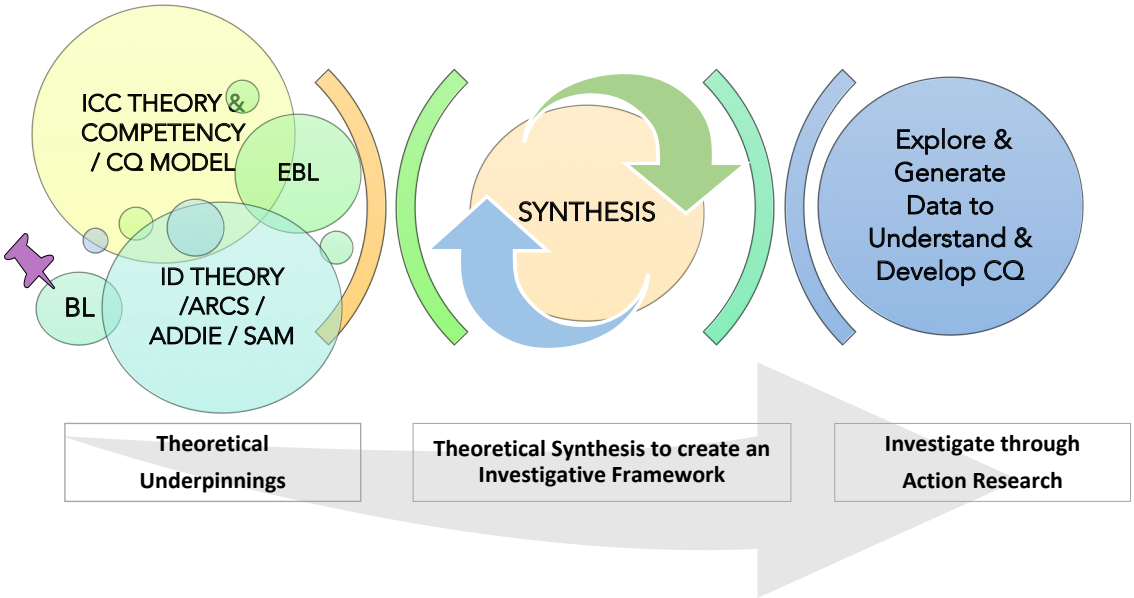


Figure 25. Course development: A strategy for the investigative process

In essence, the theoretical underpinnings contained in the workshop was expanded at this point with the integration of the BL model. To further illustrate and detail the steps taken in this phase the investigative process that was anchored in the SAM is reproduced again to help focus the ensuing discussion. Note that Phase III is highlighted here to denote the current focus.

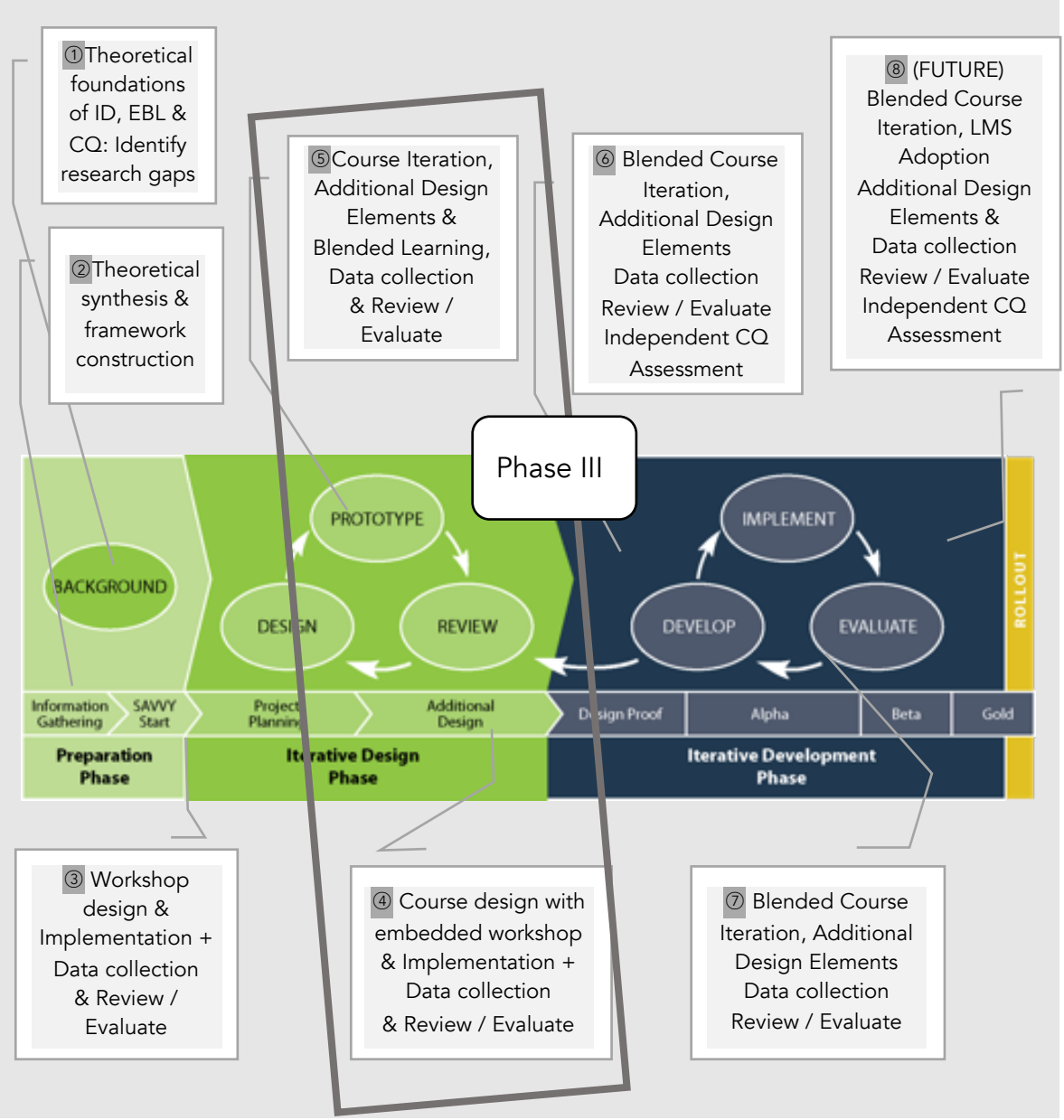


Figure 26. Phase III of the investigation – utilizing the SAM

In terms of the SAM, Phase III thus contained an **'iterative design phase'** that linked with overall project planning and featured additional design features that took the form of a prototype course that could be iterated and reviewed for evaluation. Phase III thus saw the development and expansion of the original workshop into a 15-week, semester-long course, utilizing the original framework but expanding it through the use of a BL approach, while embedding a refined version of the original workshop as one of the course elements. This phase is represented by steps ④ and ⑤ in Figure 26 above. From these results, preliminary findings were presented at the International Conference for Media in Education (ICoME) in Honolulu, Hawaii in 2017 and published in the proceedings. Building on this, a peer-reviewed article was published in the International Journal of Educational Media and Technology (IJEMT, 2018)[11]. This article is presented forthwith as the main content of this chapter.

Note that Appendix 2 contains all the supporting materials for this chapter. It includes the course materials, media, EBL activities utilized, raw data analysis, pictures of classroom work and the published proceedings from the ICOME 2017 conference. Further note that the reference list for this article is included in the reference list for the whole investigation.

Following the reproduction of the abovementioned article, this chapter concludes with a brief discussion of the main findings and how these are placed in the larger frame of the project, with special reference to the findings for further iterative design and development. These are drawn together in conclusion and linked to Chapter 6, which contains a further iteration and expansion of the current work.

[11] Roux, P. W., Suzuki, K., Matsuba, R., & Goda, Y. (2018a). Developing Cultural Intelligence (CQ): Designs for Blended Learning. *International Journal for Educational Media and Technology, 12*(1), 18-28.

5. Developing Cultural Intelligence (CQ): Designs for Blended Learning

Abstract

Building on earlier efforts to develop cultural intelligence (CQ), the current study reports on the expansion of a framework to utilize instructional design (ID) theory and experiential learning in a blended learning environment. Japanese university students' intercultural learning engagement with topical online content and media, an asynchronous exchange with international counterparts and multi-cultural workshop were tracked across one semester. CQ measures were obtained pre-/post-course, while experience-based, in-class activities were extended with online learning reflection. Course goals included critical thinking, supporting intercultural skills in English and building digital literacy. Results indicate the multi-disciplinary framework's compatibility with blended learning, and students' intercultural learning engagement patterns in terms of CQ were positive, supporting further course development despite not being statistically significant. Implications for intercultural learning, the design of instruction for blended learning, learning engagement patterns and the potential of adaptive learning are discussed against the backdrop of continued course refinement.

Keywords: cultural intelligence (CQ); experiential and blended learning; Japanese university; instructional design

5.1 Introduction

The globalization of employment and the steady incursion of technology in education and training are obliging institutions worldwide to incorporate some form of learning technology to educate and train their staff, management and students. Since 2009, the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT) has aimed to internationalize Japanese university environments through a project called the Global 30, partially geared towards the cultivation of 'global citizens' (MEXT, 2018). In previous reports (Roux & Suzuki, 2016, 2017a,b), we drew attention to the neglect of incorporating culturally sensitive methods and materials into designs for online learning (Parrish & Linder-Vanberschot, 2010; Henderson, 2007; Clem, 2004). In a preliminary attempt to start addressing some of these noted shortcomings, we developed a multi-disciplinary conceptual framework (Roux & Suzuki, 2016, 2017a,b), to serve as a foundation for an intercultural workshop that focused on the development of cultural intelligence (CQ). The framework incorporated instructional design (ID) theory, cultural intelligence (CQ) theory (Early

& Ang, 2003; Ang, VanDyne & Tan, 2011) and experiential learning theory (Kolb, 1984). It was envisaged as the initial step in our broader project, which seeks to develop the CQ, intercultural skill-set, or 'global citizenship' of Japanese university students through and application of ID and supportive educational technologies.

Findings from this initial step indicated that our framework effectively supported intercultural, experiential learning activities (Roux & Suzuki, 2016, 2017a,b), which gave preliminary support for expanding our investigation. The CQ model offers a practical understanding of cultural learning and the development of intercultural skills and has also been linked to the notion of a 'global mindset' (Roux, 2018; Lovvorn & Chen, 2010). CQ refers to an individual's capacity to function effectively in situations characterized by cultural diversity (Ang, Van Dyne & Tan, 2011). Conceptually, CQ has its roots in intelligence theory and can be described as an individual's capacity to adapt to unfamiliar cultural environments through an application of four intelligent capacities: (1) cognition, (2) motivation, (3) behavior and (4) strategy (Early & Ang, 2003). CQ is now considered one of the essential skills for the modern workforce and has gained additional popularity in its adaptations to university courses (Barnes, Smith & Hernández-Pozas, 2017; Fischer, 2011), organizational development and thinking (Ang, Van Dyne & Tan, 2011), and internationalized training (Livermore, 2011; Lovvorn & Chen, 2011).

Given the relative novelty of the CQ model however, educational and/or instructional models to support the development of CQ are not readily available (MacNab, 2012). Research studies using the CQ construct has indicated its application potential to university participants (MacNab, 2012; Fischer, 2011), while the experiential learning approach to CQ education, training and development have shown particular effectiveness (Ng, Van Dyne & Ang, 2009). Considering the reported need for a renewed cognizance of culture's pervasive influence in the design of instruction (Parrish & Linder-Vanberschot, 2010; Clem, 2004), and given earlier successes with incorporating some online media and surveys with our learner audience (Roux & Suzuki, 2016, 2017a,b), it seemed logical for our investigation to proceed in a direction that would continue to utilize educational technology more comprehensively to further the development of CQ. The need for training and structured learning as components in the development of intercultural skill (Kedia & Mukherji, 1999), coupled with the increasing use of educational technology to support and augment learning thus centralize the goals for the present investigation.

Increasing the use of technology as an educational tool implied a consideration of suitable models for course design and application. Computer-assisted learning and the Internet has radically changed the teaching paradigm (Alonso, López, Manrique & Viñes, 2005) and higher education is struggling with incorporation and adaptation of the appropriate pedagogical principles. With this consideration in mind, Watson (2008) suggests that blended learning shows significant potential, and quoting Dziuban, Hartman and Moskal (2004), he describes it as "… a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment". Figure 27 below depicts the blended learning continuum, as described by Watson (2004). Our course is matched by the description as highlighted.

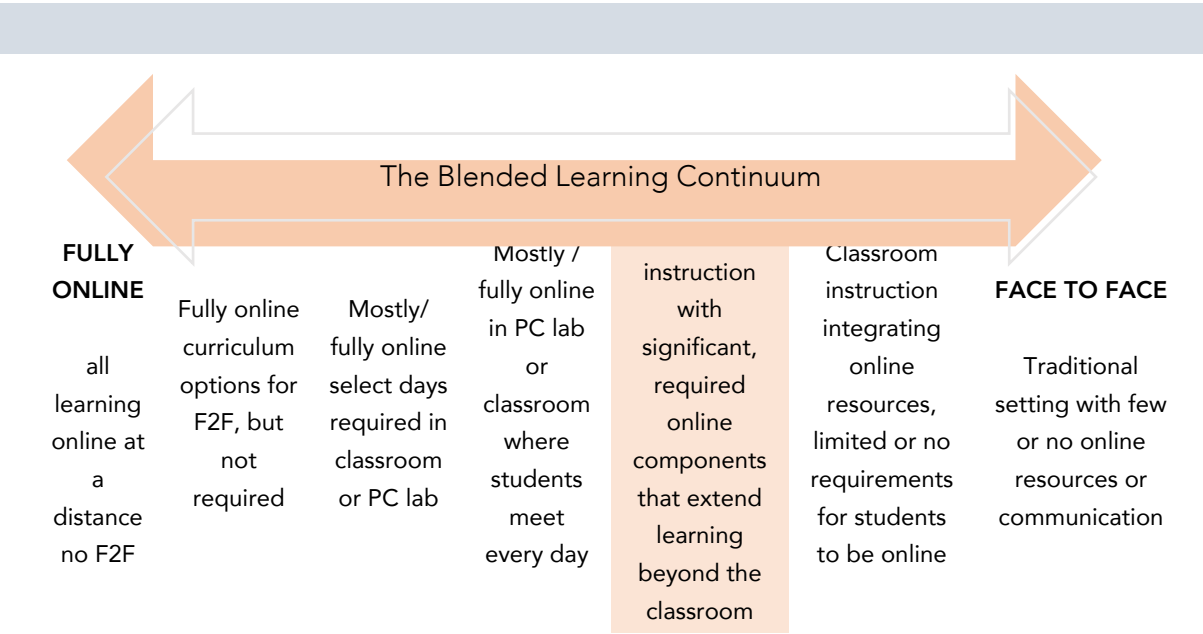


Figure 27. The blended learning continuum

This type of learning is thus a fundamental redesign of the instructional model in that it mixes various event- or experience-based activities, including live e-learning (synchronous), self-paced learning (asynchronous) and face-to-face (F2F) classrooms (Alonso et al., 2005). Moreover, the introduction and blending of key instructional procedures with technological aids are creating profound shifts in the learner-instructor relationship, with obvious effects on the individual learning process. This impact is broadly seen as follows: (1) it constitutes a shift from lecture- to student-centered instruction in that students become active and interactive learners; (2) it increases interaction between students and instructor, between the students, and

between students and content (inside or outside of the course), and (3) it integrates formative and summative assessment mechanisms for students and instructor (Watson, 2008).

Given that our project continues to refine an instructional model for the development of CQ, the qualitative aspects of the BL approach, in terms of its potential impact on learning, appeared very suitable for our stated goals. Our current study thus reports how the BL method was utilized in the design of instruction, and how it served as an application of ID to cultivate and develop CQ. We provide a discussion of the course design and development, implementation methods and present results from students' learning engagement and response patterns as well as selected student feedback.

5.2 Research Design, Methods and Procedures

Expanding an earlier framework aimed at encouraging intercultural learning (Roux & Suzuki, 2016, 2017a,b), we designed and implemented a 15-week intercultural communication course that combined: 1) traditional F2F short lectures; 2) experiential learning activities in a facilitated face-to-face format with groups; 3) one multi-cultural workshop; 4) online media, quizzes and feedback to enhance learning; and 5) an asynchronous online discussion forum with international counterparts. CQ measures were obtained pre- and post-course and used as a self-rated indication of intercultural competence development.

Fourteen undergraduate (2nd year) Japanese students enrolled in a 15-week course as part of an international study abroad (ISAC) preparation program (Hayase, 2017; Roux & Angove, 2017). The average age was 19 with gender balance almost equal. An audience analysis, conducted at the inception of the project (Roux & Suzuki, 2016, 2017a,b), indicated a highly motivated, predominantly Asian group of mostly intermediate to advanced English second language learners. The ISAC program provides higher-level, additional English-based content classes over 3 years which can include a short or longer sojourn abroad. Students met weekly for a 90-minute, F2F class in a PC lab with Wi-Fi and audio-visual equipment.

5.2.1 Course designs for CQ

In line with our project goals, and cognizant of Fischer's (2011) contention that intercultural training needs a pedagogy that can support the development of CQ, we designed a course that would reflect this goal in content, depth and scope. We incorporated ID principles that would ensure the effective dissemination of learning, track and evaluate the learning process itself and deliver research data for a learning analysis. This complex set of goals, with the accompanying rationale and content examples are displayed in Table 14. Three broad areas of the course are covered: 1) learning content, 2) assessment and evaluation and 3) research. Each of these domains are then broken down into summarized segments, indicating the relevant learning considerations and rationale in relation to CQ development.

Textbook study consisted of academic-type readings with comprehension activities, Japanese translations of vocabulary and downloadable materials. Classroom work typically consisted of facilitated group- and/or pair work, engagement with online media, short lectures, online (asynchronous) discussion with international and local counterparts, and weekly learning reflections, utilizing online feedback/evaluation formats developed by the instructor. The course further utilized four (summative, quiz-type format) evaluations for grading purposes that also included formative evaluation sections for continued course design purposes. The online discussion forum (Moodle-based), entitled 'International Virtual Exchange project' (IVE)[12] is hosted at the Muroran Institute of Technology and maintained through a Japanese government funding grant. The program connects local and international colleges and currently incorporates 9 countries. The asynchronous forum relies on English as a lingua franca (ELF) and we were teamed with colleges in Tokyo and Colombia.

A multi-cultural workshop (Roux & Suzuki, 2016, 2017a,b) was embedded as an additional intercultural learning experience within the larger course framework. As an indicator of intercultural education and its influence on the development of CQ, we surveyed participants pre- and post-course with the Cultural Intelligence Scale (CQS) using a 7-point Likert type scale. The CQS captures a self-rated ability to perform and adapt in diverse environments and can be used as a diagnostic tool for intercultural success (Ang et al., 2011; Fischer, 2011).

[12] International Virtual Exchange Project https://iveproject.org/

Table 14. An ICC learning course to develop CQ, using a BL approach

Design Consideration	Course Element	Content and Rationale
Learning Content	▪ Textbook (8 chapters)	Title: 'Culture and Conflict: Changing the World for the Better' / For the development of cultural understanding - CQ knowledge/behaviour.
	▪ Classroom worksheets	Instructor-developed, topical experience- and/or content-based worksheets to enhance the text. Focused on personal CQ development and linguistic support.
	▪ Mini lectures (8)	Short topical lectures developed to enhance the text.
	▪ Experience-centred learning activities	Topical activities (brainstorm, group & pair discussions, mini-presentations, 'show-and-tell' activities, etc.) to enhance conceptual understanding and peer-interaction.
	▪ Multi-cultural workshop (1)	Title: 'Does race matter?' Voluntary attendance to an open workshop. Mixed audience with local and international students.
	▪ Online media	Topical videos, talks provided by teacher and/or students. Example: YouTube & TED Talks. Subtitles provided where possible.
	▪ IVE Project (4 topics/8 weeks)	Moodle based, asynchronous online discussion exchange with international counterparts to develop linguistic skills (English as a 2nd language) and intercultural competence.
	▪ Homework[13]	Reading for comprehension, listening, vocabulary study and answering topical questions in relation to the content.
Assessment & Evaluation	▪ Online review quizzes (4)	Summative quizzes for learning assessment purposes.
	▪ Online feedback surveys (13)	Formative evaluation for a qualitative understanding of learning progress and problems.
	▪ IVE Project	Qualitative evaluation of online discussions to gage levels of interaction, issues, topics and potential problems.
Research	▪ CQ Scale	Surveyed pre/post course to establish a self-measurement of cultural intelligence and the postulated development thereof.
	▪ Online surveys (weekly)	Formative/summative evaluations and feedback were combined in one survey-type quiz to provide a sense of learning progress.
	▪ IVE Project	Analysis of online discussions to obtain a quantitative and qualitative sense of engagement and learning patterns.

