Independent Empirical Article

Encapsulating holistic intercultural competence development in higher education: A literature review on assessments and competencies

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Abstract

Intercultural competence (IC) has been shown to be a critical asset for university graduates to appropriately and effectively perform in work- related settings that have become increasingly more diverse and intercultural. Therefore, it is fundamental to understand what constitutes effective IC development in higher education (HE). Within IC development, a more holistic understanding of IC assessment is needed. Thus, it is essential to comprehend how IC assessments work effectively, and their role in IC development. By reviewing empirical studies on IC development between 2000 and 2022, the particularities of IC assessments concerning administration, methods, and assessed competencies have been examined. Based on 31 papers, this literature review reveals the inconsistency of IC assessments in HE and proposes a holistic approach to IC assessments to bring more clarity to research and practice.

Introduction

Intercultural Competence is a vital competence for actors in culturally diverse spaces and has frequently been introduced in guiding principles for higher education institutions (HEI) that aim at more internationalization in learning (Castiello-Gutiérrez, 2020) to produce employable graduates (Zhang & Zhou, 2019). Globalization has caused cultural and political changes and is therefore a driver of interculturality (Griffith et al., 2016). Interculturality, referring to the formation of relationships among different social and ethnic groups by exchange and exposure (Medina-López-Portillo & Sinnigen, 2009), results in more culturally diverse work environments and behaviors (Lamberton & Ashton-Hay, 2015). People who respond well to those culturally diverse spaces and the respective diverse individuals are said to be equipped with IC (Jackson, 2015; Velten & Dodd, 2016). Developing IC, among other further competences, is necessary to respond to these

diverse populations and working behaviors (Deardorff, 2009; Knight, 2011; Lokkesmoe et al., 2016; Stier, 2006).

Various concepts such as *cross-cultural competence*, *global competence*, and *global citizenship* have been interchangeably used with IC. IC is also referred to as Intercultural Communication Competence (ICC; Deardorff, 2006). However, these concepts differ slightly (Deardorff, 2006). Deardorff's definition of IC is of value, as it is commonly accepted in higher education (HE) contexts (Barrett, 2012; Busse & Krause, 2016; Di Mauro & Bolzani, 2020; Prieto-Flores et al., 2016). Deardorff (2004) defined IC as the "ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (p. 247). Generally, the common ground of the various definitions of these terms includes multi-dimensional constructions and interactions with people from different cultures. IC is predominantly discussed and applied in the context of national cultures. This understanding is implicitly reflected in the term *intercultural*. The various definitions and models display the heterogeneous understandings of IC (Cushner, 2015). Among the critics, certain voices have emphasized the advantages of Deardorff's process model on IC in HE (Kampermann et al., 2021; Matveev, 2016; Tennekoon & Lanka, 2015).

In the context of HE, IC research highlights IC development in study abroad programs (Heinzmann et al., 2015; Bell, 2016; Williams, 2005; Behrnd & Porzelt, 2012), language learning (Moeller & Nugent, 2014; Hsu, 2022), seminars (Erez et al., 2013; Machado et al., 2016), virtual (Jon, 2013; Huang, 2023) and multicultural groups (Daly et al., 2015; Krajewski, 2011) contexts.

Literature has presented IC as an increasingly important requirement for participating in prospective organizations and their diverse workplaces (Spitzberg & Chagnon, 2009; Jon, 2013). However, this same literature provides multiple perspectives on definitions, interventions, and assessments that fail to present a coherent picture of effective IC development in HE. Consequently, despite the growing number of studies, this research stream lacks a consistent body of literature. Zhang and Zhou (2019) offer an overview of IC interventions concerning four educational approaches. However, researchers and practitioners must understand what constitutes an effective assessment to implement and assess IC in HE. "Questions around ICC development naturally lead to how to measure ICC and what evidence points to successful ICC development" (Deardorff, 2015a, p. 4). At this point, a more definite foundation is needed for research to cultivate a coherent understanding.

This literature review aims at bringing clarity to this issue. With the goal of filling the research gap addressed by Deardorff (2015a), "(w)hat are effective ways and methods to measure individuals' intercultural competence development more holistically?" (p. 4), this paper systematically reviews the current approaches to assessing IC in the context of HE and what IC competencies are being assessed through the different approaches of IC assessment published between 2000 and 2022. Although there is an extensive body of literature on this and related themes, the addressed research gap (Deardorff, 2015a) has not yet been filled.

As such, our study will contribute to the existing body of literature in three ways. First, we identify the varied approaches in IC assessment methods in HE by reviewing and discussing a specific sample of empirical studies. In the next step, we discuss the competencies assessed using the various IC assessment methods to explain which competencies are made transparent. Second, we critically examine the IC assessments concerning their administration, methods, and competencies. During this process, we focus on the principal aspects necessary for effective and holistic IC assessment in HE. Finally, we propose practical implications based on theoretical discussion that would allow research to advance toward a more holistic IC understanding. Such research facilitates a better understanding of IC development and the adoption of IC development in HE.

To do so, the paper first discusses the IC process model designed by Deardorff (2006). After providing this perspective, we describe the literature review process and code for IC assessment administration factors, methods as well as the IC dimensions according to Deardorff's model to categorize and analyze the assessed results. In the discussion, we give clear arguments based on our analyses on moving forward with a more holistic understanding of IC assessments in IC development.

Theoretical Framework

In this paper, to organize the systematic literature review findings, we use the process model on Intercultural Competence Development by Deardorff (2006). It represents a commonly used framework for the HE contexts. Despite being developed in the early 2000s, it is a foundational model that is still highly regarded and valid (Gopal, 2011; de Hei et al., 2019) for various reasons. The process model is based on the IC definition of Deardorff (2004), which has not changed since its first discussion. Therefore, it can be stated that the model is still applicable despite its emergence in the early 2000s. Besides, the model examines various levels of IC by highlighting four dimensions of IC development (compare Figure 1). In this vein, Kampermann et al. (2021) stated that "[t]he model moves from the individual level of attitudes/personal attributes to the interactive cultural level with regard to the outcomes" (p. 17). Furthermore, the internal dimension specifically has been addressed as a decisive factor in developing IC (Matveev, 2016). Deardorff stated, "[t]he attainment of ICC is a lifelong developmental process which means there is no point at which one becomes fully interculturally competent" (Deardorff, 2016, p. 121). Diverse experiences and the processing of experiences over time have shown IC development to be cyclical rather than linear (Moeller & Nugent, 2014; Tennekoon & Lanka, 2015). Compared with other IC models, this process model offers insights into relational and social aspects, as interactions with others are fundamental for fostering IC development (Schmidmeier et al., 2020). By focusing on the cyclical learning process and the outcome-oriented development of IC it helps build the argument for "effective and appropriate" (Deardorff, 2004, p. 247) communication across cultures.
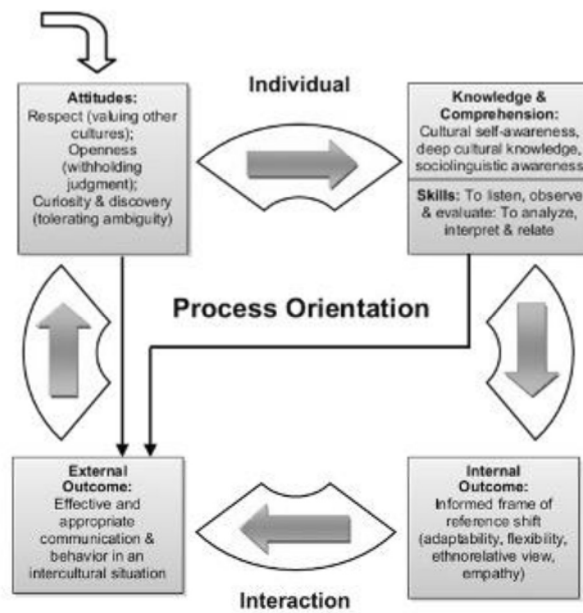