5.2.2 Course implementation

The 15-week course plan with weekly lesson contents is shown in Table 15 with concomitant learning elements and research dimensions. Our framework (Roux & Suzuki, 2016, 2017a,b) supported an integration with the BL model and intercultural

[13] Following a flipped-classroom model, audio recordings of the textbook readings were made available at http://shohakusha.com/free/sound

Table 15. An intercultural learning course to develop CQ

	Lesson contents	Learning elements	Research elements
1	▪ Introduction ▪ CQ Scale	▪ Content orientation & overview	▪ CQ Scale: Time 1
2	▪ Chapter 1: Thinking about Culture	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 1 (online)	▪ Formative feedback 1 (online)
3	▪ Explanation and enrolment: IVE Project – Unit 1: Introduction	▪ Asynchronous online discussion for linguistic & CQ development	▪ Qualitative analysis of online discussions
4	▪ Chapter 2: Hidden Culture & Differences	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 2 (online)	▪ Formative feedback 2 (online)
5	▪ Review 1: Chapters 1&2 ▪ IVE Project – Unit 2: My Place	▪ Online Quiz 1: Summative evaluation ▪ Learning reflection 3 (online)	▪ Formative feedback 3 (online)
6	▪ Chapter 3: Conflict	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 4 (online)	▪ Formative feedback 4 (online)
7	▪ Chapter 4: Identifying Conflicts	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 5 (online)	▪ Formative feedback 5 (online)
8	▪ Review 2: Chapters 3&4 ▪ IVE Project – Unit 3: Events in our lives	▪ Online Quiz 2: Summative evaluation ▪ Learning reflection 6 (online)	▪ Formative feedback 6 (online)
9	▪ Chapter 5: Values and Belief Systems	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 7 (online)	▪ Formative feedback 7 (online)
	▪ Workshop: 'Does race matter?'	▪ Multi-cultural workshop ▪ Learning reflection	▪ Analysis of audience feedback
10	▪ Chapter 6: The role of Values in Intercultural Conflict	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 8 (online)	▪ Formative feedback 8 (online)
11	▪ Review 3: Chapters 5&6 ▪ IVE Project – Unit 4 (final): Plans for the future	▪ Online Quiz 3: Summative evaluation ▪ Learning reflection 9 (online)	▪ Formative feedback 9 (online)
12	▪ Chapter 7: Perceptions	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 10 (online)	▪ Formative feedback 10 (online)
13	▪ Chapter 8: Stereotypes	▪ Mini lecture & activities to address CQ development ▪ Learning reflection 11 (online)	▪ Formative feedback 11 (online)
14	▪ Review 4: Chapters 7&8	▪ Online Quiz 4: Summative evaluation ▪ Learning reflection 12 (online)	▪ Formative feedback 12 (online)
15	▪ Consolidation & reflection ▪ Conduct CQ Scale	▪ Learning reflection 13 (online)	▪ Formative feedback 13 (online) ▪ CQ Scale: Time 2

learning contents to develop CQ could thus be adapted in such a way as to combine F2F instruction with online elements. The final design thus incorporated all the elements as described thus far, with relevant components for data collection. Steps 1-4 in the project are visualized in Figure 28.

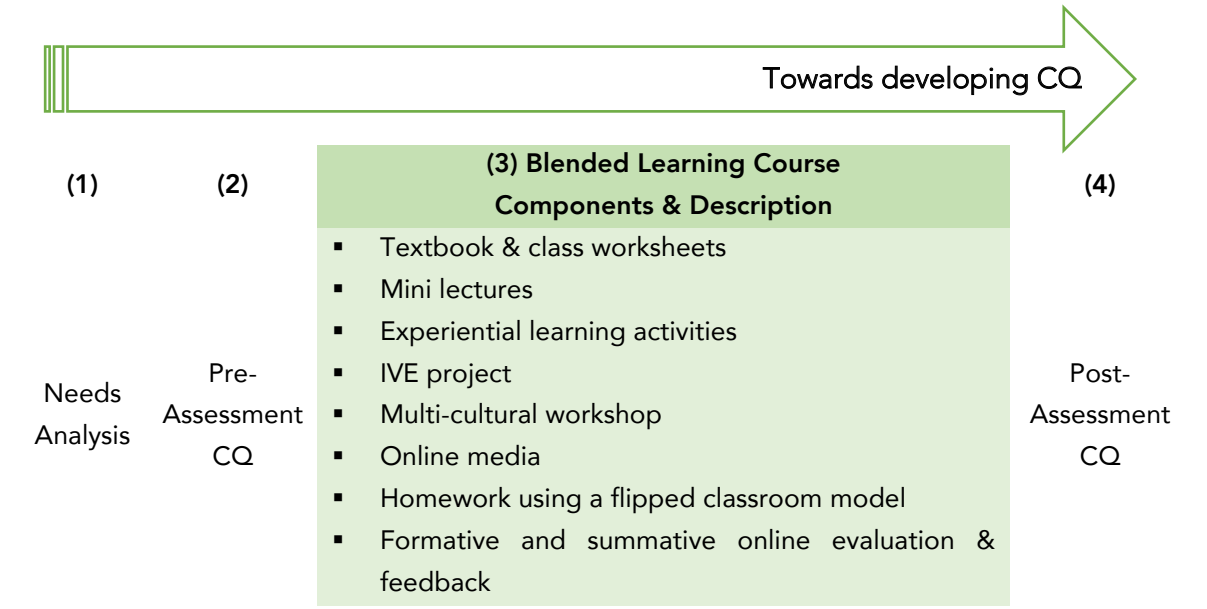


Figure 28. Outline of steps in the investigation

To assess and track student progress in relation to our intercultural education course and its influence on CQ development, we surveyed participants pre- and post-course with the Cultural Intelligence Scale (CQS) using a 7-point Likert type scale. The CQS captures a self-rated ability to perform and adapt in environments characterized by diversity and has been used for research purposes as a diagnostic tool to measure intercultural competence (Ang, Van Dyne & Tan, 2011; Fischer, 2011).

To track learning progress, summative and formative evaluations (see Tables 14 & 15) took place at 4 intervals, providing a sense of learner engagement and performance, used as feedback to guide instruction. Learner responses were captured using online survey forms (via Google). These provided a useful and ongoing means of tracking learning engagement, adding an adaptive dimension to the design of instruction as the course progressed. The visual below (Figure 29) depicts all the theoretical and practical elements for this investigation.

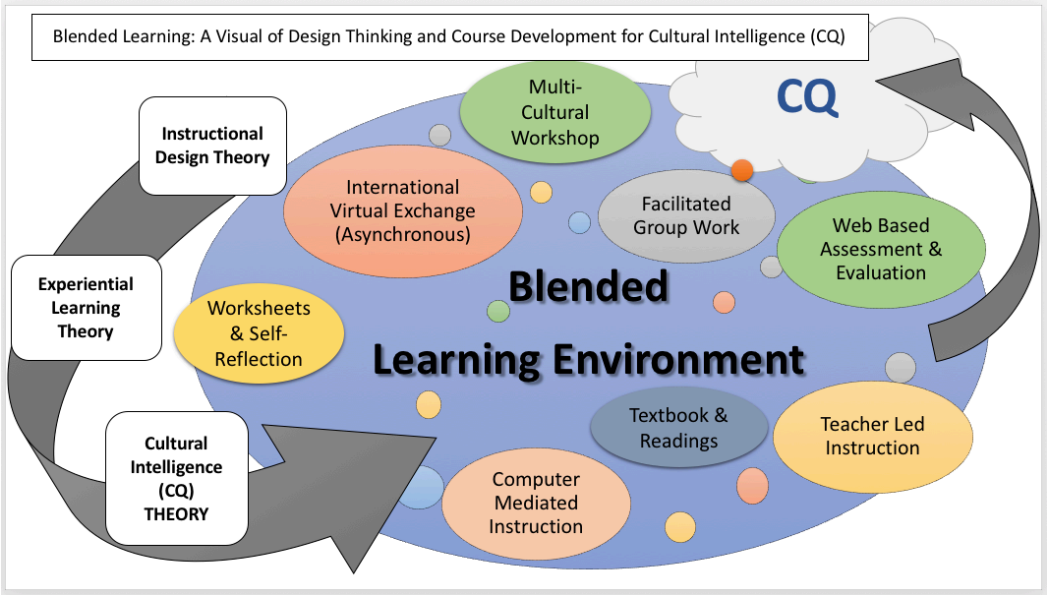


Figure 29. A blended learning model for developing CQ

5.3 Results

We present the results as follows: (1) summative assessment (4 online quiz-type reviews) to show student learning and performance; (2) a sample of learner feedback to accompany the summative assessment across the 4 quizzes; (3) a statistical analysis of the pre- and post-course CQ surveys to determine if there was a significant change in these self-rated scores; (4) learner feedback regarding the IVE to enhance understanding of intercultural learning; (5) a summary of learning feedback gathered as part of the formative reviews conducted throughout the course, specifically in relation to intercultural skill development and CQ. Results for the multicultural workshop will be reported elsewhere to continue earlier reports (Roux & Suzuki, 2017a,b) on its development.

5.3.1 Student learning and performance

Results from the summative assessment from scores obtained across the 4 quizzes show a class average performance of 88% for this learning assessment component (Table 16). The high average performance could perhaps be explained by the fact that we used an open-book test format to gain maximum engagement with the learning material, and that each quiz covered only two textbook chapters

with 10 multiple-choice questions for each chapter. Pointedly, and as part of a formative assessment, students responded to specific learning moments or issues which are included here to show learner response but will be analyzed at a later stage.

Table 16. Contrasting summative & formative feedback across 4 course reviews

Summative Feedback		**Results (sample): Formative Feedback**
Method & Tools	Average	Samples from the free comment section of reviews
Review Quiz 1	90%	S1: I can learn some ideas of culture in this class; this is valuable time. S2: I didn't prepare by reading so the class was a little difficult. S3: I have never think about culture deeply… this time I could learn about culture. In addition, I could learn that culture can divided into 3 parts. Before this lecture, I think culture depend on each country or community. But now I think culture have more deep meaning. For example, visible culture, hidden culture and cultural roots. Visible culture can change easily, however hidden culture is difficult to change. Hidden culture and cultural roots are difficult to understand, so sometimes cause conflict. I understood why conflicts happen between communities. Chapter 1 and 2 are good contents to think about culture which surround us. S4: I had a good study about culture through the lessons. I want to use the knowledge which I learned when I interact with international people.
Review Quiz 2	90%	S1: I could learn about conflicts. I was surprised because conflicts have positive synergy and negative aspects. S2: People are different; we should try to understand others. S3: It was difficult for me to learn about conflict because there were many kinds in conflict. S4: Lesson about chapter 3 and 4 was very interesting especially, there are negative conflict and positive conflict.
Review Quiz 3	85%	S1: When I compare my answer with my partner, I found differences in ranking… each person has own values and opinions. S2: This chapter was difficult for me. S3: I found it difficult to think of my important personal or cultural values. Through this chapter, I could know what the belief and value for me is deeply. Moreover, I realized I am happy now. S4: I want to make a habit of learning or something such as learning other language or practice sports. Do you know good way to continue to something?
Review Quiz 4	90%	S1: I wanted to study about textbook's passage. I didn't understand the chapters deeply. The way of active learning was good. However, I would like to study or get to know further about conflict and culture. S2: I learned many things from this class, for example it is important to take another perception when you encounter some difficulties. The class is good time for me. S3: It is difficult for me to understand this chapter. However, through read this chapter more deeply, I found that it is interesting and important for me to understand another person. S4: This class was very interesting because there are a few chances that I can learn and discuss cultural conflict and working with a group. Thank you for teaching this class.

A further content-related written task was included in each quiz to check comprehension and pick up on issues with the learning content; however, this task was not formally assessed as part of the student grade.

5.3.2 Learner feedback

Table 16 further provides selected samples from the learning feedback we collected as part of the review quizzes. These show a variety of responses that we will analyze in full and report elsewhere; for present purposes, we summarize observations into three broad themes: (1) specific learning content-related thoughts, opinions and questions; (2) general learning observations regarding both the contents and process of learning; and (3) student reflections that signified a very personal engagement with the class/learning contents, such as thought-provoking/challenging questions and/or particularly emotional responses. Methods that bring together learners' previous experiences, link conceptual foundations with practice and encourage reflection are pivotal to learning (Lewis & Williams, 1994) and are the hallmarks of experiential learning, one of the core principles embedded in our framework (Roux & Suzuki, 2017a,b).

In reading these student learning reflections, we were impressed with the level of engagement and depth of consideration displayed. The depth and variety of reflection support the contention that learning is not only a very personal process, but also that this process can be tracked and captured via technological means and analyzed to improve teaching and learning. It appears that our framework, which incorporated the online feedback surveys, in combination with the BL approach managed to capture these learning processes very well.

5.3.3 CQ development

Results from the analysis of the pre-/post-course CQ surveys were a central indicator for the development of intercultural competence in this course and we applied it here to augment the formative feedback we collected. We used the Wilcoxon signed-rank test to compare our two matched samples (treatment 1 – pre-, and treatment 2 – post-course) to assess whether the mean ranks of our group differ. This test was chosen because of the low N size (13) and we provide the results in Figure 30. The Z-value is -1.74 and the p value is 0.08; therefore, the result is not significant at $p \leq 0.05$. The W-value is 20.5 and the critical value for N = 13 at $p \leq$

0.05 is 17. Therefore, the result is also not significant at $p \leq 0.05$. Given the very small group size (N=13), we expected that it would be statistically difficult to show significant changes on the CQS for our course.

Treatment 1	Treatment 2	*Sign*	*Abs*	*R*	*Sign R*
74	82	-1	8	5.5	-5.5
78	91	-1	13	9	-9
111	105	1	6	2.5	2.5
63	100	-1	37	12	-12
74	64	1	10	8	8
76	84	-1	8	5.5	-5.5
54	109	-1	55	13	-13
102	110	-1	8	5.5	-5.5
92	98	-1	6	2.5	-2.5
63	87	-1	24	11	-11
96	104	-1	8	5.5	-5.5
87	72	1	15	10	10
94	99	-1	5	1	-1

Result Details

W-value: 20.5
Mean Difference: -9.15
Sum of pos. ranks: 20.5
Sum of neg. ranks: 70.5

Z-value: -1.7471
Mean (*W*): 45.5
Standard Deviation (*W*): 14.31

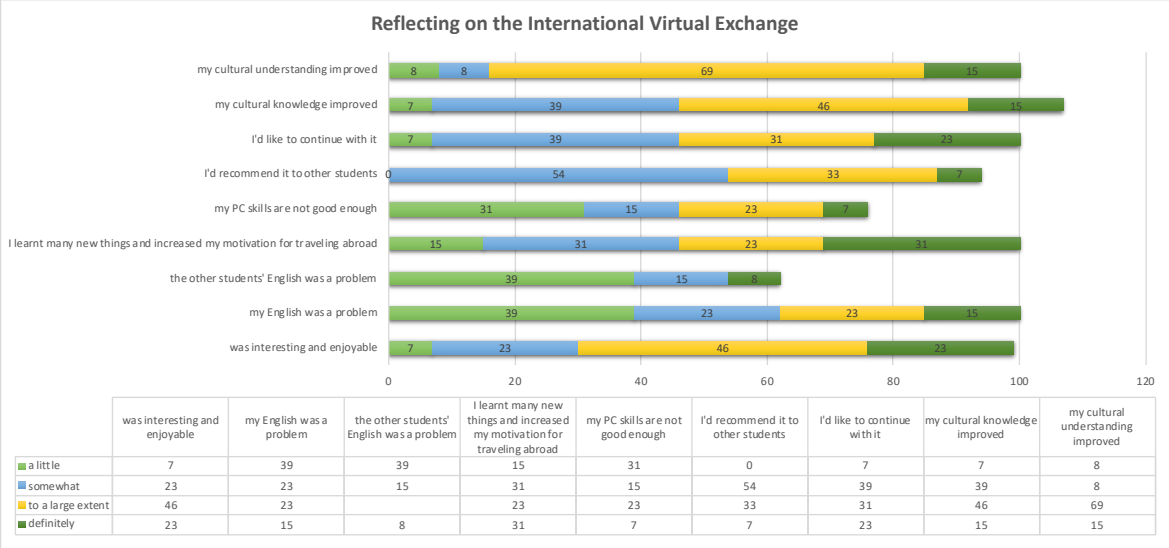
Sample Size (*N*): 13

Figure 30. Results from the CQ surveys pre- & post-course

5.3.4 Learner feedback from the International Virtual Exchange

Results from the learner feedback regarding the International Virtual Exchange (IVE) are shown below in Figure 31. These responses encapsulate a central question related to learners' qualitative estimation of the cultural learning they experienced during their participation in this online, asynchronous forum. We reasoned that these could be usefully added to the previous CQ survey data, together with other formative feedback to provide additional depth to understanding their learning development in the area of intercultural competence. It is noteworthy that across the 4 topic areas covered by the IVE, constituting almost 8 weeks of participation, students self-reported writing between 80-100 comments (in total), while receiving a similar total amount of responses in return.

This is not a very high number considering the period of time and suggests that there was a limited engagement within the forum that might have been influenced by the fact that there was limited class-time made available, its asynchronous format and the fact that it was not 'instructor-driven', i.e. participation carried no reward except the potential benefit coming from the mutual personal investment of engaging with foreign peers. Nevertheless, as the graph below shows, a number of positive observations can be drawn from student reflections.



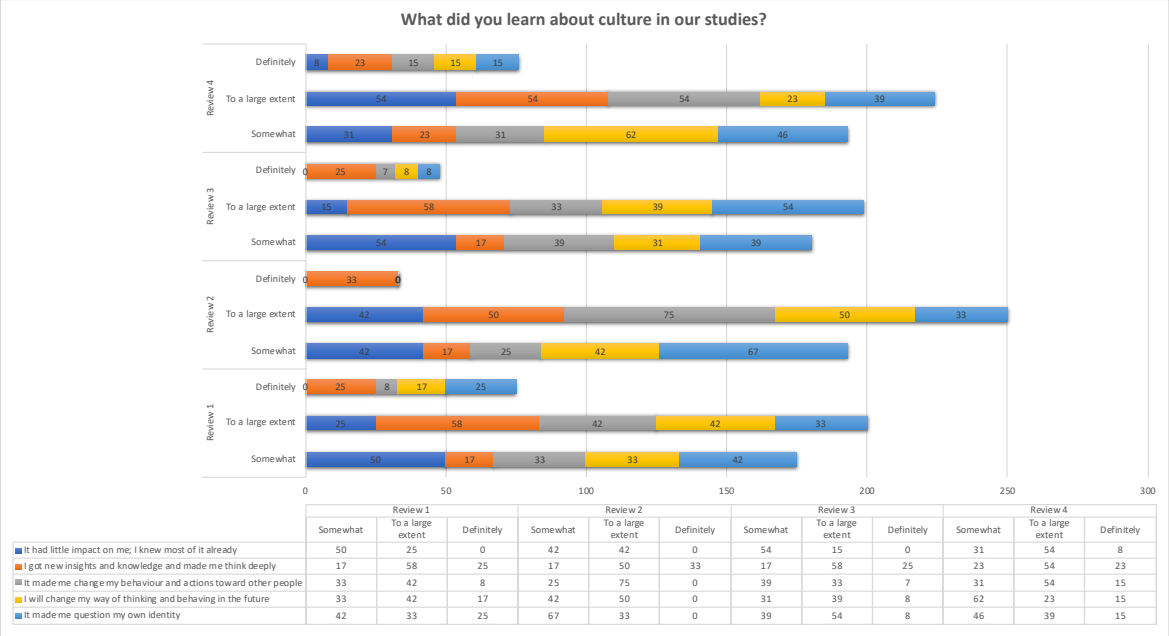
	was interesting and enjoyable	my English was a problem	the other students' English was a problem	I learnt many new things and increased my motivation for traveling abroad	my PC skills are not good enough	I'd recommend it to other students	I'd like to continue with it	my cultural knowledge improved	my cultural understanding improved
a little	7	39	39	15	31	0	7	7	8
somewhat	23	23	15	31	15	54	39	39	8
to a large extent	46	23		23	23	33	31	46	69
definitely	23	15	8	31	7	7	23	15	15

Figure 31. Learner reflections from the International Virtual Exchange (IVE)

As for the IVE impacting on the improvement of cultural understanding and knowledge, as well as the motivation for exploring this area further, the majority of students self-rated very positively, indicating interest, enjoyment and a wish to continue themselves and/or offering it as a recommendation to peers. A smaller but significant group indicated that their PC skills, in their own estimation, were not sufficient. Observations from the F2F situation supported this contention, as the instructor were often occupied with student queries regarding the use of the Moodle platform for uploading pictures, and/or other media, as well as fairly simple procedures in replying to comments. This finding deserves more investigation considering that these students all use smartphones for communicative purposes. A final observation relates to their fairly low rating of confidence/skill using English with other English 2nd language users, and indications that it might have been perceived as a pervasive problem that could have affected the low number of exchanges reported earlier.

5.3.5 Self-estimated cultural learning feedback

Results from learner feedback regarding their self-estimated cultural learning across the course is provided in Figure 32 below.



	Review 1			Review 2			Review 3			Review 4		
	Somewhat	To a large extent	Definitely	Somewhat	To a large extent	Definitely	Somewhat	To a large extent	Definitely	Somewhat	To a large extent	Definitely
It had little impact on me; I knew most of it already	50	25	0	42	42	0	54	15	0	31	54	8
I got new insights and knowledge and made me think deeply	17	58	25	17	50	33	17	58	25	23	54	23
It made me change my behaviour and actions toward other people	33	42	8	25	75	0	39	33	7	31	54	15
I will change my way of thinking and behaving in the future	33	42	17	42	50	0	31	39	8	62	23	15
It made me question my own identity	42	33	25	67	33	0	39	54	8	46	39	15

Figure 32. Learner reflections: Impact of the course on intercultural learning

Considering our investigation goals, it was timed to coincide with the learning reviews/quizzes and aimed at capturing a comprehensive sense of the intercultural learning impact students experienced as the course progressed. Questions were designed to incorporate students' self-rated impressions of knowledge gains, interpersonal skill/behavior and strategies, and an attempt to link these to a sense of personal growth/change. These questions mirror broad themes addressed by the course and we reasoned that having these elements as reflective points in the reviews could help retain an interest for the broader project goals in students' minds. Options for feedback range from judging the course as having little impact to gaining new insight/knowledge and interpersonal behavior change with a perspective to the future and finally, an impact on personal growth. Although results here vary across the four reviews, Review 3 was rated highest, but with all reviews indicating impactful impressions on student minds. This is a positive result with respect to our project goals but will need further investigation both in terms of depth and breadth, which will be obtained through a more comprehensive qualitative analysis.

5.4 Discussion of findings

1) High scores on summative assessment and very positive levels of engagement with formative assessment tasks indicate successful application for the instructional method used in this investigation, i.e. blended learning. Summative assessments have traditionally been used as high-stakes evaluative instruments; however, the shift in the learning paradigm emanating from the blended methods approach is now increasing opportunities for using summative and formative methods as complementary means to understand learning (Looney, 2011). This blending of assessment approaches, together with ready access to learning materials, we believe, added to higher levels of engagement with the content. In addition, since the course was conducted in English, a second language for our students, we reasoned that increasing content exposure would also benefit language learning, even though it was not a directly measured as such. As a result of the online format, students had ready access to their answers and scoring and could approach the teacher easily in the F2F setting. Digital literacy is today identified as one of the four domains of 21st century skills required from students (Kivunja, 2015) and our approach in blending summative and formative assessment in an online format, we believe, exemplifies an approach to learning that allows for maximum engagement with content, simultaneously supporting the development of other academic skills.

2) Learner feedback and learning analysis provided through the online feedback formats indicate activated learning processes, providing support for the combination of experiential- and blended learning formats. Results from the learning feedback that were collected from a formative feedback component that was integrated with every quiz provided very useful insights with regard to student engagement with the learning contents. As indicated previously, this blended form of learning assessment gave opportunities for students to assess their own understanding, going beyond the correct/incorrect dualism typical of summative scores. Importantly for instruction purposes, gathering information and data about learner comprehension helps to build a knowledge base about what is practical and beneficial (both in the content and the manner of presentation) (Looney, 2011). Since course development always continues, this is a crucial capacity to expand and is being usefully accomplished through the online survey formats. We see our current approach as a precursor to utilizing more extensive technological tools and envisage that future developments here

could expand fully into learner analytics and adaptive learning. Essentially, learning analytics is the process of capturing and analyzing all the digital footprints of learners as they engage with an institution of learning to help improve teaching and learning (Sclater, Peasgood & Mullan, 2016). In a review on international practices in this burgeoning field, Sclater et al., (2016, p. 5) points to four advantages of instituting learner analytics in higher education, stating that it could act as a tool for (1) quality assurance and improvement; (2) boosting retention rates; (3) assessing and acting upon differential outcomes among the student population; and (4) as an enabler for the introduction and enabling of adaptive learning.

3) Although the pre/post CQ surveys did not indicate statistically significant support for the intercultural skill development aimed at with our course, there are important reasons to consider in understanding this result. These include the small sample size, moderating influences such as personality and the impact of variables not accounted for here. In a study that correlated CQ developments with cultural essentialism beliefs, Fischer (2011) measured the effects of a brief intercultural training intervention as part of a New Zealand university course (N=107) but found no significant effect for the tested hypotheses. Among his findings were the observation that personality factors constituted a powerful moderating effect on results. He contends that intercultural interventions have some effectiveness in increasing intercultural awareness in that such learning is often instigated and developed through participation in such activity. Given CQ's 4-factor model that encapsulates intercultural development on the metacognitive, cognitive, motivational and behavioral levels, we could further analyze results at this level to ascertain effects; however, our small sample size mitigates against proving significance and would perhaps be better followed up in future investigations with larger groups.

4) Broad measures of the course's effectiveness should consider the combined results from the student feedback regarding the IVE, course content and personal reflections. Methods that bring together learners' previous experiences, link conceptual foundations with practice and encourage reflection are pivotal to learning (Lewis & Williams, 1994) and are the hallmarks of experiential learning, one of the core principles embedded in our framework (Roux & Suzuki, 2017a,b). In reading student learning reflections, we were impressed with the level of engagement and depth of consideration displayed. The depth and variety of

reflection support the contention that learning is not only a very personal process, but also that our framework, in conjunction with the BL approach managed to track and capture these developments well.

5.5 Conclusion and implications for future research

The pace of application and expansion of technology in modern learning environments continue to create pressures for instructional designers to ensure that principles of learning remain intact. Building on earlier efforts aimed at the development of cultural intelligence (CQ) (Roux & Suzuki, 2017a) through an application of instructional design (ID), the current study reported on the expansion of our framework using a blended learning (BL) approach at a Japanese university. Findings indicate that the BL approach could be successfully integrated with the framework and brought about commendable advantages for the F2F environment. Noted positive developments relate to the expansion of intercultural learning activities through online media, reflective learning experiences captured through online means, a cross-cultural asynchronous virtual exchange and online tools for summative and/or formative evaluation and reflection.

Indicators for the development of cultural intelligence (CQ) were statistically not significant, although other forms of evaluation showed effective intercultural learning, in addition to learners' self-reported, increased confidence in areas related to intercultural skill development, critical thinking and digital literacy. Implications from this study point to the utility of integrating our framework with the BL approach and its subsequent potential to provide insights into general, and intercultural learning processes. Further applications are discernible in the course engagement patterns, which include the capacity to track and provide insights into intercultural learning and -skills development. Findings here indicate a comprehensive capacity of our framework to capture and assist in understanding the necessary elements for understanding learning behaviors in and we feel cautiously optimistic that with continued refinement, our framework and method will continue to be incorporated into course design and development, and perhaps be utilized in designs for adaptive learning in the area of developing CQ.

Postscript

This chapter presented **Phase III** of this study, which constituted an iterative design phase. Anchored to the SAM and informed by the original framework, this phase supported an extensive cycle of the design for, and prototype construction of a 15-week intercultural learning course to support CQ development. A key additional feature of this expanded iteration was the adoption of a BL model that was integrated with the original framework. This expanded frame continued to function as an organizing influence, with the BL model helping to activate several of the technology-supported learning, assessment and evaluative activities. The additional online support that were incorporated through the BL model formed the backbone for the series of evaluative and research-driven activities of the course. In this way, the BL design element gave rise to, supported and integrated the cyclical evaluative reviews and data collections.

Findings could broadly be summarized along four themes: 1) learner engagement, as assessed through summative and formative evaluations of the course, were very positive and indicative of intercultural learning gains and skills transfer, such as increased digital literacy; 2) learning feedback indicated that the EBL model and BL format interacted well to support learning in ways that increased students' access to course content and evaluation, thus deepening engagement and providing deeper insights into learning comprehension and knowledge uptake for both students and the instructor; 3) although a comparison of pre/post CQ scores were not statistically significant (likely due to the small sample size), the other effects that were observed reflected ICC learning gains; these findings were comparable to research findings cited elsewhere; and finally, 4) a broad observation that considered all the results/feedback of the different course elements suggest that as a whole, ICC learning took place; this is most evident in the learning feedback of the EBL activities and students' final course feedback evaluations.

Taken together, these broad indicators from Phase III connect well to the overall intention behind the project, which is largely aimed at exploring what kinds of instruction can facilitate ICC development, and how the application of relevant methods and tools in the design of BL can develop CQ. In terms of the goals set out at the end of Phases I & II, these findings appear to be well-aligned extensions of the investigation and are taken here as indicative of a successful expansion and iteration.

CHAPTER SIX

Iteration 1.1: Course Development & The Outcomes of Blended Learning

Prologue

The previous chapter presented Phase III of this investigation, which consisted of an iterative design phase that utilized a BL format as prototype to support and investigate the development of CQ. Discussion now turns to a presentation of **Phase IV** and **Phase V,** which in the SAM, refers to an '**iterative development phase'**, that emphasizes implementation (Figure 33 at the end of this section). Essentially, Phase III was taken forward in a further iteration (Phase IV), delivering a set of results that were in part independently evaluated. This process, the outcome of the independent CQ measurement, as well as a subsequent report of learners' self-perceived CQ advances, are the main focus points of this chapter. In addition, a further evaluative component was designed in the form of a learning checklist, and preliminary results from this are also presented here.

The independent measure of participants' CQ development (pre/post course), was obtained through the Cultural Intelligence Center[14] based in Michigan, United States. This was mostly a quantitative measurement. Preliminary results and findings were presented at the International Conference for Media in Education (ICoME) in Cheongju, Korea, in 2018 and published in the proceedings. Building on this, a peer-reviewed article was published in the International Journal of Educational Media and Technology (IJEMT, 2019)[15]. This article is presented forthwith as the first main section of this chapter.

The second element concerned an exploration and analysis of participants' self-perceived CQ growth developments, tracked through classroom feedback. This could perhaps be considered a more 'internal' (from 'inside' the course), and contextualized evaluation that involved a qualitative analysis of participant feedback.

[14] The Cultural Intelligence Center https://culturalq.com/

[15] Roux, P. W., Suzuki, K., Matsuba, R., & Goda, Y. (2019a). 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.

Results and findings – with a view to tying the CQ concept to the notion of a 'global mindset' – were presented at a student conference of the Japanese Society for Information and Systems in Education (JSISE), Saga chapter, 2017 and published in the proceedings. Taking a slightly different angle on the research data, a further presentation was prepared for the national conference of JSISE in Sapporo, 2018 and published in the proceedings. Building on this, a peer-reviewed article was published in the Journal of Information and Systems in Education (JISE, 2019)[16]. This article is presented as the second major section of this chapter.

A third evaluative element – a learning reflection checklist – was developed during a later iteration and added to Phase V. Taken together, these three components attempted to obtain further perspective of the investigation through tracking CQ growth as well as the effectiveness of the course in achieving this. In keeping with the cycle of ongoing development, design features were continuously refined. Phase V contained relatively minor refinements, and will not be explored in any further detail in the current chapter, except to present the learning reflection checklist that was utilized at the end of that iteration. The purpose behind this was mostly evaluative in terms of course content, to confirm learning achievements for participants, gain formative learning impressions, and potentially, to help triangulate data analyzed through other means elsewhere in the course.

Note that Appendix 3 contains all the supporting materials for this chapter. It contains the independent measurement report issued by the CQ Center, the data and analyses supporting that report, proceedings from 3 conferences, the two peer-reviewed publications with supporting data analyses, and the learning reflection checklist's preliminary data analyses. The reference list for the mentioned publications is included in the reference list for the whole investigation.

[16] Roux, P. W., Suzuki, K., Matsuba, R., & Goda, Y. (2019b). Examining the Self-Perceived Development of Cultural Intelligence (CQ) in a Blended Learning Environment. *Journal of Information and Systems in Education, 18*(1), 69-76.

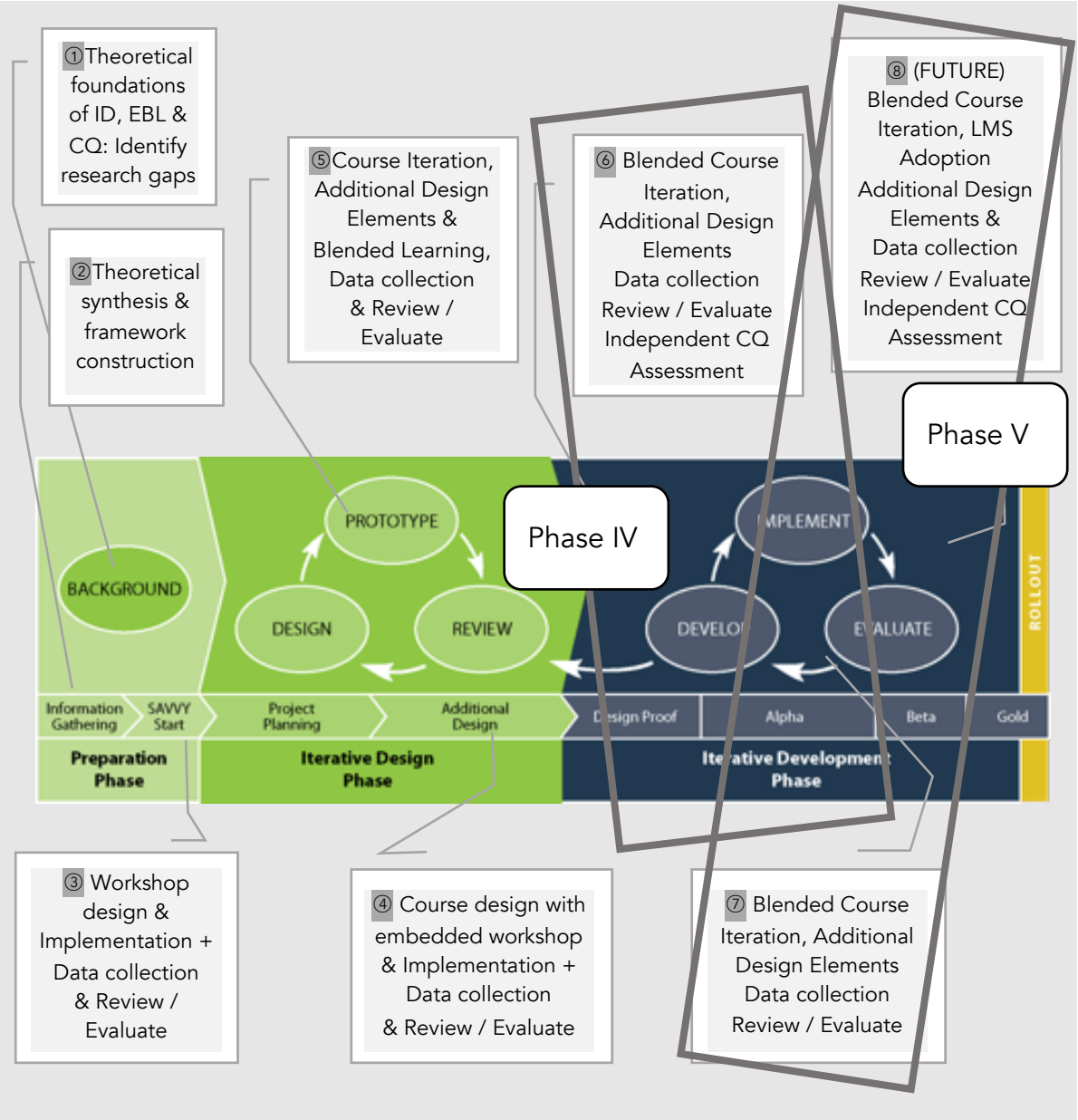


Figure 33. Phases IV & V of the Investigation utilizing the SAM

6.1 Designing Instruction to develop Cultural Intelligence (CQ): Reporting on Blended Learning Outcomes at a Japanese University

Abstract

As part of a broader project concerned with an application of instructional design (ID) to cultivate cultural intelligence (CQ), this study reports on the intercultural learning outcomes of a group of Japanese undergraduates. Utilizing the project's previously constructed framework in a blended learning environment, the course involved students in a face-to-face environment that included a culturally diverse online exchange, topical lectures, classroom activities and various forms of media. Course engagement and learning feedback were tracked through a series of synchronous online surveys. Pre- and post-course individual and group measures of CQ were obtained online through the Cultural Intelligence Center. Results show significant advances in CQ for the majority of participants when measured against worldwide norms. Findings are discussed with reference to designing instruction for intercultural learning and with a consideration towards the implications for the larger project and the development of learning in this area.

Keywords: blended learning, cultural intelligence (CQ), experiential learning, instructional design, Japanese universities

6.1.1 Introduction

The increasing reach and utilization of online learning continue to influence organizations globally. Computers and the adjacent developments in 'smart' technologies are increasingly providing new means for personalizing learning, assisting in the design of learning through an exacting assessment of learner needs and knowledge, as well as in the measurement and capture the learning process and its outcomes. In many ways, technology is succeeding as a formidable partner in education. Increasingly however, there appears to be an ever-widening divide between the profusion of technological features on offer and a shortage or non-existence of teaching principles, and/or methodologies to accompany or support it (Alonso, López, Manrique & Viñes, 2005). This trend raises a radical challenge for educational establishments and further forefronts the central role of instructional design, given its concern with how to meaningfully incorporate technological advances in established educational paradigms, pedagogies and learning traditions.

The globalization of education has further led to the proliferation of online learning, connecting very different cultures and learning traditions and resulting in an increasing diversity in online learning groups. It therefore seems vital that educationists should consider not only the cultural sensitivity and appropriateness of educational methods and pedagogies, but also the intercultural competence of course participants that engage in online environments (Parrish & Linder-Vanberschot, 2010; Rogers, Graham & Mayes, 2007; Clem, 2004). The current project (Roux et al. 2017a,b; 2018a,b,c) brings together a number of these overlapping issues through a focus on training and structured learning as necessary components in developing intercultural skill, with specific consideration towards utilizing online technologies to enable the development of cultural intelligence (CQ).

Cross-cultural competence, knowledge and skills are today recognized as a vital ingredient for the skillset of a global citizen (Fischer, 2011, Roux, 2018). Universities have long been expected to prepare graduates for future careers but the notion that the diversity of learning environments (physical or virtual) can be exploited to support the skill development of students seems to have been slow in gaining traction, partially perhaps due to the lack of an integrated underlying pedagogical approach, as Fischer (2011) points out. There are some positive indications to the contrary however. Embarking on a new educational initiative in 2011, the Japanese government (MEXT, 2018) has set a series of requirements for universities to emphasize an education that would result in more 'internationally minded' graduates. This vision appears to consider the fact that graduates are increasingly likely to work in diverse environments, regardless of whether these will be based in local or global contexts, as pointed out by some authors (Livermore, 2011; Fischer, 2011).

The expanding need for continued and deeper understandings of cultural diversity in recent years saw the notion of CQ come to the fore. This concept is defined as 'an individual's capability to function effectively in culturally diverse settings' (Ang, Dyne & Tan, 2011). Research in this area has grown exponentially in recent years, and the concept of CQ, through its focus on the personal capacities that would bridge cultural differences, has assisted in the integration of the somewhat fragmented field of intercultural studies (Ang, Van Dyne & Rockstuhl, 2012). According to the Cultural Intelligence Center, four CQ capabilities characterize the intercultural capacity of a person: (1) CQ drive, which relates to a person's motivation, interest and confidence in settings with cultural diversity; (2) CQ

knowledge, which refers to knowledge about how cultures are similar or different; (3) CQ strategy, which is how a person makes sense of culturally diverse experiences and social situations; and, (4) CQ action, which signifies a person's capability to adapt their verbal and non-verbal cultural behavior to appropriately suit a particular context. CQ is thus similar to, yet distinct from, IQ (general mental ability) and EQ (emotional intelligence) in that it measures a set of capabilities necessary for personal and professional success that focuses on multicultural contexts. CQ has been demonstrated to predict adjustment, well-being, cultural judgment and decision-making, as well as task performance in culturally diverse settings (Ang et. al., 2012). Studies have further shown that CQ retains predictive validity over and above demographic characteristics, personality, general mental ability, emotional intelligence, cross-cultural adaptability inventory, rhetorical sensitivity, cross-cultural experience, and social desirability (Ang et al., 2012). The notion of CQ as an encapsulating construct for intercultural training and development is therefore very appealing, since it offers a broad yet practically useful and robust understanding that focuses primarily on the skills and capabilities needed to be successful in situations characterized by cultural diversity, whether these are international or domestic contexts.

These trends and developments suggest that instructional designers need to remain aware of culture's pervasive presence in the learning process, take seriously some of the reported neglect in consideration of the cultural influences in e-learning (Henderson, 2007; Parrish & Linder-Vanberschot, 2010) and take care to actively incorporate a cultural awareness as part of their approach to curricular design and instruction (Clem, 2004; Thomas, Mitchell & Joseph, 2002). Earlier reports (Roux & Suzuki, 2016; Roux et al., 2017a,b; 2018a,b,c) drew attention to these aforementioned observances which informed initial points of departure for our project. Preliminary project work focused on the development of a multi-disciplinary conceptual framework (Roux & Suzuki, 2017a,b) which anchored an intercultural training workshop to encourage the development of cultural intelligence (CQ) in Japanese undergraduates. This framework utilized instructional design (ID) theory and further incorporated CQ theory (Early & Ang, 2003; Ang, Van Dyne & Tan, 2011) and experiential learning theory (Kolb, 1984). Findings from this initial step indicated a successful integration of theoretical departure points and the incorporation of experiential learning to develop CQ, providing a basis for expansion of our project (Roux & Suzuki, 2017a; Roux et al., 2018a,b,c).