Figure 1. Process model on Intercultural Competence Development, (Deardorff, 2006)

Deardorff's process model on IC is composed of four key dimensions. The starting point of IC learning is its first dimension: attitudes. This dimension defines an individual's characteristics and internal attitudes that are key to beginning IC development. For instance, an individual's openness toward other cultures and cultural diversity are fundamental for engaging in this developmental process (Deardorff, 2006). On the individual level, culture-specific knowledge and comprehension are developed to understand the functions of cultural competencies and strategies. This knowledge and comprehension dimension targets the cultures of the individual (part of cultural self-awareness) and others - consequently, skills like observing, listening, and analyzing mirror cultural comprehension in this dimension.

The next dimension includes the internal outcomes mainly concerned with developing intercultural traits. For instance, individuals develop ethno-relative views, empathy, cognitive flexibility, and adaptability. Reflectiveness is a key component in this dimension, as individuals should be able to change and apply various perspectives flexibly on intercultural issues and encounters. In the dimension of external outcomes, individuals demonstrate their ability to transfer their international processes into visible performances and encounters. Therefore, the individual's performance and communication are adjusted in intercultural encounters, and the respective goals are mutually met (Deardorff, 2006).

Methodology

For systematically gathering and reviewing literature, this research employed the literature search process and the systematic literature review (SLR) created by Denyer and Tranfield (2009). This study excluded potential selection biases by applying a structured, pre-defined approach for selecting literature. For the basis of this review, the database Scopus was used for retrieving high-quality, peer-reviewed articles. In a cross-disciplinary comparison, Scopus offers more peer review results than Web of Science (Harzing & Alakangas, 2016). We focused on publications from 2000 to August 2022, and the publication language had to be English. Furthermore, we narrowed our research to journal articles, books, and book chapters, excluding conference and working papers.

Although several terms for intercultural competence are used within publications, upon initial review, we decided to focus on the following terms and concepts for the selection criteria in *Abstract, Title and Keywords*:

Table 1: Selection Criteria of Literature Review Process

"Cultural Intelligence" AND		N = 638	
"Intercultural Competence" AND		N = 606	
"Cross-Cultural Competence" AND	Foster* Develop*	N = 162	Total: 1409
"Multi-Cultural Competence" AND	Assess* Measure*	N = 3	

We exported the references to EndNote 9.0 and deleted duplicates arriving at the final number of 1229 sources. We identified 78 sources by creating a smart group following the limitations and using Boolean operators for abstracts.

Table 2: Boolean Operators for Literature Review Process in Endnote 9.0

	Abstract	Contains	Students
AND	Abstract	Contains	Higher education
OR	Abstract	Contains	University
AND	Abstract	Contains	Empirical
OR	Abstract	Contains	Experiential

Papers were eligible for review if they contained empirical research data within HE. The studies were required to involve students' IC development. Therefore, we had to exclude research that took teachers, practitioners, or expatriates as sample groups. By thoroughly examining these identified articles' abstracts, we rejected all articles that did not include empirical research, primary data, IC assessments, or developments in curricular activities, leaving a total number of N = 48 articles. Additionally, we excluded publications that were not sufficiently focused on empirical research and IC assessment. These studies instead validated scales, introduced meta-analyses, or discussed IC on a theoretical level. The final number of publications was 31.

The content of the literature was managed by using an Excel spreadsheet to summarize the key characteristics of the studies. The papers were coded for the following factors with regard to the assessment administration: formative (several assessment points throughout the intervention, Deardorff, 2015b) or summative (one assessment in an intervention, usually at the end of an intervention, Deardorff, 2015b), direct (actually observable behavior and samples of work, Deardorff, 2015b) and indirect evaluation (transported assessment through self-assessments or interviews by i.e., instructors, Deardorff, 2015b), punctual or systemic-processual assessments (either focusing on the analysis and assessment of sub-dimensions or assessing and analyzing the data as a whole unit, Bolten, 2007) and lastly the perspective of the assessment, which is three-fold in self-reported, informant-based or performance-based (Leung et al., 2014). Additionally, the data was coded for the assessed competencies categorized after the four dimensions according to Deardorff's process model (Deardorff, 2006, compare Appendix 1.).