Subsequent project expansion focused on the application of our model to the development of a semester-long blended-learning course (Roux et al., 2018a,b,c), mindful of Fischer's (2011) contention that intercultural learning requires a pedagogy that can support the growth of CQ. Blended learning refers to methods of learning that mixes various event- or experience-based activities and may include live e-learning (synchronous), self-paced learning (asynchronous) and face-to-face classrooms (Alonso et al., 2005; Watson, 2008). The course continued for two semesters with two separate student groups, successfully integrating our framework with the blended learning model (Roux et al., 2018a,b,c). The project further extended a theoretical reach (Roux, 2018), toward including the notion of a 'global mindset', a term which has become popular in Japanese higher education to signify some of the stated goals in the internationalization of Japanese tertiary institutions. The concepts of CQ and a global mindset are conceptually similar in that a person with higher CQ are more likely to develop a global mindset, as is suggested by Lovvorn & Chen (2011).

Notable developments achieved thus far through the incorporation of the blended model in our project included the expansion of intercultural learning through online media, reflective learning captured through online means, a cross-cultural asynchronous virtual exchange and the development of online tools for summative and/or formative assessment and reflection (Roux et al., 2018a,b,c; Roux 2018). Although indicators for the development of CQ (using a paper version of the original CQ survey) (Van Dyne, Ang, Ng, & Koh, 2008) were statistically not significant as measured in the first semester of the course, other measures taken at the time (formative, summative assessment and course feedback) indicated effective intercultural learning (Roux et al., 2018a,b,c). A qualitative analysis that further explored learners' self-reports and reflections indicated increased confidence in areas related to intercultural skill development, critical thinking and digital literacy (Roux et al. 2018a,b,c). In the second iteration of the course, we utilized the online version of the CQS, as provided through the online service of the Cultural Intelligence Center (www.culturalQ.com) and achieved a different set of results, which is presented here as the primary focus. These results show developments in the self-reported CQ scores of participants when compared to worldwide norms, providing additional support for the efficacy of our framework, course design and instructional methods. For the current purpose, we present an analysis and discussion of these findings and consider the implications for the design of instruction that seeks to promote the development of CQ in tertiary contexts.

6.1.2 Research design, Methods & Procedures

The current project continues to draw on a framework that uses an interdisciplinary approach to synthesise well-known instructional design (ID) models (Keller's ARCS model, 2000; ADDIE model, see Molenda, 2003) with Experiential Learning Theory (Kolb, 1984) and intercultural theory, as represented through use of the construct of cultural intelligence (CQ) (Ang et al., 2011). Earlier results and findings suggested a successful integration in a framework with a design sequence that supported intercultural learning (Roux & Suzuki, 2016, Roux et al., 2017a,b; 2018a,b,c). To investigate the development of CQ, we designed and implemented a 15-week intercultural communication course that combined: 1) traditional educational methods in a face-to-face classroom environment; 2) experiential learning activities in a facilitated format; 3) one multi-cultural workshop; 4) online media, quizzes and feedback formats (summative and formative) to enhance and understand the intercultural learning processes; and 5) an asynchronous online discussion forum with international counterparts. We measured CQ pre- and post-course using an online form of the CQ survey (E-CQS), provided independently through the Cultural Intelligence Centre. An outline (Figure 34) and full description of the course (Roux et al., 2018a) highlights the blended learning approach we followed to develop and trace CQ.

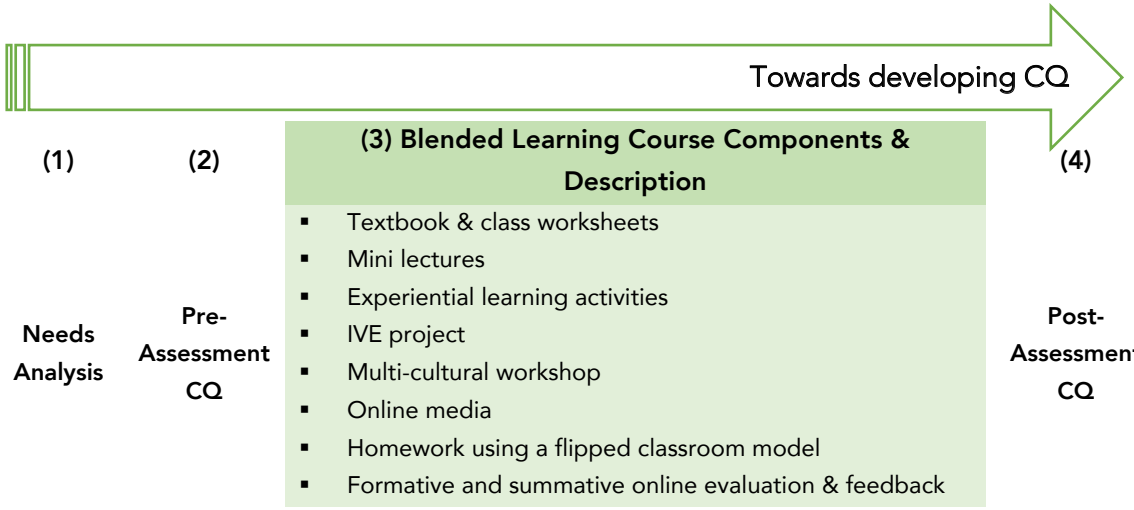


Figure 34. Outline of steps in the investigation

The second iteration of the investigation included 19 undergraduate (2nd and 3rd year) students who participated in a 15-week intercultural learning course. This

course is typically enrolled in by students who are interested in short- and/or long-term study abroad and are purposefully selected to join a program geared toward this end (Roux & Angove, 2017). An audience analysis done at the inception of the project indicated that students in this program are typically highly motivated learners, are predominantly Asian (mostly Japanese) and are intermediate- to advanced-level English second-language learners (Roux & Suzuki, 2017a,b).

The gender balance for the current investigation was 63% female, 37% male and except for one Taiwanese student, all students were Japanese. The majority of the group (64%) reported limited to moderate prior intercultural experience. The class met weekly for a 90-minute, F2F class in a PC lab with Wi-Fi and audio-visual equipment. For reference, a broad outline of the course and contents are summarized and reproduced below (Table 17, adapted from Roux et al., 2017a,b).

Table 17. Course outline and description

Learning Content	▪ Textbook (8 chapters) ▪ Classroom worksheets (instructor designed) ▪ Minilectures (topical contents) ▪ Online media, surveys, feedback ▪ International Virtual Exchange (IVE) Project (4 topics/8 weeks) ▪ Flipped method: textbook reading/audio downloads
Assessment & Evaluation	▪ Online review quizzes (4) (summative & formative) ▪ Online class feedback surveys (13) (formative)
Research	▪ CQ Scale (E-CQS reports provided by Cultural Intelligence Center) ▪ Online surveys (analysis of the formative assessments) ▪ IVE Project (analysis of exchanges with international counterparts)

Instructional methods included variations of facilitated group- and/or pair work, engagement with online media (audio-visual), short lectures by the instructor, an online (asynchronous) exchange with a group of Colombian college students (IVE), and weekly learning reflections that employed online feedback and evaluation forms that were developed by the instructor. To investigate to what extent intercultural education through our course influenced the development of CQ, we surveyed participants pre- and post-course (Time 1 and Time 2, respectively), using an online version of the Expanded Cultural Intelligence Scale (E-CQS). These measured participants' self-reported intercultural capabilities and they received a personalized

feedback report that compares their CQ with the worldwide norms. The instructor received a group-feedback report showing a summary of scores and a group profile description. A set of guidelines provided by the CQ Center assisted in the interpretation of the feedback. The E-CQS is offered on a commercial platform and captures a self-rated ability to perform and adapt in diverse environments which is used as a diagnostic tool for intercultural success (Ang et al., 2011; Ang et al., 2012). Upon completion of the online survey, the reports are automatically generated and made available for download. The data used to generate the reports (and used for subsequent analysis here) was obtained from the CQ Center.

6.1.3 Results

6.1.3.1 Developing cultural intelligence (CQ)

Participants' CQ development were measured pre- (T1) and post-course (T2), using an online version of the Expanded Cultural Intelligence Scale (E-CQS). Figure 35 shows a comparison of the results for T1 and T2, relative to the worldwide norms. Four observations can be made when average score differences between T1 and T2 are considered:

1) there were positive incremental increases on all four self-rated CQ dimensions measured in this group;
2) the increases at T2 surpassed the worldwide average for three of the CQ factors: CQ knowledge (63 vs. 56), CQ action (69 vs. 68), the CQ strategy factor (72 vs. 71), and
3) the CQ knowledge factor increased most markedly (11 average points), and (4) the average self-rated scores for the group – including the reported increases between T1 and T2 – fall within the moderate range (i.e., in the middle 50% of the worldwide norms).
4) Taken together, and in view of the incremental advances from T1 to T2 relative to the world norms, these results broadly indicate that the intercultural education and training provided through our course positively impacted the development of CQ.

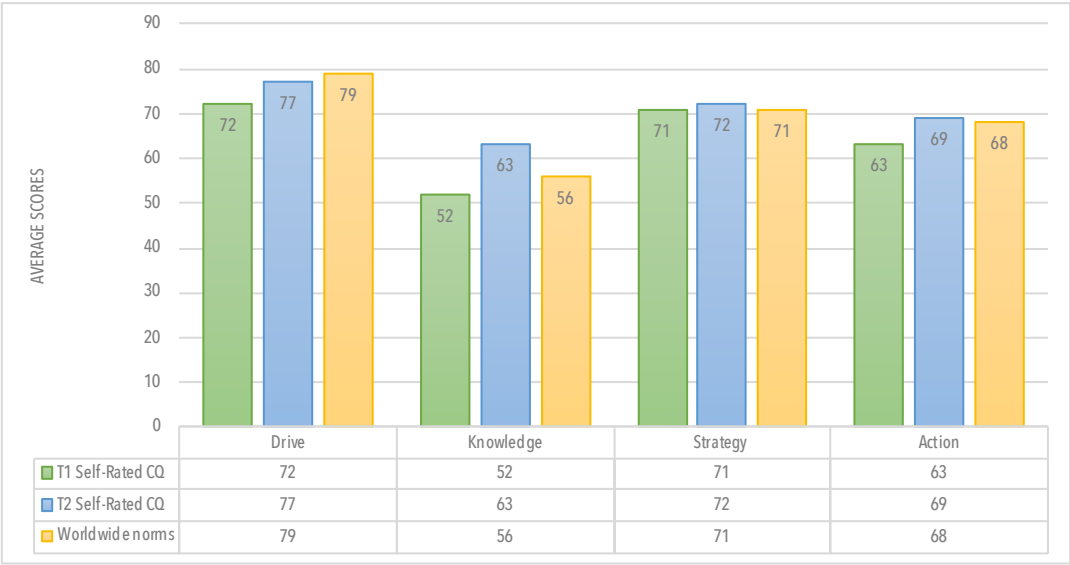


Figure 35. T1/T2 Comparison of self-rated average CQ scores with worldwide norms

A comparison between self-rated CQ average scores and the worldwide norms presented in Table 18 indicates the percentage of change noted in each CQ factor. As pointed out earlier, the CQ knowledge dimension showed the most significant increase (21%), followed by – in diminishing ranked order – the dimensions of CQ action (10%), CQ drive (7%) and CQ strategy (1%).

Table 18. T1/T2 Comparison and analysis for self-rated CQ average scores against worldwide norms

Dimension	T1/T2 average score changes	% Change	T1 compared/ worldwide norms	T2 compared/ worldwide norms
CQ Drive	72 → 77 (5)	7	7 points less	2 points less
CQ Knowledge	52 → 63 (11)	21	4 points less	7 points greater
CQ Strategy	71 → 72 (1)	1	0 points difference	1 point greater
CQ Action	63 → 69 (6)	10	5 points less	1 point greater

Table 19 further compares the T1/T2 comparative changes vis-à-vis the reported worldwide norms on the four CQ factors, and respectively as follows: (1) CQ knowledge increases by 11 points; (2) CQ action increases by 6 points; (3) CQ drive increases by 5 points; and (4) CQ strategy increases by 1 point. On average, all CQ factors therefore improved for the measured period between T1 and T2.

Given the overall relative increases that the group achieved between measurements, we conducted a paired-samples t-test for dependent samples to determine the significance of the increases for each of the CQ dimensions. The reasoning here was primarily to check the significance for our small group's performance within the larger scope of our project, but also as a measure of the potential effectiveness of the current iteration of the course. The results obtained for this group (N = 19) were as follows (see Table 18): (1) CQ knowledge increases were significant at $p < 0.5$, with the value of $t = 6.44$ (M: 0.72); (2) CQ action increases were significant at $p < 0.5$, with the value of $t = 2.98$ (M: 0.4) (3) CQ drive increases were not significant at $p < 0.5$, with the value of $t = 0.38$ (M: 0.05) (4) CQ strategy increases were not significant at $p < 0.5$, with the value of $t = 1.23$ (M: 0.04). The current iteration of the course therefore provides some encouraging results but should be viewed with some caution, given the small sample size (N=19).

Table 19. Difference score calculations & t-values for CQ factors: Pre- & post measures

CQ Knowledge	CQ Action	CQ Drive	CQ Strategy
Mean: 0.72 t is 6.439854. p is <.00001 Result is significant at p < 0.05.	Mean: 0.4 t is 2.981997. p is .00328. Result is significant at p < 0.05.	Mean: 0.05 t is 0.380387. p is 0.70413. The result is not significant at p < 0.05.	Mean: 0.04 t is 1.22655. p is 0.22169. The result is not significant at p < 0.05.

6.1.4 Discussion of findings

1) A primary purpose of the current investigation was to obtain an independent CQ measure for the impact of our blended-learning approach to intercultural skill development with a group of undergraduate students. Based on the

independent report measures provided by the CQ Center (2018), the overall finding that there were positive incremental increases (within the moderate range) on all four self-rated CQ dimensions for this group is therefore very encouraging. This finding was further strengthened through the statistically significant improvements observed with the subdimensions of CQ knowledge and CQ action, suggesting that these dimensions, in particular, were supported through our course. The CQ knowledge dimension is defined as a person's knowledge about how cultures are similar and/or different and includes a knowledge of values and norms, business practices, leadership patterns and socio-linguistic behaviours (Ang et. al., 2012; Cultural Intelligence Center, 2018). In contrast, the CQ action dimension refers to a person's capability to adapt verbal and non-verbal behaviour so that it is appropriate across cultural contexts (Ang et al., 2012; Cultural Intelligence Center, 2018). For these 2 CQ dimensions, we understand then that our learners self-rated their CQ development as gaining significant improvements, which highlights the theoretical (knowledge-related) and linguistic aspects of the cultural learning contents provided in the undergraduate course.

2) A comparatively similar study in New Zealand (Fischer, 2011) reported significant CQ knowledge increases following a brief intercultural intervention embedded in university course and concluded that such interventions are effective in raising intercultural awareness, especially in the sense of providing students with a "reality check" (Fischer, 2011, p. 773) in terms of their intercultural skills and abilities. The finding that students' CQ knowledge (or cognition) can be developed through university academic courses is also reported elsewhere (Eisenberg, Lee, Brück, Brenner, Claes, Mironski & Bell, 2013; Van Dyne, Ang, Ng & Koh, 2008), and the incremental increases in this dimension reported here as a result of our course can therefore further support similar studies in this area. It is further noteworthy that a significant increase in CQ action was observed in our study. Eisenberg et al. (2013) postulates that university lectures typically emphasise cognitive aspects of intellectual development, whereas the emotional and behavioral (or experience-based) dimensions of learning are often neglected. Since the practical nature of experience-based learning adds an additional dimension to the learning process (Kolb, 1984), and specifically to intercultural learning (Macnab, 2012), our project has strived to incorporate this as a foundational principle since inception. Eisenberg et al. (2013) reports that this CQ

dimension is "… readily affected by extensive, purposefully designed experiential learning interventions" (p. 616). It is therefore particularly encouraging that our participants observed an enhanced sense of confidence in the CQ action/behavior dimension upon completion of the course. While these findings are a meaningful result within the larger scope of our project, it should be reiterated that the current sample is small and very localized in the present research context, in addition to the fact that our course is still technically in a developmental phase. We are however, encouraged by the current set of results that appear to support findings elsewhere in this area.

3) Although developments in the CQ drive- and CQ strategy-dimensions were less pronounced (not statistically significant), these factors nevertheless showed improvements. CQ drive refers to a person's motivation, interest and confidence in functioning effectively in culturally diverse settings and includes both intrinsic and extrinsic interest components, as well as a measure of self-efficacy (Ang et al., 2012; Cultural Intelligence Center, 2018). Our learners progressed well in this regard as a result of our course intervention and achieved a result that compares favourably with the stated worldwide norm for this dimension of CQ. A similar result was in evidence for the CQ strategy dimension which improved to slightly exceed the given worldwide norm. CQ strategy, signifying a meta-cognitive dimension, refers to how a person makes sense of culturally diverse experiences, for example making judgments about their own thoughts or those of others. It thus includes an underlying cultural awareness, as well as cognitive aspects of planning and checking in social situations characterized by cultural diversity (Ang et al., 2012; Cultural Intelligence Center, 2018). In slight contrast to the Eisenberg et al. (2013) study, who found pronounced effects on both CQ-cognition and -strategy, our results did not show a statistically significant effect for the CQ strategy/metacognition dimension. This result could be indicative of participants' self-assessed, relative (lack of) confidence development pertaining to this CQ dimension. This result might indicate a contextual factor, namely the largely homogenous population of our students and the absence of regular international counterparts on campus. These circumstances imply that fewer opportunities for exposure to intercultural exchange that could develop these skills in a 'real-world' manner, exist. These insights deserve further exploration and potential development in a future course iteration.

4) It is further important to contrast these findings with other indicators obtained from earlier iterations of this course and the overarching goals of our project. Earlier qualitative findings, gleaned from formative and summative participant performance, course feedback and measurements, indicated advances that could be tied positively to CQ developments (Roux & Suzuki, 2017a,b; Roux et al., 2018a,b,c; Roux et al., 2019b). The current results further enhance and help to validate these earlier findings to some degree; however, in view of the small sample size we interpret the present result with some caution. Furthermore, the current study utilized an online version of the CQ measurement, whereas our earlier study made use of the original paper-based version. A cursory comparison between the two CQ measurements indicates a utilization of the same CQ-factor-structure in both versions; however, questions in the E-CQ version were expanded and also available in Japanese. It therefore may be that these two factors lead to a quantitatively different result for the separate iterations of our course. These observations are speculative at this stage however and will need to be further explored.

5) Intercultural measurement instruments need to demonstrate construct validity and measurement equivalence across cultures and the CQS has demonstrated reliability in these areas (Ang et al., 2018). Given that the CQS is a self-rating scale, a number of studies have also sought to replicate findings with multinational samples and found short and longer-term consistency as well as good internal consistency reliability, as well as predictive validity (Ang et al., 2007; Van Dyne et al., 2008; Ang et al., 2012). Findings from the present investigation, which used the E-CQS with a Japanese population, potentially lend further support to these cited studies and, with replication in other Japanese tertiary contexts, could add to the growing literature on the multinational validation of CQ.

6) Considering the application of our framework (Roux & Suzuki, 2017a,b) in conjunction with a blended learning approach (Roux et al., 2018a,b,c), the current set of results are encouraging. The assessment and research elements we designed fitted seamlessly with other course elements and combined well with existent approaches in blended learning formats for further course iteration, suggesting that our framework is functional and adaptable. The framework's multi-disciplinary integration of ID theories and models, CQ theory, experiential learning theory and the blended learning approach has

demonstrated value through repetition in the current study. We are encouraged to continue in this vein for at least two reasons: (1) there is an existent challenge to provide a pedagogy for intercultural learning in higher education (Fischer, 2011; Eisenberg et al., 2013), and (2) there is an ongoing call for instructional designers to infuse and deepen their methods, materials and practices with due consideration to an increasingly diverse, global student audience (Clem, 2004; Henderson, 2007, Lovvorn & Chen, 2011). We are therefore considering applications of this framework to similar, but larger and more internally diverse participant groups, and expanding it to online environments which could include more instructors.

6.1.5 Conclusion

The current study presents a further iteration in a project that seeks to develop cultural intelligence (CQ) through the application of instructional design (ID) theory and methods. For the present iteration, specific goals were to obtain an independent measurement of the effects on CQ development – utilizing the online service of the Cultural Intelligence Center (www.culturalQ.com) and to consolidate the blended learning approach into our existing framework (Roux & Suzuki, 2017a,b; Roux et al., 2018a,b,c). Results show that CQ scores for our group of participants increased on average, when compared to worldwide norms. Although these increases remain within the moderate range, two of the CQ sub-dimensions demonstrated statistically significant increases, whereas other indicators showed that our group of participants enhanced their CQ as a result of the intercultural learning course.

Current findings further support earlier reports from this project (Roux & Suzuki, 2016, 2017a,b; Roux et al., 2018a,b,c) and helps to validate earlier discoveries and we are encouraged that the findings appear to provide further support for the efficacy of our framework, course design and instructional methods. Future research work will aim to repeat the current investigation in an effort to replicate the results and refine instructional methods with Japanese student groups, but also aim toward applications with diverse groups in Japanese educational settings. In keeping with larger project goals, further efforts will also be given to understanding some of the processes that nurture intercultural learning and the development of CQ, and more specifically, how these might benefit from the application of online technologies.

6.2 Examining the Self-Perceived Development of Cultural Intelligence (CQ) in a Blended Learning Environment

Abstract

This paper examines the self-perceived development of cultural intelligence (CQ) as expressed by Japanese university students taking courses on intercultural learning. An earlier developed instructional framework was employed to support course design and development, which is adapted in the current application for use in a blended-learning format. The development of CQ is explored through a qualitative analysis of data obtained in a series of reflection-based online surveys specifically designed to trace learning response patterns. The results show an array of learning responses that could be thematically organized and qualitatively linked to the development of CQ. We draw connections to the CQ concept via students' self-reported advances in cultural knowledge, skills and strategies, as well as changes in attitudes and beliefs. Course effectiveness and learning engagement are discussed with implications for the design of a learning management system that supports the growth of CQ and the formation of a global mindset.

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

6.2.1 Introduction

The effects of globalization continue to extend its reach, exerting various pressures on the internationalization of higher education (Stoner, Perry, Page, Gleason & Tarrant, 2016; Knight, 2004; Fischer, 2011). These forces were previously noticeable particularly in the proliferation of so-called 'outbound programs': foreign study-abroad, exchange and immersion programs (Stoner et al., 2016). In Japan, it has also recently become recognizable in the increasing numbers of an 'inbound' student cohort (Mori & Takeuchi, 2013). Internationalization programs typically include 2 streams of activities: one type that includes internationalization activities which occur on the home/local campus, and the other type which refers to activities that happen abroad or across borders (Knight, 2004).

Since 2010, Japanese universities have been formally tasked by the Ministry of Education, Culture, Sports, Science & Technology (MEXT, 2019) to increase efforts to internationalize higher education. Although outbound programs continue to be

maintained, Japanese universities are also increasingly accommodating inbound, or foreign students, on local campuses. This latter trend is having a diversifying effect on the student populations of Japan's formerly largely mono-cultural university campuses (Mori & Takeuchi, 2016). Although a few universities have embraced this trend fully, the true benefits of this development for the larger Japanese society remains yet to be seen.

Research suggests that some of the purported benefits of cosmopolitan campuses are that students gain educationally from the interaction and social learning that accompanies studying alongside international counterparts (Mori & Takeuchi, 2016; Stoner et al., 2016; Knight, 2004; Fischer, 2011). Aside from the international networking that occurs during cross-cultural experiences, the process of learning to communicate inter-culturally enables students to gain and develop a set of soft skills that have become sought after in the global business and social environment (Lovvorn & Chen, 2011).

As part of a broader project that explores the design of an instructional system to support intercultural skill – or cultural intelligence (CQ) – development, (Roux, 2018; Roux, Suzuki, Matsuba & Goda, 2018a,b,c; Roux & Suzuki, 2017a,b) the current investigation presents a limited set of results that showcases the self-reported CQ gains made by a group of mostly Japanese university students. Earlier reports (Roux & Suzuki, 2017a,b) confirmed the efficacy of a framework we developed to explore and support intercultural skills development, while later research work presented findings that measured CQ development (Roux et al., 2018a). For our current purpose, we focus primarily on the qualitative gains in CQ, obtained through students' self-reported advances in cultural knowledge, skills and strategies, and discuss changes in participants' attitudes and beliefs. We further highlight course design and learning engagement with reference to implications for the design of a learning management system that supports the growth of CQ and the formation of a global mindset in Japanese higher education.

6.2.2 Fostering a global mindset through developing (CQ)

Broadly speaking, a person with a global mindset can be described as having a general predisposition, displays tolerance for other peoples and cultures, considers

cultural diversity an asset and is able to thrive within ambiguity. Such an individual can balance and utilize seemingly contradictory forces and is able to reconceptualize boundaries (Lovvorn & Chen, 2011; Livermore, 2011). Giving consideration to the digital and educational requirements of the current age, global management researchers (Kedia & Mukerji, 1999) suggests a model of knowledge and skill that connects three overlapping bases to describe a global mindset. In summary, and quoting from researchers in this area (Lovvorn & Chen, 2011) the authors suggest that managers should have: "… (1) a degree of mastery over technology, information systems and telecommunications; (2) an understanding of the socio-political factors of the different countries in which an organization operates; and (3), an appreciation of the role of culture and cross-cultural issues that impact management's decisions" (p. 276).

In previous work (Roux, 2018) the notion of a global mindset was connected to intercultural skill development, and in particular to the concept of cultural intelligence (CQ). CQ is a 4-factor concept which encapsulates a flexible personal capability that can be enhanced through multi-cultural experiences, travel, education, training and self-awareness programs. It is observable in the broad capacity to function effectively across a variety of cultural contexts that includes ethnicities, generations and organizations, and is seen as "… a malleable capability that can be enhanced by multi-cultural experiences, training and self-awareness programs, travel and education" (CQ Center, 2019). Four CQ capabilities characterize the intercultural capacity of a person: (1) CQ drive, which relates to a person's motivation, interest and confidence in settings with cultural diversity; (2) CQ knowledge, which refers to knowledge about how cultures are similar or different; (3) CQ strategy, which is how a person makes sense of culturally diverse experiences and social situations; and, (4) CQ action, which signifies a person's capability to adapt their verbal and non-verbal cultural behaviors to appropriately suit a particular context (Ang, Van Dyne & Rockstuhl, 2012).

Taking an educational perspective, the understanding is therefore that continued exposure to meaningful experiences that are foreign to our usual situations and expectations, invites and develops new responses to the diverse stimuli that unknown environments, languages, traditions and values provide, thus creating new learning (Roux, 2018). Given time and repetition of this learning, a flexibility of mind is developed which is central to the growth of CQ and the

formation of a global mindset. Research therefore suggests that a global mindset can be nurtured through improving intercultural skills, developing CQ (Lovvorn & Chen, 2011) and also within higher education practices (Stoner et al, 2016; Tawil, 2013; Fischer, 2011).

6.2.3 The study

To investigate the development of CQ in higher education, our project applies instructional design (ID) theory to the intercultural learning of Japanese undergraduates. We utilize an earlier developed framework that weaves together relevant theoretical models with experiential learning (Roux & Suzuki, 2017a,b) and, in further research applications (Roux et. al., 2018a,b,c) employ a blended learning format to foster intercultural skill development. Earlier findings (Roux et al., 2018a,b,c) indicated quantifiable gains for various aspects of CQ development, although not statistically significant. Other indicators however, showed positive effects in terms of activated learning, engagement patterns, and strong measures on summative learning outcomes. The present investigation seeks to add to these findings by presenting some of the qualitative results.

The focus here is on learner response patterns, expressed in terms of cultural competence indicators, such as knowledge, strategies, attitudes and self-perceived intercultural skills that were recorded through a series of online formative assessments and feedback surveys. The qualitative analysis draw connections to the CQ concept via students' self-reported advances in cultural knowledge, skills and strategies, as well as changes in attitudes and beliefs. Course effectiveness and learning engagement are discussed in view of the larger project aims, which is concerned with the design of a learning management system that develops CQ and assists in the formation of a global mindset.

6.2.3.1 Methods and Procedures

Design

To activate the current approach, a blended learning format was employed within our previously developed framework (Roux & Suzuki, 2017a,b). This framework was designed to integrate three relevant fields: instructional design (ID), experiential

learning and CQ theory. Earlier findings suggested a successful integration of the framework with a design sequence to support intercultural learning and CQ development (Roux & Suzuki, 2017a,b; Roux et al., 2018a,b,c).

Training and structured learning are essential components in the development of intercultural skill (Kedia & Mukherji, 1999) and in line with our project goals (Roux & Suzuki, 2017a,b; Roux et al., 2018a,b,c) is utilized in conjunction with educational technology to support the blended learning format. Blended learning is an increasingly popular form of instruction that has been shown to offer alternative possibilities to traditional ways of learning (Dziuban, Hartman & Moskal, 2004). It is described as "a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically advanced possibilities of the online environment…" (Dziuban, Hartman & Moskal, 2004, p. 3). It therefore has the potential to bring together advantages of both worlds, with learners and instructors developing new roles in the learning process. This approach makes a positive impact on higher education since it contains the underpinnings of a transformative model which can alter the expectations and practice of all the learning participants: faculty, administrators and students (Dziuban, Hartman & Moskal, 2004).

A further advantage of this format is that experience-based learning, which is central to our framework (Roux & Suzuki, 2017a,b), can be prioritized at different times through a variable and focused instruction in a F2F classroom situation with an instructor as mediator (Dziuban, Hartman & Moskal, 2004). The blended learning format utilized here thus incorporated three areas important to an ID application: (1) a focus on relevant learning content, (2) formative and summative assessment/evaluation and (3) the generation of data for research and development purposes. Earlier research work (Roux et al., 2018a,b,c) presented a comprehensive outline and discussion of the intercultural learning course contents, its rationale and methods of instruction, and we therefore provide only a brief summary here.

The design of our framework is cognizant of a research contention (Fischer, 2011) that intercultural training needs a pedagogy that can support the development of CQ. We therefore designed a basic frame that integrated ID principles, experiential learning and CQ theory (Roux & Suzuki, 2017a,b) aiming to ensure the

effective dissemination of learning, track and evaluate the learning process itself and deliver research data for a learning analysis. To activate the framework, we developed a course to encourage intercultural learning, or CQ growth, in support of the formation of a global mindset. The course consists of three broad organizing elements: 1) learning content, 2) assessment and evaluation and 3) research. Each of these domains are divided into segments, indicating the relevant learning considerations and rationale in relation to CQ development. Learning content included the following: (a) textbook studies; (b) classroom worksheets; (c) a series of mini-lectures; (d) experience-based classroom activities (in groups/pairs); (e) online media (videos, audio, readings, public lectures); (f) one multi-cultural workshop; (g) a Moodle-based international virtual exchange with students in a foreign setting; and (h) homework, based on a flipped model of instruction (Roux et al., 2018a). A broad overview of the course, adapted from Roux et al. (2018a), is provided in Figure 36.

Drawing on our framework's embedded theories, we designed a 15-week course for a face-to-face (F2F) environment equipped with PC's and WiFi. The course included significant portions of synchronous and asynchronous activities that formed part of the formative and summative assessment, thus delivering research data.

Learning Content	○ Textbook reading ○ Classroom worksheets (instructor designed) ○ Mini lectures (topical contents) ○ Online media, surveys, feedback ○ International Virtual Exchange Project ○ Flipped method: reading / comprehension / audio
Assessment & Evaluation	○ Online review quizzes (4) ○ Online class feedback surveys (13)
Research	○ CQ Scale ○ Online surveys (weekly) ○ IVE Project

Figure 36. Course design: Developing CQ through blended learning

Participants

Thirty undergraduates (2nd and 3rd year) participated in the 15-week course. The

course typically prepares students for a short- and/or long-term study abroad experience, but often include students who maintain an active interest in developing their English literacy. The gender balance was 63% female and 37% male and except for one Taiwanese student, all participants were Japanese. The majority of the group (64%) reported limited to moderate prior intercultural experience.

Procedures

Face-to-face weekly lessons took place in a classroom with desktop PC's and WiFi. Students had the choice of using smart devices and/or PC's. Instructional methods included variations of facilitated group- and/or pair work, engaging with online media and lectures. A further component included an online, asynchronous exchange with a group of Colombian college students. Weekly learning reflections designed to track course engagement were recorded online through Google forms. These learning reflections included a 'free comments' section that was designed to gather non-structured learner feedback, on the premise that it would invite unsolicited learning observations and self-reflections that could link to the goals of our investigation. These form the basis of the learning analysis that is the focus of the current paper.

Forthwith, we present an analysis (conducted with NViVO software tools) of the qualitative feedback gleaned from the 'free comment' sections of the formative assessments. We reasoned that this reflective type of feedback could be suggestive of changes in learners' notions of self-perceived intercultural skill development and thus potentially compatible with increases in CQ, which could provide additional support for our broader investigation. The analysis further traces learning responses in search of thematic patterns that would link with CQ and the concomitant formation of a global mindset.

6.2.4 Results

To investigate the self-perceived intercultural skills of participants, we initially performed a word-frequency analysis as a starting point for understanding the free comment section of the online feedback forms. Table 20 below provides these results, showing the top 50 words and their relative strength of occurrence, given as a weighted percentage.

Table 20. Word count and weighted percentages

Word	Count	Weighted %	Word	Count	Weighted %
culture	45	4.61%	different	7	0.72%
class	28	2.87%	I've	7	0.72%
think	28	2.87%	like	7	0.72%
conflict	22	2.25%	time	7	0.72%
learn	22	2.25%	values	7	0.72%
want	22	2.25%	communicate	6	0.61%
difficult	20	2.05%	countries	6	0.61%
people	19	1.94%	however	6	0.61%
know	18	1.84%	important	6	0.61%
interesting	14	1.43%	Japanese	6	0.61%
thank	13	1.33%	really	6	0.61%
understand	13	1.33%	change	5	0.51%
conflicts	12	1.23%	chapters	5	0.51%
cultural	11	1.13%	enjoy	5	0.51%
good	11	1.13%	foreign	5	0.51%
learned	9	0.92%	fun	5	0.51%
many	9	0.92%	get	5	0.51%
chapter	8	0.82%	lot	5	0.51%
hidden	8	0.82%	much	5	0.51%
knowledge	8	0.82%	new	5	0.51%
nothing	8	0.82%	nil	5	0.51%
project	8	0.82%	thought	5	0.51%
study	8	0.82%	use	5	0.51%
things	8	0.82%	value	5	0.51%
deeply	7	0.72%	way	5	0.51%

From this data, we used the top 14 frequently occurring words (weighted average percentage larger than 1%) to achieve a closer approximation of potential

keywords that could indicate further analysis. These frequently occurring words, which includes references to 'class', 'think', 'conflict', 'learn' and 'want', 'difficult', among the most common are graphically displayed in Figure 37 below.

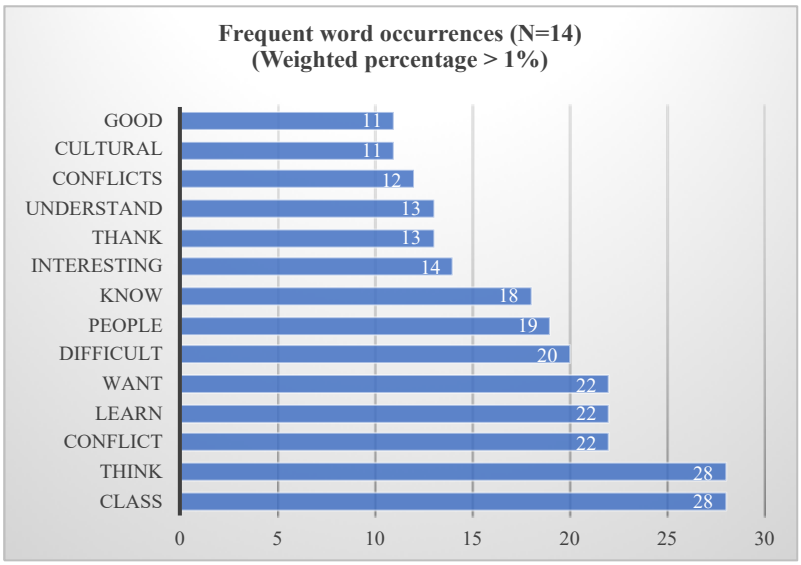


Figure 37. 'Free comments': Word frequency

From these frequency occurrences we constructed a word-cloud depicted in Figure 38. This depiction also gives an indication of the relative emphasis given to course contents in the feedback, as well as providing a sense of the relative strength of occurrence of these words. At this descriptive level of the analysis, the results only provide limited insights in reference to the actual content of the feedback; however, it does give a reflection of some of the keywords that might be important to consider when looking for potentially emergent themes in the data. It is also important to note that these frequencies provide only a preliminary indication for possible trends in the data. Given the relatively low amount (33, or 14%) of instances that were coded here as self-perceived developments, we are reluctant to attach significant value to these results at this stage. Instead, we treat them as indicators for exploring course feedback as indicators of potentially meaningful themes for further exploration at a later stage, perhaps with a larger dataset.

Figure 38. 'Free comments': Word cloud

In addition, and to explore potentially emerging themes from the feedback, we developed and utilized a coding system supported by NVivo software that resulted in an arrangement with several categories. Categories that emerged from the comments were themed as follows: (a) learning observations; (b) learning motivation (c) cultural knowledge; (d) self-perceived intercultural skills; (e) perceptions and attitudes (f) international virtual exchange (g) other; and (h) nil (no response given). These categories are depicted in Figure 39 below.

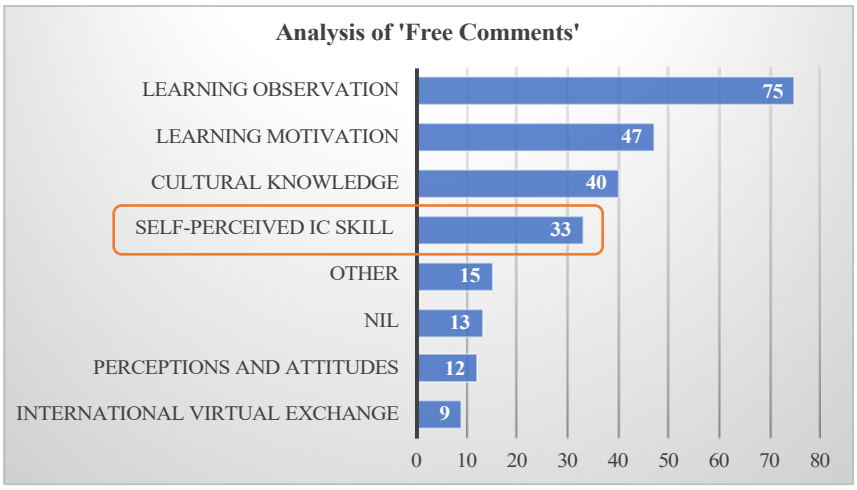


Figure 39. 'Free comment' analysis

In line with our present purpose, we focused further analysis on the (highlighted) category of self-perceived intercultural skills. Analysis of this category indicate 33 instances of these types of freely volunteered responses (14% of the total

244 coded comments) from the four online reviews (N=30). Although this is a relatively small number, it should be kept in mind that it is a small participant group and that we are particularly interested in qualitative feedback that could indicate (to some degree) how learners self-reflected on their own CQ development. The relatively small number of instances therefore represents only a very limited data set for analysis, which mitigates against employing a quantitative statistical analysis.

Within this category, five broad themes emerged and revealed links that could be linked to our identified purpose: (1) personal values and beliefs; (2) cultural knowledge; (3) cross-cultural communication; (4) personal behavior (self and others); and (5) cultural conflicts. Together, these results were taken as potential indicators of self-perceived intercultural skill developments. To demonstrate how these results link to the current investigation, that is, how CQ develop as a self-perceived skill, we provide a sample (Table 21) from the reflection feedback section. The contents of these learner comments should demonstrate how participants considered their learning and engagement with the course.

Table 21. Self-perceived CQ development: A sample

Theme	Sample
(1) Values & beliefs	I was interested in ranking of values. When I compare my answer with my partner, I found differences about ranking. I could notice about each person has own values and opinions
(2) Cultural knowledge	I think I learned a lot of new things about culture. I like to communicate with many people, not only Japanese but also people from other countries, but it is needed to understand there are cultural difference between I and others. This class is really effective for me to study about it.
(3) Cross-cultural communication	I assumed I can communicate with foreign people just by learning and speaking English, but I realized I should learn not only English but also history through this class, especially watching TED.
(4) Personal behavior	I want more people to know why conflicts happen by stereotypes and perception and how we do to resolve conflicts we are facing. And I thought I will try the way I learned.
(5) Conflict	Before this lecture, I think culture depend on each country or community. But now I think culture have more deep meaning. For example, visible culture, hidden culture and cultural roots. Visible culture can change easily, however hidden culture is difficult to change. Hidden culture and cultural roots are difficult to understand, so sometimes cause conflict. I understood why conflicts happen between communities

6.2.5 Findings and discussion

1) Feedback shows at least five emergent themes related to self-perceived intercultural skill developments. These themes were categorized and formulated as standing in relation to: (1) personal values and beliefs; (2) cultural knowledge; (3) cross-cultural communication; (4) personal behavior (self and others); and (5) cultural conflicts. In terms of our current investigation, which sought to explore and examine learner engagement in relation to the course goals, we could find fairly good indications that learners' self-perceived skills are in fact related to the intercultural issues that the course aimed to teach. This finding, even though limited in terms of its size, complement earlier findings in our project (Roux & Suzuki, 2017a,b; Roux et al., 2018a,b,c) providing further support for our original framework and the goals of the current course.