IC assessment administration

Table 3: Distribution of studies regarding IC assessment administration factors

Factor	Peculiarity	Number of studies
Point in Time of Assessment (Deardorff, 2015b)	Formative	20
	Summative	11
Nature of Evaluation/Assessment (Deardorff, 2015b)	Direct	/
	Indirect	30
	Combined (Direct & Indirect)	1
Nature of Assessment (Bolten, 2007)	Punctual	18
	Systemic–Processual	8
	No (sub-)dimensions mentioned	5
Perspective of Assessment (Leung et al., 2014)	Self-reported	17
	Informant-based	6
	Performance-based	0
	Combined	
	Self-Reported & Informant-Based	7
	Self-Reported & Performance-based	1

Out of 31 studies, 20 followed a formative approach concerning the time the assessment was conducted (e.g., Behrnd, 2008; Chan et al., 2021; Roller, 2015). Concretely, these projects conduct multiple assessments of the students' IC in a certain time frame, for example before and after an intervention. However, a more regular, frequent timing of assessments is to be understood here, too. Summative assessments were conducted in the remaining 11 studies, focusing on a single assessment in the intervention process (e.g., Chen, 2015; Daly et al., 2015; Dervin, 2017). One study applied a combination of direct and indirect approaches (Machado et al., 2016), while the remaining 30 only used indirect evaluation approaches (e.g., Krajewski, 2011; Wang et al., 2021; Young et al., 2017).

In this sample, 18 papers included the sub-dimensions of intercultural competence in the analysis and thus were identified as punctual (e.g., McClinton & Schaub, 2017; Iskhakova et al., 2021; MacNab, 2012). Eight studies analyzed IC as a whole and were therefore categorized as systemic-processual (e.g., Erez et al., 2013; Machado et al., 2016; Zhou & Pilcher, 2018). In the remaining five papers, no (sub-) dimensions were considered (e.g., Daly et al., 2015; Krajewski, 2011; Matsunaga et al., 2003). Concerning the perspective of the assessments, 17 papers relied on self-reported assessment methods (e.g., Balogh et al., 2011; Chen, 2015; Luka et al., 2013), whereas six papers used informant-based approaches (e.g., Dervin, 2017; Matsunaga et al., 2003; Zhou & Pilcher, 2018). A combination of self-reported and informant-based assessments was used in seven papers (e.g., Chan et al., 2021; Kurpis & Hunter, 2016; Roller, 2015). Moreover, one study conducted self-reported and performance-based assessments (Machado et al., 2016). A sole performance-based perspective was not identified.

Intercultural Competence Assessment Methods

The pool of studies shows a tendency toward quantitative methods, employed by 17 out of 31 studies (e.g., Aba, 2019; Li & Longpradit, 2022; MacNab & Worthley, 2012). Further, it features six qualitative (e.g., Corder & U-Mackey, 2015; Dervin, 2017; Matsunaga et al., 2003) and eight multi-method approaches (e.g., Chan et al., 2018; Fakhreldin et al., 2021; Roller, 2015). Among the quantitative studies are questionnaires and surveys (e.g., Erez et al., 2013; Luka et al., 2013; MacNab, 2012; Young et al., 2017). Qualitative studies display a greater variety of sources, such as reflective journals or essays (Matsunaga et al., 2003; Zhou and Pilcher, 2017), narratives (Dervin, 2017), and wikis (Corder & U-Mackey, 2015).

The multi-method approach combines quantitative and qualitative assessment methods, for instance, surveys and reflection papers (Kurpis & Hunter, 2016) or surveys and critical incidents (Machado et al., 2016).