2) The identified themes stand in direct relation to the learning contents and further connects well with the four-factor model of the CQ concept. The results show that there was an impact on learners' personal perceptions, values and beliefs, which corresponds to the CQ meta-cognition dimension. In addition, learners reported an expansion of cultural knowledge and a realization of new understandings, which speaks to the CQ knowledge dimension. Other reported gains relate to increases in cross-cultural communication and interpersonal skills that connects with the CQ behavior dimension. Finally, learner comments reflect a deepened realization and understanding in their cultural learning, with reference to their own thinking and future behavior, suggesting that the CQ motivation dimension was impacted upon. These results also extend findings reported elsewhere (Roux et. al., 2018a) which supports the current instructional system's learning outcomes.

3) It is important to note however that these results represent emergent themes that not only overlap with each other but should only be loosely tied to the CQ model at this stage. Although the current indications are positive, further work needs to be done to establish how these links can be sustainably made through the existent instructional design and methodology. Doing so would provide further support to the currently self-recorded instances of intercultural

skill development, which we are linking to CQ increases.

4) Finally, the present analysis represents only preliminary insights into the qualitative aspects of our project. Given our current purpose and the relatively small size of the participant group, we did not proceed with an additional quantitative analysis. We report elsewhere (Roux et al., 2019b) on the quantitative gains specifically related to CQ measurement which the present investigation aimed to extend.

6.2.6 Conclusion

As part of a broader project to apply ID thinking to the development of CQ, this study reports the qualitative results of a blended learning course. We reported an effort to trace learning engagement through the feedback/reflection of students' self-perceived intercultural skills development, which we link with the notion of CQ and the formation of a global mindset. Results from the analysis of feedback from two consecutive courses indicate that such a link seems very plausible, since the freely ventured student comments related directly to learners' self-perceived development of cultural intelligence indicators as described by the CQ model. These findings further provide a positive indication for the course engagement levels and learning outcomes. In terms of our framework that incorporated the CQ model, it is thus a very positive indication that ties into the success of the original design methodology.

As for the instructional method, it appears that the blended learning model proved an effective approach that tied well with our framework. Although current indications are positive, further work continues to explore how instructional design and methodology can support the development of CQ, and in particular, how these links can be sustainably made in course instruction. Given the theorized connection between CQ and the notion of a global mindset, the current employment of the blended learning approach holds promise for further investigations in this area. Examining learners' self-perceived notions of how their CQ is developing provide fascinating insights into the growth of cultural learning and intercultural skills development. The utility of a reflective method, supported here through online means, enabled a deeper understanding and given its success in delivering rich qualitative data, will continue to be explored in the future.

This concludes the presentation of two publications that were produced during Phase IV of this investigation. As stated at the outset, the third and final section for this chapter presents the design and development of a learning reflection checklist that, together with the preceding sections, aims to add a third, evaluative element to this investigation.

6.3 Evaluation: Developing a Learning Reflection Checklist

6.3.1 Introduction

The final section of this chapter presents an online learning reflection checklist that was designed during Phase V of the investigation, representing a further design addition. As stated, this checklist was developed to assess participants' reflections on their own learning, specifically related to the course contents. This was an attempt to gage their understanding and critical consideration of the cultural content materials and broadly including, respectively, the knowledge and strategy components in the CQ model. In addition, a second section of the checklist aimed to understand the efficacy of the course delivery modes from a participant perspective as a means of evaluating the learning design. This learning reflection checklist is currently under development, but the checklist itself and preliminary data and findings are presented here to provide some insights into further course developments and, specifically, reflections on learning gains with regard to ICC development as reported by participants. The data gleaned from this dual purpose of the checklist could potentially be used to improve the course and/or triangulate results and findings from previous iterations, while independent (third-party) evaluations of these can assist with further refinements.

6.3.2 Discussion of results

Section 1 of the learning checklist was designed in alignment with the course materials and the textbook, with the aim of understanding learning for CQ development. Section 2, based on participant feedback, aimed to form impressions specifically about the way that instruction (methods, tools and means of delivery) was perceived by participants. Figure 40 presents the section 1 of the learning checklist.

	Learning Statements	Avrg /6
1	I can give an explanation for, and/or define what is meant by the 'culture' of a group of people.	4.67
2	I understand that there are different parts of culture and can give some examples.	4.85
3	I understand that there are different parts of culture and can give some examples.	4.89
4	I understand the difference between 'visible' and 'hidden' culture and can give examples.	4.96
5	I understand that some parts of culture is easier to change than other parts, and can give examples of them.	4.78
6	I understand why the hidden parts of culture might be difficult to change.	4.77
7	I understand that I can belong to many different cultural identity groups and can give examples of them.	4.74
8	I understand that sometimes when people belong to, or identify strongly with one cultural group, they might be biased towards, or neglectful of other groups.	4.67
9	I understand the meaning of cultural conflict.	4.78
10	I understand that conflict can be positive or negative.	5.07
11	I understand that conflict can be functional OR dysfunctional, depending on how the people involved in it RESPOND to each other.	4.63
12	I understand that conflicts often involve a disagreement about resources, a difference in needs, or strong differences in values, norms and belief systems.	4.56
13	I understand that conflict can escalate or de-escalate, depending on how people interact with one another.	4.96
14	I understand that the emotions of people involved in a conflict can make a big difference in how a conflict is managed.	4.67
15	I understand that cultural beliefs are learnt during childhood and can help explain why people behave the way they do in certain conflict situations.	4.41
16	I understand that it is important to be aware of my own cultural values and beliefs, because it will help me to be tolerant of the differences that I meet in other cultures.	4.74
17	I understand that even though people might share the same values, we can still have conflict because we differ in how we rank or prioritize the values.	4.70
18	I understand that in some cultures, the importance of groups is valued higher than those of an individual. These are called 'collectivist' societies.	4.96
19	I understand that my perception of a situation or a person can strongly influence my emotions, my thinking and/or my actions.	4.89
20	I understand that perceptions can sometimes increase conflict, but that if we take out the emotional responses, it can help to de-escalate the tension.	4.56
21	I understand that to prevent a conflict from continuing, it might help to describe it without using emotional words and suspend all action.	4.81
22	I understand what stereotypes are and that they are caused by having rigid or inflexible ideas about people or groups of people.	4.56
23	I understand that stereotypes are also formed by limited knowledge and experiences.	4.89
24	I understand that the formation of stereotypes can be decreased through education, getting more life experiences and training my mind to accept more variety.	4.74
25	One thing from these studies that I would like to understand better is… (Your opinion)	
	(N = 27) Combined Average	**4.76**

Figure 40. Learning Reflection Checklist – Section 1

As depicted in Figure 40, section 1 of the checklist contains 25 learning statements. It also presents the results by giving the average score each feedback item received on the feedback after course completion. Feedback was measured on a 6-point Likert-type scale, with 1 termed *"not at all"*, and 6, termed *"yes, exactly"*. Question 25 was open-ended and was analyzed differently (see Figure 43). Results show that all 27 participants (positively) agreed on average with all the learning statements, giving a feedback grade of at least 4 out of 6, for a combined average of 4.76. This represents a fairly high degree of agreement with the learning statements that could be taken as some indication of ICC knowledge acquisition. Although preliminary at this stage, this is a positive and supportive finding when compared with the findings reported from earlier iterations (Phases III and IV). At least, it is encouraging enough to warrant repetition and further integration with future iterations of the course.

Figure 41 provides a slightly different representation of the data. Although the range of difference between individual statements is far too small to have significant bearing on the findings here, it is useful to speculate about the potential implication of such learning feedback analysis at a larger scale and over longer periods of time. If the elements of time and scale are proportionally much enlarged, the necessity for understanding such learning analytics would come to the fore, illustrating the potential benefits of such analysis in larger applications and organizational contexts such as learning systems in education.

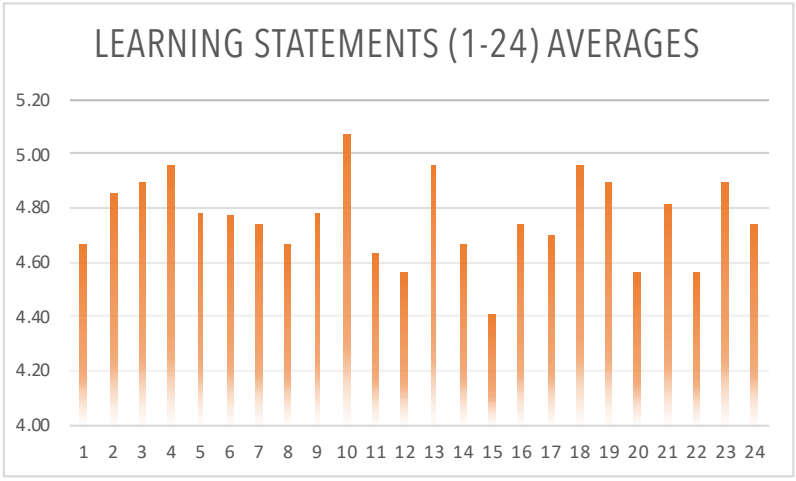


Figure 41. Learning statements feedback averages

Question 25 (Figure 42) was open-ended and required an opinion. These results are presented below in a word-cloud, giving a sense of what aspects of the course participants would like to understand better. In terms of learning feedback for participants and the learning designer, it represents a useful first impression for further investigation and potential future development.

Q. 25: One thing from these studies that I would like to understand better is… (Your opinion)

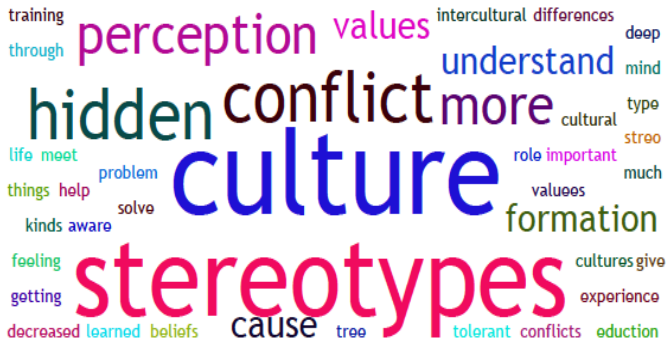


Figure 42. Learning reflection checklist: Wordcloud

Section 2 of the learning reflection checklist consisted of 8 statements that aimed to gage how the different modes of learning (methods, tools and means) affected participants' learning preferences and behavior. Figure 43 presents these statements and the average combined score they gained show a fairly high support for the different elements of learning in the course.

	About the way of learning	Average /6
1	Activities in a group or with a partner are useful for learning.	5.22
2	Working online using a smartphone or PC is useful for learning.	4.78
3	Reading a textbook and answering questions is useful for learning.	5.07
4	Listening to a lecture by the teacher is useful for learning.	5.22
5	Watching a video or short movie clip about a topic is useful for learning.	5.26
6	Participating in an online exchange with foreign students is useful for learning.	4.00
7	Having a class where there are different ways of learning is interesting and useful.	5.11
	Combined Average 4.95	

8. The course content was …

→ Too difficult (4%) // Mostly understandable (96%)

Figure 43. Learning reflection checklist: Section 2

The feedback for question 8 indicated that the majority of participants felt that the course was mostly understandable, giving support to the findings presented earlier, as well as to the learning design and modalities. Similarly stating these results in graph form (Figure 44) – although again too small in sample range to make generalizations possible – nevertheless provides suggestions for the learning design in terms of areas for attention and future development.

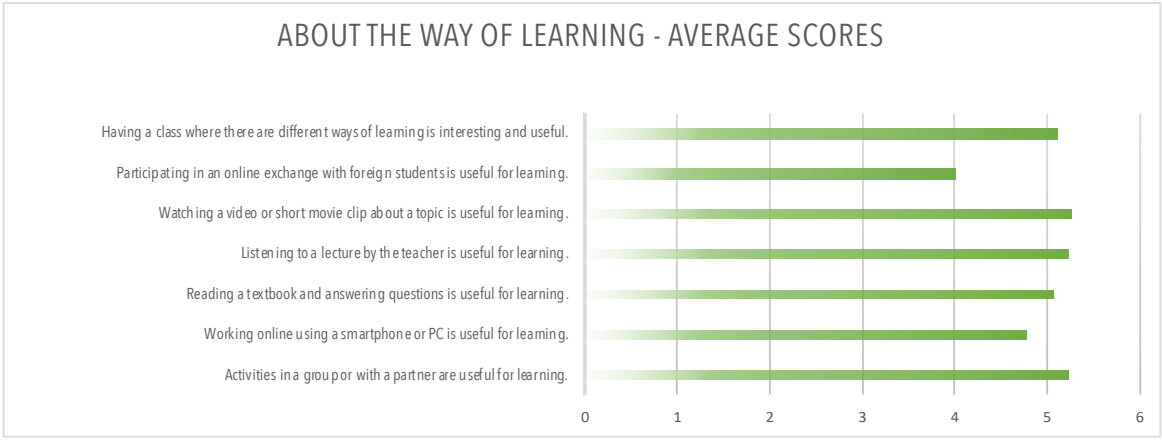


Figure 44. Learning feedback related to course design

6.3.3 Conclusion

The learning reflection checklist was designed for the dual purpose of gaining impressions regarding the potential attrition of CQ knowledge and strategies, and gaging participant opinion in relation to elements of learning design inherent to the course. As noted, this checklist was an additional design feature of a further course iteration (Phase V). Generally speaking, preliminary findings indicate a broadly positive participant engagement for both the measures, suggesting that CQ learning transfer was successful and valued by participants. Similarly, the different learning design features or course modalities were also rated highly in the feedback, suggesting support for course and learning design. Given the small sample and the potential lack of sufficient differentiation among the score results, findings here are taken as preliminary indications for further investigation and future development.

Postscript

Referring back to the investigative process provided at the outset of this chapter, it can be noted that **Phases IV and V** constituted an **iterative development phase** (the SAM) that contained further cyclical iteration. This involved an implementation of a BL course to develop CQ (Phase IV), with a further iteration that featured an additional design feature in the form of a learning reflection checklist (Phase V). Taken together with a view to their function in the project as a whole, these three elements provided a mix of quantitative and qualitative findings that gave insights to connect with the original goals of the investigation.

From a structured process perspective, Phases IV and V represented further iterations of the investigative framework utilizing a BL model. These two phases constitute a further two iterations of the investigative framework and its resultant findings here are taken as further evidence that the framework, through its formative elements of CQ theory, ID theories and models, EBL and BL, have proved successful in terms of its purpose. In this regard, its basic organizational structure has remained stable yet flexible enough to accommodate the addition of design features and their implementation.

Based on a selection of results and findings emanating from the first and second publications, as well as the findings of the learning reflection checklist presented in this chapter, the following points are drawn out to highlight particular advances in Phases IV and V of the investigation:

1) The primary purpose of Phase IV was to obtain an independent CQ measure for the BL approach to ICC development that was cultivated through the course. Based on the independent report provided by the CQ Center (2018), the finding of positive incremental increases (within the moderate range) on all four self-rated CQ dimensions is thus encouraging. This finding was further strengthened through the statistically significant improvements observed with the subdimensions of CQ knowledge and CQ action, suggesting that these dimensions were supported through the course. These findings suggest that the theoretical (knowledge-related) and some applied learning (such as linguistic aspects) of CQ learning displayed growth.

2) Although it is encouraging that participants reported an enhanced sense of confidence in the CQ knowledge and CQ action/behaviour, it should be reiterated that the participant sample is small and very localized in the present research context. While the findings reported here are valuable in terms of this project, their implications are thus limited with respect to a wider audience. The fact that findings here extend and support earlier iterations of the project and can be linked to research findings elsewhere, is encouraging however and provides impetus for further expansion.

3) Although developments in the CQ drive- and CQ strategy-dimensions were less pronounced (not statistically significant), these factors nevertheless showed improvements. These advances occurred as a result of our course intervention, achieving a result that compares favourably with the stated worldwide norm for this dimension of CQ. A similar result was in evidence for the CQ strategy dimension which improved to slightly exceed the given worldwide norm. In slight contrast to other studies, results did not show a statistically significant effect for the CQ metacognition dimension. These findings might indicate a relative lack of confidence in this area for the participants. One possible explanation for this could be a contextual factor – the relative absence of international peers on campus, and the consequent lack of social opportunities for international exposure that would give a 'real-world' experience to participants, and helping to develop CQ metacognition. This is a potential avenue for further exploration.

4) The first article utilized an online version of the CQ measurement, whereas the earlier iteration (Phase III) made use of the original paper-based version. A cursory comparison between these two CQ measurements indicates a utilization of the same CQ-factor-structure in both versions; however, questions in the E-CQ version were expanded and also available in Japanese. It therefore may be that these two factors lead to a quantitatively different result for the separate iterations of the course. These observations are speculative at this stage however and will need to be further explored.

5) Earlier qualitative findings, gleaned from formative and summative participant performance, course feedback and measurements, indicated advances that could be tied positively to CQ developments. These were confirmed through the current iteration. Taken together with the quantitative results reported in the first

publication it is an encouraging validation; however, in view of the small sample size, the results should be treated with some caution.

6) Preliminary findings from the learning reflection checklist indicate a broadly positive participant engagement, suggesting that CQ learning transfer was successful – especially in terms of knowledge transfer and critical/strategic thinking. In addition to the different learning design features, inherent in the different types of instruction, these were also rated highly in the feedback, suggesting support for course and learning design. The learning reflection checklist is an important evaluative component that helps to triangulate results reported from other phases of this investigation and deserves further application and deeper analysis beyond the descriptive results reported here.

7) Findings from the present investigation, which used the E-CQS with a Japanese population, potentially lend further support to other cited studies using the E-CQS with different populations, assisting in the validation of this instrument. With replication in other Japanese tertiary contexts, and larger samples, the present study could add to the growing literature on the multinational validation of CQ.

8) In broad, considering the application of our framework in conjunction with a BL approach, the current set of results are encouraging. Firstly, findings give impetus to the ICC development goal of this project in that there remains a challenge to provide a pedagogy for intercultural learning in higher education. Secondly, from an ID&T perspective, the call for instructional designers to infuse and deepen their methods, materials and practices with due consideration to an increasingly diverse, global – and online – student audience remains.

This set of eight summative findings covers the iterations and investigative results from Phases IV and V and aligns with the overall intention behind the project. This chapter therefore concludes the report on all the selected results and findings that the investigation delivered thus far. Taking these forward, the following chapter turns to a summary and discussion of all the findings in terms of the investigation as a whole.

CHAPTER SEVEN

Discussion of Findings

Prologue

This investigation explored how CQ development can be facilitated through the application of ID&T. Starting with the design and construction of a unique theoretical framework to promote CQ development, an investigation was launched through an intercultural workshop, followed by a series of iterative design and expanded implementation phases that saw the development and iteration of a blended learning course conducted with student groups at a Japanese university. At the outset, the investigation posed a broad exploratory question that were supported by an underlying set of focused investigative questions. Utilizing the SAM as an organizing model, these questions were explored through five cyclical phases of design, implementation and evaluation/reflection, delivering research findings that are drawn together here and integrated with relevant theoretical aspects in an attempt to consider their implications with the original research goals in mind. The investigation posed the following questions:

1) Broadly speaking, how can the intercultural competence (ICC) – or, cultural intelligence (CQ) – of students at Japanese universities be nurtured, cultivated and developed?
2) More specifically, which theories within the fields of education, instructional design, psychology, cultural studies and human resources will be appropriate to investigate intercultural skill development and the consequent growth of CQ?
3) Given the interdisciplinary nature of the investigation, what type of models and theories could be effectively synthesized to create a framework for a research enquiry?
4) And, to explore the broad question of ICC development, how can this framework be applied to cultivate CQ in ways that would:
    a) support and guide the enquiry by delivering research data;
    b) allow for the continuous iteration, adjustment, and development of relevant instructional materials and methods;
    c) utilize and/or incorporate online learning applications, methods and tools?

To elucidate the investigative findings and link to the original research question the ensuing discussion is guided by a processual investigative model (Figure 45) which was anchored to the SAM and followed consecutively in eight steps, through Phases I – V.

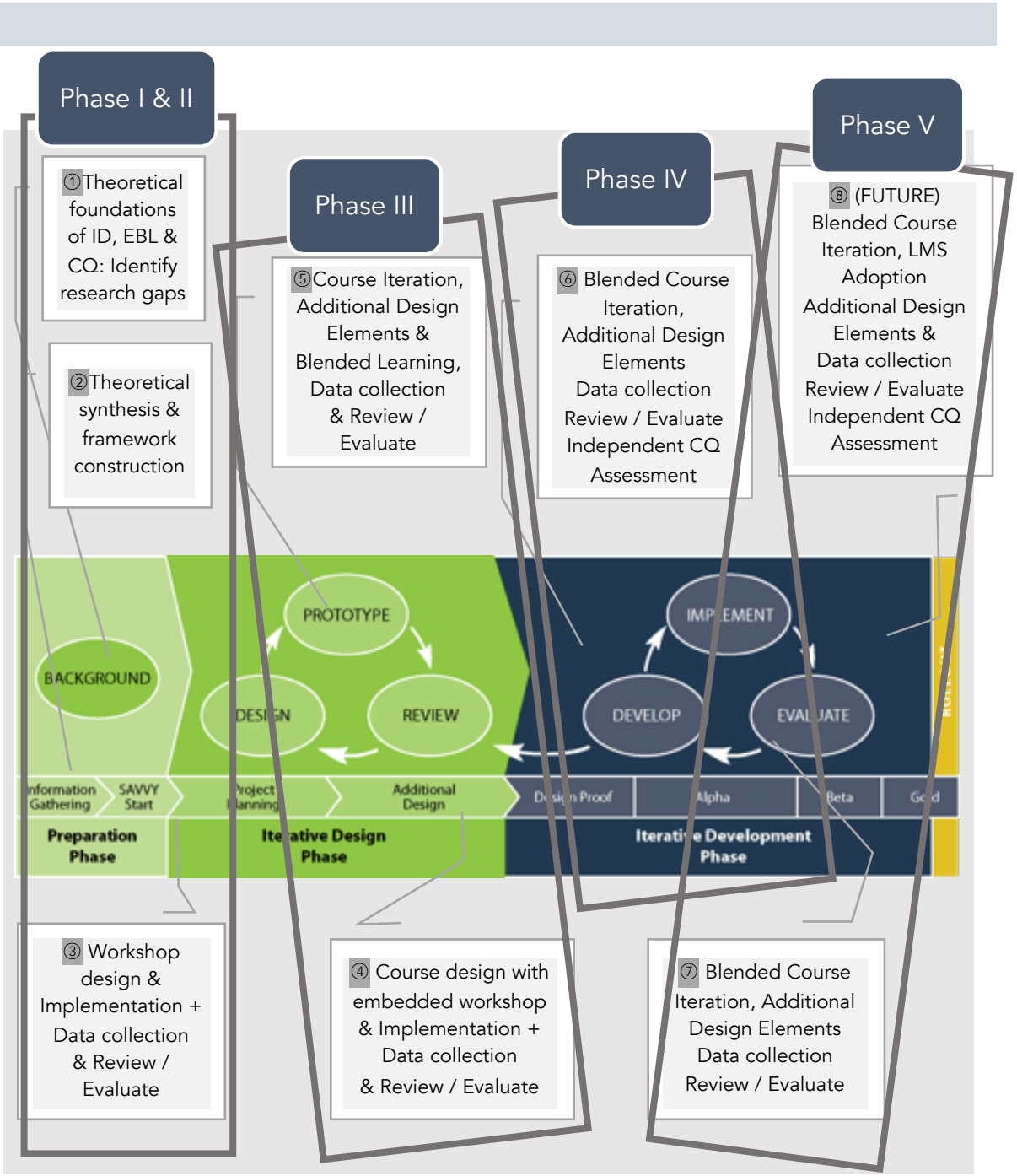


Figure 45. Phases I – V of the investigation utilizing the SAM

7. The investigative process

The inception of this project, as outlined in Chapter 1, was grounded in two intertwined issues: firstly, the observation that within the broad background of expanding and globalized learning through online means, it has become evident that the cultural diversity of learners in real and virtual worlds are increasing rapidly; and secondly, this international trend has foregrounded the important role of relevant and appropriate ID&T in the development of culturally sensitive and adaptive learning pedagogies and their accompanying methods, materials and tools to support the globalization of learning in higher education.

7.1 Phases I & II

The two abovementioned issues provided the impetus for the initial, exploratory workshop with university undergraduates in this study. The basic aim for this first step of this investigation was to construct and test – or implement – a framework that would assist in finding answers to the highlighted issues above. As depicted in the background phase of the SAM (Figure 45), Phase I (Step 1), this consisted of first gathering appropriate information that would attend to the theoretical and practical gaps observed in the relevant literature. This was followed by Step 2, which involved the integration and synthesis of relevant theoretical models and approaches for the construction of an investigative framework that would enable a SAVVY start. This latter step took form in the design and implementation of a workshop in Phase II (Step 3), generating the results and findings discussed below.

7.1.1 Findings from a SAVVY Start: An ID&T infused multicultural workshop

A. Instructional designs for intercultural learning

(a) Integrating EBL theory with the ARCS and ADDIE models successfully harnessed the underlying procedural strengths of these models, which anchored the cultural learning contents and, based on participant feedback, activated learning in dynamic and interactive ways that enhanced intercultural learning. This positive finding provided support for the synthesized framework at this stage but warranted future replication and further evaluation for iterative purposes.

⇒ Comment & Implications: The synthesis created here suggests that the ID

models and EBL are inherently very compatible, enabling a solid foundation for anchoring cultural learning contents. As pointed out in Chapter 2, several authors (Thomas et al., 2002; Gunawardena, 2003; Clem, 2004; Rogers et al., 2007; Henderson, 2007; Parrish & Linder-VanBerschot, 2010; Suzuki & Nemoto, 2012) have highlighted the absence of culturally sensitive design and materials in the field of ID&T. There is no doubt that the broad socio-cultural background of the learner remains central to their process of making meaning, which means that an awareness of its essential influence should infuse the whole design-thinking process. Designers in general, and those who focus on ICC learning, are assisted in this matter by the ID models in question: ADDIE, especially in the *analyse* phase, and ARCS, in the element of *relevance*.

The workshop design sequence highlighted these underlying processual strengths of the respective ID models, implying that a thorough analysis of an audience and their context (ADDIE), and linking these with relevant and appropriate materials (ARCS) should ensure a learner-centred approach. This not only aligns with the learner-centred principles of EBL, but also forefronts the learner as the main participant at the moment of the creation of design – well before the actual learning process begins. The contextual information and evaluation that the workshop and participant feedback provided, thus gave valuable insights for the investigation at the point of inception that could be incorporated in later iterations.

(b) The inclusion of pre-/post-workshop self-rating scales added a vital reflective component to the design of learning. This element helped to raise intercultural awareness, cultural knowledge, assisted in audience analysis and encouraged participants' awareness of their learning styles and preferences. The final reflection and evaluation served its dual purpose effectively as a workshop assessment and audience analysis.

⇒ Comment & Implications: Further to point (a) above, Thomas et al. (2002) argue that culturally sensitive design does not imply making culturally neutral learning materials, but rather goes deeper: it should be embraced by the designer and infuse the whole process of design, with a full consideration of all the stakeholders. This deeper intention is encapsulated well in their statement that "… users, to the greatest extent possible, should be designers" (Thomas et al., 2002, p. 43). By using participation feedback and evaluation materials from the outset of a project – say, in the preparation design phase (the SAM) – a

constructivist-thinking type element is added by taking into account the socio-cultural setting with a primary concern for the participants therein.

This is an example of culturally infused, intentional design that also aligns with the philosophy behind the action research model that was followed in this project. Viewed from this angle, the role of the designer is multi-layered and complex: as a designer and researcher-participant-observer, this role is vital and comes with tremendous potential to facilitate learning. It also implies that participants can be powerfully involved from the very beginning of a project, making this approach very suitable for empowering learners.

B. Towards a pedagogy for developing intercultural competence (ICC)

(a) Audience diversity, also evident in different learning styles and preferences, implies that future learning designs – and the pedagogies they help drive – should be sufficiently flexible in order to accommodate differences in learners and learning backgrounds. In this regard, the audience analysis yielded a useful characterization of potential future audiences in the local context and should be retained as analytic feature in future designs for learning in this area.

⇒ Comment & Implications: Although this finding links to the points raised in (1), the implication for developing a pedagogy for ICC is the observation that flexibility is a crucial element. This refers to design features that support the process of learning as it develops, but also ensures that learning material, content and tools can be appropriately adjusted where/how it becomes necessary to facilitate the development of ICC in participants. A review of global e-learning practices (Henderson, 2007) identified these as being "culturally blind or with unintentional exclusion of issues of culture" (p. 132). These were made in reference to the globalized exportation of Western-centric models and practices.

Findings from this investigation suggest that staying focused on the particular features of the local participant audience can safeguard against the injection of foreign bias. The implication is that the role of ID in the creation of culturally appropriate pedagogy points to utilizing its capacity for *enabling or facilitating* ICC learning, instead of expecting that it should be *providing* ICC learning. Similarly, Henderson (2007) observes that technology should not be driving e-learning but enabling it. In her example online discussion groups across

continents and countries worked together towards a common goal that was realized through technology but required the cross-cultural interaction of all groups in order to succeed. The conclusion here is that ID&T remains a sophisticated tool for the facilitation of the appropriate learning; and as discussed in (1), much depends on the intention of the designer in its application.

(b) The use of smart technologies was evident during the multicultural workshop and, in many cases were observed to be a very useful tool in the communicative strategies used between participants during the learning process. This means that designs for ICC development should be cognizant of these potentially supportive technologies, which could be incorporated into the pedagogical framework to support the learning process.

⇒ Comment & Implications: Based on this finding, this project fully incorporated the use of smart devices in classrooms through the adoption and integration of the BL model in later phases of the investigation. Earlier discussion (Chapter 2) highlighted the observation by Dzuiban et al. (2018) that our world is a now already blended, with the boundaries between technologically-driven and human-produced communications fast disappearing. The implications for education, as discussed, are already vast and very promising. For the instructional designer it is a question of rising to the challenge of using this incredible tool in ways that support and enable the learning process – and not falling into the trap of its powerfully distracting embrace.

(c) The use of EBL activities was rated highly, and it was clearly a vital element in the activation of ICC learning and its development. While activities for EBL in F2F environments are widely available and sufficiently varied, the incorporation of online methods/activities raise a new challenge for the design of instruction and building a pedagogy for ICC. The basic problem here is the creation of experiences online in ways that meet the same demands that experiences in the 'real world' require of learner-participants.

⇒ Comment & Implications: The creation and expansion of social engagement functions and platforms alongside (or integrated with) online learning platforms through Web 2.0 are showing great promise in potentially supporting the socio-cultural dimension of EBL (Rahimi, Van den Berg & Veen, 2013). It is after all, in the mind of the participant that experience becomes meaningful for learning. While online learning platforms continue to expand on these functions

and technology avails us of increasing levels of online presence, its direct application for learning remains to be investigated properly. Commenting on studies of games and serious play for training purposes, Lane & Ogan (2009) observes that more empirical studies are necessary to fully understand the effect of virtual environments on the promotion of cultural learning and intercultural development. Although the present project was not directly concerned with this issue, the increasing adoption of online tools and means as the project progressed made it clear that a consideration of this potential avenue for future iterations could potentially be very useful.

7.1.2 Limitations

To conclude this discussion of Phases I&II, it is important to note that the multicultural sample brought together by the workshop is not a true reflection of the general student diversity in the present context. A largely Japanese homogeneity is in fact (still) broadly reflective of most Japanese campuses (Mori & Takeuchi, 2016). This implies that the researcher had to make an effort in order to invite this group as the initial step and had to proceed through the project on the premise that such diversity will not be readily available. On the other hand, it raised a continuous challenge to find technological and online means to obtain and facilitate intercultural learning for local students. This limitation invited a number of advantages and disadvantages for the investigation that is taken up in later discussion.

7.2 Phase III

As noted, Phase III (Steps 4 and 5) constituted an iterative design phase (the SAM, Figure 45) that connected with the project plan, adding design elements to the investigative framework generated for the multicultural workshop. Anchored to this framework, these elements supported an extensive cycle of the design for, and prototype construction of a 15-week intercultural learning course to support CQ development. A key additional feature of this expanded iteration was the adoption of a BL model that was integrated with the original framework. This expanded frame continued to function as an organizing influence, with the BL model helping to activate several of the technology-supported learning, assessment and evaluative activities. In essence, the additional online support that were incorporated through the BL model formed the backbone for the series of evaluative and research-driven activities of the course. In this way, the BL design element gave rise to, supported

and integrated the cyclical evaluative reviews and data collections. The findings it generated are now aligned with theoretical considerations in this area of research.

7.2.1. Findings from an iterative design phase: Designs for blended learning

Based on a selection of results that the course implementation delivered, findings could broadly be summarized along four themes: 1) learner engagement, as assessed through summative and formative evaluations of the course, were generally positive and indicative of ICC learning gains and skills transfer, such as increased digital literacy; 2) learning feedback indicated that the EBL model and BL format fused well to support learning in ways that increased students' access to course content and evaluation, thus deepening engagement and providing deeper insights into learning comprehension and knowledge uptake for both students and the instructor; 3) although a comparison of pre/post CQ scores were not statistically significant, the other effects that were observed reflected positive learning gains. These are accepted with caution given the small sample size but appears comparable to research findings cited elsewhere. Finally, 4) a broad observation that considered all the results/feedback of the different course elements suggest that as a whole, intercultural learning took place; this is most evident in the learning feedback of the EBL activities and students' final course feedback evaluations.

A. Instructional designs for intercultural blended learning

a) As discussed, the BL model incorporated several elements, most prominently in (i) the application of online summative and formative learning evaluations through Google, (ii) classroom individual- and group-based EBL activities that linked with online media and instructor-designed evaluations, and (iii) a Moodle-based, asynchronous international virtual exchange (IVE).

⇒ Comment & Implications: The integration of summative and formative learning elements with the course was enabled through the BL model and had a very positive effect on learner engagement that was evident in high test scores (assessing knowledge content) and regular, classroom-based learning feedback. This data provided unique insights into the progression of the course from an instructional viewpoint and helped enormously in the flexible, week-to-week adjustment of materials, methods and tools used for intercultural learning. Over a long period of time, this data forms a pattern that may be used

to shape teaching and learning in classrooms by providing insights for decision-makers and at system-management levels (Looney, 2011). Technical improvements in this area are rapidly occurring although a seamless interface between institutional learning platforms, external sources and participants' smart devices are not yet readily available. Nevertheless, Looney (2011) points out that the iterative process that is enabled by technology combines well with formative assessment, delivering flexibility, accuracy and a more nuanced view of learner behaviors. This implies that learning could be understood from the bottom-up, helping to mitigate the criticisms often levelled at traditional top-down assessments associated with traditional educational models. In short, it has potential for empowering learners and their instructors since it is increasingly able to take into account individual preferences and backgrounds, which can link very well to the development of ICC and CQ development.

⇒ Comment & Implications: (ii) The careful selection, provision and evaluation of ICC media, materials and EBL activities had a positive (but not statistically significant) effect on the development of CQ in Phase III as evident in the learner engagement patterns and learning outcomes. The BL model not only connected these successfully in a F2F environment, but also supported its activation and evaluation. As pointed out in the previous section, our environments are already blended (Dziuban et al., 2019) and the challenge for the instructor utilizing any form of technology lies in taking decisions that would facilitate the intended learning.

⇒ Comment & Implications: (iii) The IVE constituted an important element in the learning of ICC and development of CQ, and student feedback and evaluation rated this element as highly instructive. To some degree, the IVE represents a form of EBL in that it is a technologically enabled (Henderson, 2007) intercultural experience. This served the current purpose well and was rated highly by participants, although the asynchronous frame posed a delayed effect on interactions. Future designs for CQ development should seriously consider incorporating this element and attempt to improve/overcome the technological issues.

B. Towards a pedagogy for developing CQ

Phase III aimed to achieve a prototype for a course that would cultivate the development of CQ. Findings overall indicated that a prototype construction was achieved and that its implementation delivered learning gains that could be linked positively to the CQ development of participants. This finding links with similar findings by Fischer (2011), although this project is markedly different in that it specifically aimed to promote the development of CQ through dedicated instruction. Fischer (2011) observes that an integrated and comprehensive pedagogy for CQ development is not evident in academic literature (yet), and it is in this area that the current project, through the application of ID&T, has made an extensive effort. Lewis & Williams (1994) observe that methods which bring together learners' prior experience, link conceptual foundations with practice and encourage reflection are the essential foundations for learning. These elements are also the hallmarks of EBL and the current framework, through its incorporation of BL in the current iteration appears to have succeeded in creating a replicable pedagogical base. This contention will have to be more fully explored theoretically in view of its interdisciplinary background. Further evidence for its success in application would also have to be generated through iterations and across contexts.

7.2.2 Limitations

The application of technologies to learning are not without setbacks and disadvantages. In terms of 21st century skills, Kivunja (2015) observes that digital literacy is among the top four skill domains required from students. It is worth noting that – from both instructor and student vantage points – the learning curve for adopting a blended format can be steep because of the demands it places on engaging with, and through, a variety of technological means and forms to access learning. In fact, many learners had to be supported (either by the instructor or their peers) to adapt to the technologies used in the course. Although digital literacy among learners increased quickly, starting out in a new course such as this might soon overwhelm both instructors and learners if care is not taken to ensure a certain level of technological proficiency at the outset.

It is further important to note that findings from this phase of the investigation are based on a very small and very localized group of students, all Asian and predominantly Japanese. Although it means that this course as a prototype thus

aligns well with such an audience, the drawback is that its applications to other contexts and audiences might not be readily possible and may require another audience analysis and a series of design adjustments. On the other hand, and in view of Henderson's (2007) criticism that e-learning has often followed a 'one-size-fits-all' approach, the suggestion that an audience analysis be conducted before any courses of learning are conducted might go a long way in improving learning outcomes for all the relevant stakeholders – implying that a sufficient audience analysis can have a determining impact on the design of future iterations.

Finally, the area of pedagogical development in the information age can be problematic: Alonzo et al. (2005) observes that there is an increasing divide between the profusion of technologies on offer and the shortage or non-existence of teaching principles and/or methods to support them. The implication is that the area of pedagogical development (and its role in specialized disciplines) will need to find ways to incorporate the explosion of learning technologies and its effects. The current project, in terms of its effort to create a suitable pedagogy for CQ, can attest to this preceding point: suitable and interesting content that can be delivered via the internet to participants in a variety of modes/formats are readily available; however, the pedagogical/design issue is to work with participants in such a way that the learning content found is critically assessed and presented to benefit learning.

7.3 Phases IV & V

Discussion now turns to the findings of Phase IV, (Step 6), and Phase V (Steps 7 and 8), which in the SAM (Figure 45), refers to an iterative development phase, emphasizing implementation. For the current purpose, Phase IV also involved an evaluative focus. Briefly, these two phases of the investigation involved three iterations of the BL course; the first part (Step 6), considered two sets of results: (1) mostly quantitative findings from an independent assessment of participants' CQ development (pre- & post-course) that was obtained through the Cultural Intelligence Center[17], and (2) mostly qualitative findings from participant feedback about this BL course iteration. Phase V (Steps 7 & 8) is currently considered developmental and preliminary findings from another iteration (Step 7) that utilized a learning reflection checklist as an additional design feature were considered with a view to course evaluation and future development for possible online expansion.

[17] The Cultural Intelligence Center https://culturalq.com/

7.3.1 Findings from an iterative development: Expansion & Evaluation

Further to the brief introduction above, the following points are highlighted as findings in terms of the implications for ID&T and pedagogical considerations for developing CQ. Further theoretical references are drawn in to consider relevant perspectives elsewhere and limitations are discussed with a view to further course development and future expansion.

1) The prototype course (Phase III) delivered encouraging results; however, certain factors (population size, localized limitations) suggested a cautionary interpretation of the course's effectiveness in developing CQ. Based on the independent report provided by the CQ Center (2018), the finding of positive incremental increases (within the moderate range) on all four self-rated CQ dimensions was therefore a very encouraging result from Phase IV. This finding was further strengthened through the statistically significant improvements observed with the subdimensions of CQ knowledge and CQ action, suggesting that these dimensions were supported through the course. These findings suggest that the theoretical (knowledge-related) and some applied learning (such as linguistic aspects) of CQ learning, displayed growth.

⇒ Comments & Implications: Although this finding was positive it is important to consider a few related issues.

(i) In a previous iteration (Phase III), the paper-based CQS delivered no significant results, yet in Phase IV, using the online E-CQS, results pointed toward significant changes as a result of the course. Since the course was a relatively steady factor-set, the difference in results need to be understood better, specifically in contrasting the paper-based and online CQS questionnaires. A cursory comparison between these two CQ measurements indicates a utilization of the same CQ-factor-structure in both versions; however, questions in the E-CQS version were expanded and also available in Japanese. It therefore may be that these two factors lead to a quantitatively different result for the separate iterations of our course. These observations are speculative at this stage however and will need to be further explored.

(ii) The CQS is a self-rating scale and although it has gone through a number of validations (Leung, Ang & Tan, 2014), its application and validity in Japanese contexts have not been researched elsewhere. Findings from the present investigation, which used the E-CQS with a Japanese population, potentially lend

further support to other cited studies using the E-CQS with different populations, assisting in the validity of this instrument. With further replication in other Japanese tertiary contexts, and larger samples, the present study could add to the growing literature on the multinational validation of CQ. Further exploration and a replication study with regard to the current findings could therefore provide further insights.