Assessed Competencies after the Process Model by Deardorff (2006)

Overall, 66 different assessed competencies were identified and matched to the four dimensions of the process model (Deardorff, 2006, compare with table four). For each dimension of the process model, several competencies were identified that were used in the studies of this pool of literature. We identified for each of the dimensions several competencies that were frequently assessed in the studies of our pool of literature. The dimension of internal outcomes showed the greatest variety with 25 assessed competencies, followed by knowledge and comprehension with 16 different competencies. Accordingly, the dimension of external outcomes indicated 13 competencies. Lastly, 12 competencies were identified for attitudes.

The most frequently assessed competency in the dimension of attitudes is openness (e.g., Zhou and Pilcher, 2018; Ramji et al., 2021), covered by six papers. Respect was assessed in five studies, while the other 10 competencies of the attitudes dimension were conducted in either one or two studies each. The other competencies, i.e., 10 out of 12, are represented with either one or two papers. For the second dimension of knowledge and comprehension, culture-specific knowledge is the most frequently assessed competence and was assessed in seven studies (e.g., Chan et al., 2018; Corder & U-Mackey, 2015; Krajewski, 2011). In addition to that, cultural awareness is also evident in six papers (e.g., Daly et al., 2015; Corder & U-Mackey, 2015; Deveci et al., 2022). Again, the remaining competencies were assessed in either one or two studies each. Alteration of perspectives was the most frequently assessed competency for internal outcomes, with six papers (e.g., Dervin, 2017; Machado et al., 2016; Zhou & Pilcher, 2018). (Interactional) confidence was assessed in five papers (e.g., Aba, 2019; Li & Longpradit, 2022; Kurpis & Hunter, 2016), while empathy (e.g., Machado et al., 2016), flexibility (e.g., Fakhreldin et al., 2021), critical reflection (Chan et al., 2021), and self-reflexivity (e.g., Roller, 2015) were represented in three studies, each. These form a center field, as the following competencies are again represented here in isolated cases. In the dimension of external outcomes, relationship cultivation was assessed in three (Aba, 2019; Ramji et al., 2021; Jackson, 2015) studies. Two studies assessed adapt to new communication styles (Chan et al., 2021; Fakhreldin et al., 2021). The remaining competencies were respectively mentioned in one paper.

From a methodological perspective, in terms of the attitude dimension, a preponderance of multi-method approaches can be identified (13 papers), followed by qualitative (eight papers) and quantitative (three papers; compare with figure 2).
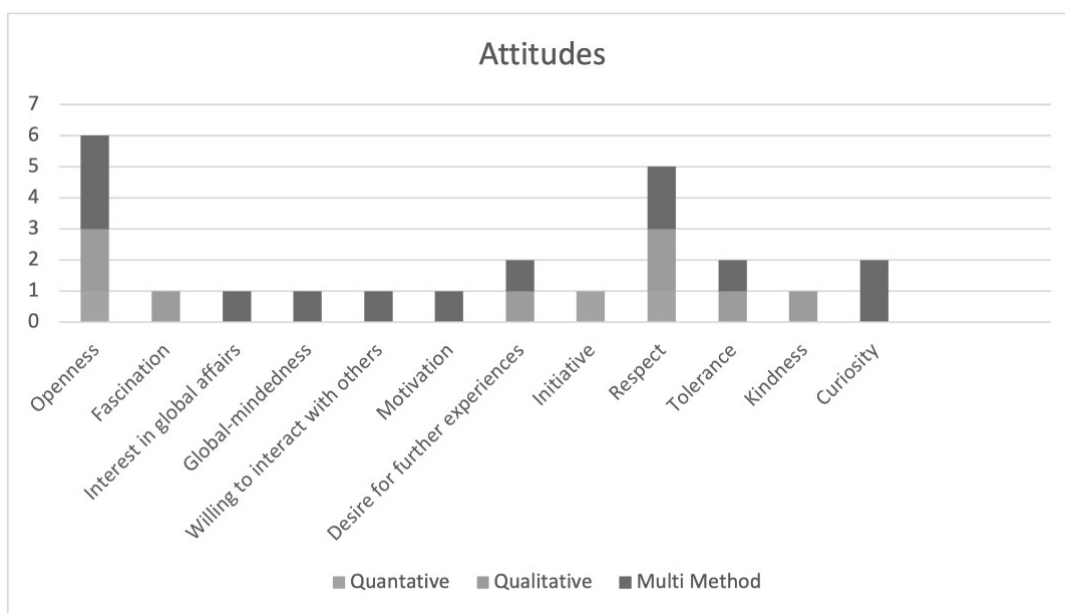