(iii) The fact that two CQ dimensions – CQ knowledge and CQ action – showed significant growth is in some way not surprising, given the course's stated goals of aiming towards development of cultural knowledge and interpersonal (communicative) skills. Although the independent assessment results support achievement of the goal, pointing towards some effectiveness of the course, both the CQS and the course in its present form would benefit from exploring results with experimental and control groups to ascertain further validity. Nevertheless, findings here support other CQ-related research work in higher education (Eisenberg, Lee, Brück, Brenner, Claes, Mironski & Bell, 2013; Van Dyne, Ang, Ng & Koh, 2008) although (Fischer (2011) noted that even brief intercultural course interventions can have a significant impact on students' cultural competencies. The point is (as Leung et al., 2014 observes) that the underlying processes of ICC development is not yet clearly understood or researched. There is thus a need to know *how* ICC translates into intercultural effectiveness. The current study has devoted a lot of energy to how these processes might be understood through an application of instructional methods and tools for learning in this area and through its framework and associated course, it might be possible to devote a specific focus on the "how" of ICC development and the resultant CQ growth. This is taken forward as a future recommendation for further research.

2) Although developments in the CQ drive- and CQ strategy-dimensions were less pronounced (not statistically significant), these factors nevertheless showed improvements as a result of the course, achieving a result that compares favourably with the stated worldwide norms for these dimensions of CQ. In slight contrast to other studies (Ang et al., 2007; Mor, Morris & Joh, 2013), results here did not show a statistically significant effect for the CQ strategy/metacognition dimension.

⇒ Comment & Implications: Although only a speculation at this stage, these findings might indicate a relative lack of confidence in this area for the participants and will need further exploration. More specifically, these CQ dimensions respectively

involve motivational and meta-cognitive (strategy-based) elements of ICC development. Leung et al. (2014) observes that motivation, a crucial underlying component of cognition, affects the growth of CQ since it encapsulates the interest, drive and effort with which energy is directed towards learning about/from intercultural phenomena. It thus goes to the heart of the CQ factor structure but might be equally rooted in environmental/contextual factors and pressures. One possible explanation for this could thus be that a contextual factor – the relative absence of international counterparts on campus – impacted negatively on the growth of motivation of students to find opportunities that would benefit their ICC development. This lack of social opportunities for international exposure that would give a 'real-world' experience (Fischer, 2011) to participants therefore links to a diminished sense of interest/motivation and the consequent flattening effect in the development of meta-cognitive CQ. This is a potential avenue for further exploration in future course iterations.

3) Earlier qualitative findings (Phase III), gleaned from formative and summative participant performance, course feedback and measurements, indicated ICC advances that could be tied positively to CQ developments. The second qualitative exploration delivered through the current iteration's (Phase IV) qualitative analysis, reflected similar findings, further supporting and extending the quantitative gains.

⇒ Comment & Implications: This finding illustrates the potential value of mixing research methods (Creswell, 2003), given the positive results from the quantitative findings reported here. Although the limitations of a working with a small population remains, one of the strengths of a qualitative analysis is that detailed and more localized, personal learning data can be explored. This aspect remains an underdeveloped area of this investigation but considering the size and scope of the study thus far, and the wealth of data it has already produced, a decision was made to perform only a preliminary (if somewhat superficial) qualitative analysis as a first attempt to triangulate the quantitative data. Findings from this area of the project is thus taken forward for future analysis and development.

4) The purpose of the learning reflection checklist was twofold: (i) to assist self-assessment of learning, and (ii) gain insights into the efficacy of the learning means and methods utilized for course delivery. Preliminary findings from this checklist indicate, in reference to (i), a broadly positive participant engagement,

suggesting that CQ learning transfer was successful – especially in terms of knowledge transfer and critical/strategic thinking – and considered valuable by participants. With regard to (ii), the different learning design features, as illustrated through the types of instruction, were also rated highly in the feedback, suggesting support for the learning designs utilized by the course.

⇒ Comment & Implications: Evaluation is a vital part of ID and further links closely with the reflection element in the EBL model. Scriven (1991, p. 191) defines evaluation as "… the process of determining the merit, worth and value of things". Evaluation therefore marks the end of a process/cycle, making the learning reflection checklist that was added here as another design feature a very important component. As such, its purpose here delivered broad results:

(i) it provided a self-reflective dimension to participants, in turn providing insights for the ID of the course. From an ID perspective, these insights help to help elucidate areas of learning that were easier/more difficult to engage with and would assist in developing future refinements. Further developments here could consider extensions to goal-based-scenarios (GBS), learning modules focusing on specific skills-training and the introduction of participant-driven goals that would extend the underlying constructivist intentions by activating and empowering learners to develop their own CQ as life-long learning. From a CQ training perspective, the expanded use of the preceding ideas could consider bringing in evaluative models (such Patton's (2008) utilization-focused evaluation (U-FE), or Kirkpatrick's (1959) training evaluation model) once a core CQ training course has been established. This is an additional future development proposal at this stage.

(ii) it provided information that could help to triangulate some of the quantitative and qualitative results reported from other phases of this investigation. This again illustrates the value of using mixed methods in this investigation, since it delivers layers of results that could be compared and contrasted to help validate feedback and learner response, thus opening further avenues for research and/or course refinement; and

(iii) it gave an indication of the efficacy of course delivery and its purported aims for developing CQ – beyond the mere measurements that summative scores provide (Scriven, 1991). As such, it should perhaps be utilized and interpreted as a formative measure of knowledge advances.

7.3.2 Limitations

The limitations observed in the previous phases were very much reflected again in the current two iterations and it might suffice to conclude this section by repeating an earlier observation. Although it is encouraging that participants reported an enhanced sense of confidence in the noted CQ dimensions, it should be reiterated that the population is small and very localized in the present research context. While the findings reported here are valuable in terms of this project and potential further expansion in the local context, their implications are limited with respect to a wider audience. The fact that findings here extend and support earlier iterations of the project and can be linked to research findings elsewhere, and the independent measurement against the CQ world norms were very positive indications, providing impetus for further development and application of the course.

7.4 ID implications for developing a pedagogy for CQ

In consideration of the detailed discussion above, a brief summary of design implications for CQ development is given here. Firstly, this investigation produced findings that could broaden understandings about the "how" (Leung et al., 2014) of ICC development and CQ growth. With further iteration, this area could be developed for focused attention. Secondly, the qualitative findings delivered a nuanced understanding of individual CQ growth that could be analysed further, lending insights to how these might be better understood and brought to the fore in future iterations. Learning designs for CQ that can track individual learning pathways – perhaps in the form of learning analytics – should yield valuable insights for personal development of the participants but also for further course refinements. Thirdly, the learning reflection checklist design feature of the course is an area that can benefit from development in many ways. Arguably most effective if a CQ training perspective is adopted for the learning review checklist, the CQ learning goals and achievements could become integrated as formal elements of a skills-training and -development. Such a course would have potential applications for organisational development work, and/or toward the lifelong learning goals of individuals.

This concludes chapter 7, marking the end of the investigation and its discussion. Forthwith, Chapter 8 presents the final summary and conclusion.

CHAPTER EIGHT

Summary & Conclusion

The increasing reach and utilization of online learning continue to influence organizations globally. Computers and the adjacent developments in 'smart' technologies are increasingly providing new means for personalizing learning, assisting in the design of learning through an exacting assessment of learner needs and knowledge, as well as in the measurement and capture the learning process and its outcomes. In many ways, technology is succeeding as a formidable partner in education. Increasingly however, there appears to be a divide between the profusion of technological features on offer and a shortage or non-existence of teaching principles, and/or methodologies to accompany or support it (Alonso, López, Manrique & Viñes, 2005). This trend raises a radical challenge for educational establishments and further forefronts the central role of instructional design, given its concern with how to meaningfully incorporate technological advances in established educational paradigms, pedagogies and learning traditions.

The proliferation of online learning has connected very different cultures and learning traditions and resulted in an increasing diversity in online learning groups. This trend has also extended to institutions of higher education and it therefore seems vital that educationists and instructional designers should consider not only the cultural sensitivity and appropriateness of educational methods and pedagogies, but also the intercultural competence of course participants that engage in online environments (Parrish & Linder-Vanberschot, 2010; Rogers, Graham & Mayes, 2007; Clem, 2004). Universities have long been expected to prepare graduates for future careers but the notion that the diversity of learning environments (physical or virtual) can be exploited to support the skill development of students seems to have been slow in gaining traction. This is perhaps as a result of the fast pace of expansion in the migrations of students internationally, but also noted to be partially due to the lack of an integrated underlying pedagogical approach that could support educators involved in this field (Leung, Ang & Tan, 2014; Fischer, 2011).

Institutions of higher learning (HE) in Japan have in recent years made various efforts to internationalize (Mori & Takeuchi, 2016). Embarking on a new educational initiative in 2011, the Japanese government (MEXT, 2018) has set a series of

requirements for universities to emphasize an education that would result in more 'internationally minded' graduates. This vision appears to consider the fact that graduates are increasingly likely to work in diverse environments, regardless of whether these will be based in local, foreign or virtual contexts (Livermore, 2011; Fischer, 2011).

The inception of this project was therefore grounded in two intertwined issues: firstly, the observation that within the broad background of expanding and globalized learning through online means, it has become evident that the cultural diversity of learners in real and virtual worlds are increasing rapidly; and secondly, this international trend has foregrounded the important role of relevant and appropriate ID&T in the development of culturally sensitive and adaptive learning pedagogies and their accompanying methods, materials and tools to support the globalization of learning in higher education. With these trends in mind, the current investigation brought some of these overlapping issues together in a focus on training and structured learning as necessary components for developing intercultural skill (ICC) of students at a Japanese university, with specific consideration given towards utilizing online technologies to enable the development of cultural intelligence (CQ).

In essence, this investigation thus explored how CQ development can be facilitated through the application of ID&T. To focus and guide the enquiry, a set of investigative research questions were posed at the outset:

1) Broadly speaking, how can the intercultural competence (ICC) – or, cultural intelligence (CQ) – of students at Japanese universities be nurtured, cultivated and developed?
2) More specifically, which theories within the fields of education, instructional design, psychology, cultural studies and human resources will be appropriate to investigate intercultural skill development and the consequent growth of CQ?
3) Given the interdisciplinary nature of the investigation, what type of models and theories could be effectively synthesized to create a framework for a research enquiry?
4) And, to explore the broad question of ICC development, how can this framework be applied to cultivate CQ in ways that would:
    a) support and guide the enquiry by delivering research data;

b) allow for the continuous iteration, adjustment, and development of relevant instructional materials and methods;
c) utilize and/or incorporate online learning applications, methods and tools?

Starting with the design and construction of a unique theoretical framework, the investigation was launched through an intercultural workshop, followed by a series of iterative design and expanded implementation phases that saw the development and iteration of a blended learning course conducted with student groups at a Japanese university. Utilizing the Successive Approximation Model (SAM) as a basic organizing principle, the research questions were explored through five cyclical phases of design, implementation and evaluation/reflection, delivering research findings that were drawn together and integrated with relevant theoretical aspects in an attempt to consider their implications with the original research goals in mind. A processual overview of the investigation, anchored in the SAM, is depicted in Figure 46, showing the eight phases and underlying research steps and iterative cycles.

Detailing the progressive phases of a 3-year project with undergraduates at a Japanese university, the investigation reported on eight incremental phases with several underlying iterations that delivered results and findings in respect of the stated research questions. In broad, the study covered the following aspects: (1) an introduction to present the inception and necessity for this investigation, with the accompanying research questions; (2) a literature review that presented theories and models from the relevant disciplines in this multi-disciplinary area, and the design of a framework of enquiry that guided research procedures and instruction; (3) methodological considerations for the research design and the ensuing enquiry; (4) the initial multicultural workshop design, development and implementation with resultant findings; (5) progressive course designs, additional designs and iterations with resultant findings; (6) further iterations with results, an external evaluation and additional design features to extend evaluative efforts; (7) a comprehensive discussion of the sets of findings from the project with a consideration of its implications, and finally, (8) a summary to conclude the project, with a view to future developmental work in the area of instructional and learning management systems that seeks to enhance the cultural intelligence of participants in/through online education.

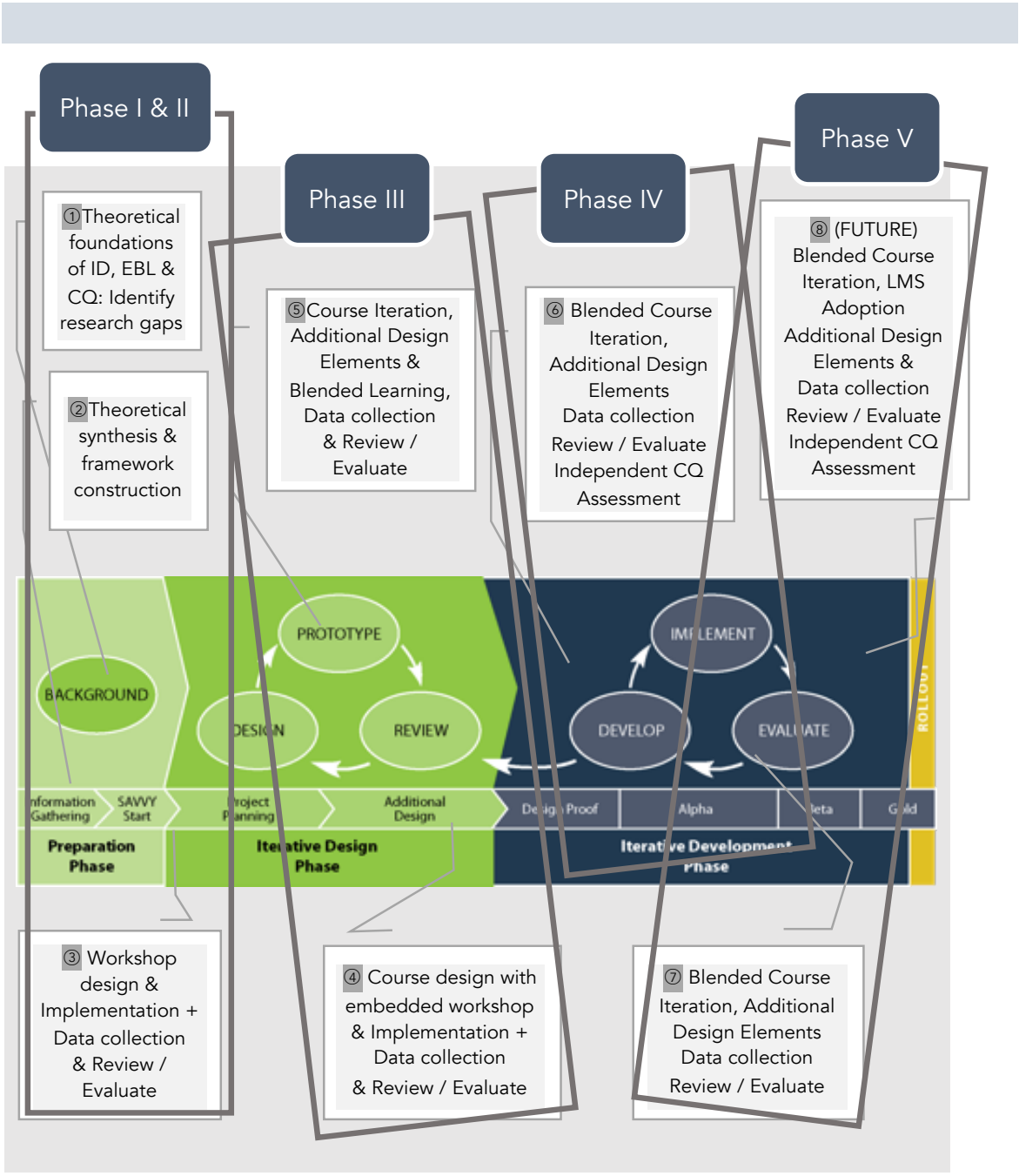


Figure 46. Investigating the development of CQ through an application of ID&T

Findings from Phase I & II suggested that the theoretical synthesis of relevant ID&T models, learning theory and intercultural competence (ICC) theory were successful in creating a solid investigative framework that enabled the implementation of a multicultural workshop. Participant feedback from this workshop provided valuable insights in terms of an audience analysis, contextual

factors and suggested a flexible design approach that could incorporate the use of smart technologies. A key observation was that appropriate pedagogy and technology should be utilized to support the cultivation, or enabling of ICC (or CQ) – and not be the source for providing ICC learning. This distinction points to the important utilitarian function of good pedagogy and the application of modern technologies.

The most prominent findings from Phase III, which initiated the incorporation of a blended learning format, suggested that online and F2F classroom work fused well, accommodating experiental and other forms of learning with all the required evaluations. Achieving sets of positive summative and formative learning results, this approach was deemed successful for cultivating ICC in participants, and marked changes were observed in terms of CQ development despite not achieving statistical significance, propably due to the small number of learners. Nevertheless, Phase III delivered a prototype course that could be taken forward for further iterative development. Although the framework appears sufficiently adaptable, it has to be kept in mind that different EBL activities and differences in learning contexts and contents will probably require calibrated adaptations of the underlying processes as advocated through the ID&T models that were synthesized.

Phases IV and V of the investigation constituted iterations of the prototype course, delivering further results and findings pertaining to the development of CQ. It further assumed an evaluative focus through the obtainment of an external CQ assessment (pre/post-course), an analysis of quantitative and qualitative results and the design of a learning reflection checklist. The external CQ assessment, expressed in terms of a comparision with worldwide norms, delivered statistically significant results on two of the CQ sub-factors, while further data analysis and the learning reflection checklist revealed positive findings that could be linked to the CQ development of participants on the whole. Taken together, these findings suggested strong support for the ICC course that was designed to develop CQ.

In summary, the application of ID&T theory to the field of ICC learning in this investigation proved to be an achievable goal. The integration of relevant theories and models from interdisciplinary fields gave rise to an investigative framework that proved to be successful in the design and application of multicultural workshops and in the design and iteration of a prototype blended learning university course utilizing several instrumental technologies available online and on smart devices.

Furthermore, the exploratory action-research approach that featured a multi-phase, mixed-methods design and anchored in the successive approximation model (SAM), delivered research findings that informed ongoing iterative development cycles, which in turn, helped to generate and develop pedagogical support for the development of ICC and the growth of CQ. This overall finding links directly to a central focus of this investigation, namely to understand "how" ICC can be developed (Leung et al., 2014) and achieving this through building suitable and appropriate pedagogies.

Although this is an encouraging finding overall, it is important to retain a realistic view of developments in this area of study. One of the central limitations that had to be accommodated in this study was the widespread dominance of Japanese cultural and linguistic aspects on campus, a feature that appears to remain true for many university campuses in Japan. The absence of significant levels of diversity made the design and implementation of multicultural instruction a challenging endeavor but increased the impetus for finding foreign connections and utilizing online platforms that could involve international counterparts. In another sense, this limitation can be taken as a challenge for future development, placing the present study's findings and its envisaged expansions in a position to make a positive contribution. In particular, the search for suitable learning management systems (LMSs) and the tracing of learning behaviors through these and its associated adaptive learning data capturing methods are already being explored for future iterative versions in this project.

A further challenge that emerged was that the sheer amount of ICC learning contents and the proliferation of learning technologies (learning platforms, applications on smart devices and some of the structural differences in such devices) can be overwhelming for both the instructor and students. If not managed carefully by all the learning participants, the distracting influences of ongoing "edutainment", technologically-related problem-solving and the lure of socializing with friends during class-time can completely subvert the learning goals. In view of the fact that our reality is already "blended" (Dziuban et al., 2013 p. 3), this finding increases the demand for ingenious and creative design to maintain the goals of learning. The implication here is therefore geared toward the development and further incorporation of suitable technologies that would enhance the growth of CQ, with ICC-focused online games and simulated experiences as two potential avenues for further exploration.

Another limitation that surfaced during the data analysis phases of the project is related to the sample sizes of the participant groups. Although it is encouraging that participants reported an enhanced sense of confidence in the noted CQ dimensions, it should be reiterated that the population is small and very localized in the present research context. While the findings reported here are valuable in terms of this project and potential further expansion in the local Japanese context, their implications are limited with respect to a wider audience. It is certainly encouraging that the independent CQ measure yielded a very positive result in terms of the world-wide norms, but it is necessary to attempt a replication study – perhaps with a larger sample and different instructor(s) – to support or contest the validation of the present findings.

Finally, it should be clear from these findings that the area of pedagogical development in the information age remains problematic. Alonzo et al. (2005), for instance, points to a central issue, namely the increasing divide between the profusion of technologies on offer and the shortage or non-existence of teaching principles and/or methods to support them. The implication is that the area of pedagogical development (and its role in specialized disciplines, such as ICC) will need to find ways to incorporate the explosion of learning technologies and its effects. The current project, in terms of its effort to create a suitable pedagogy for CQ, can attest to this: suitable and interesting content that can be delivered via the internet to participants in a variety of modes/formats are readily available. However, the pedagogical/design issue that remains is central to all education: how to work with participants in such a way that the learning content found is critically assessed and presented to benefit learning. In other words, the need for continued creative instructional design remains central to the future of learning in the 21st century.

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