Figure 2. Distribution of Methods for Assessed Competencies, Attitudes

While respect and openness have already been identified as the most common competencies for this dimension, it can also be noted here that these two were also made transparent by all three methods.

In knowledge and comprehension, a similar distribution is visible. Here, the multi-method studies also form the majority with 13 papers (compare with figure 3).
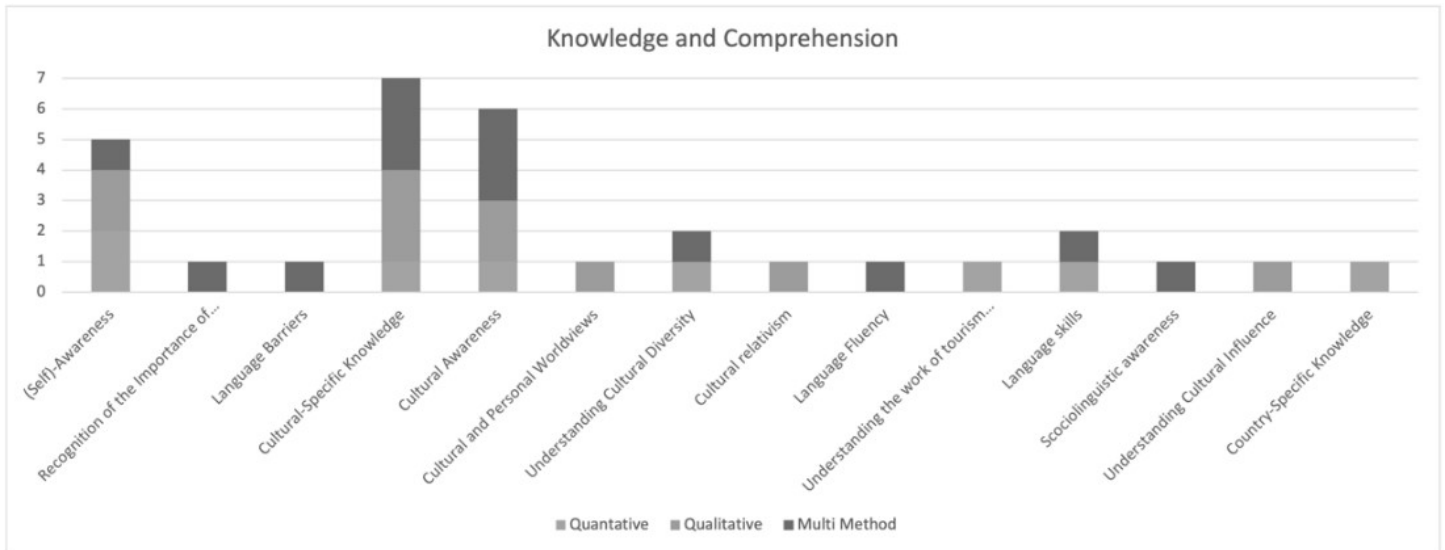

Figure 3: Distribution of Methods for Assessed Competencies, Knowledge, and Comprehension

However, the qualitative with ten and quantitative with eight papers are closer. The most common competencies were also measured with a broader variety of methods, for example culture-specific knowledge and cultural awareness.

The internal outcomes dimension represents the last dimension, which is also dominated by multi-method approaches (19 papers) (compare Fig. 4).
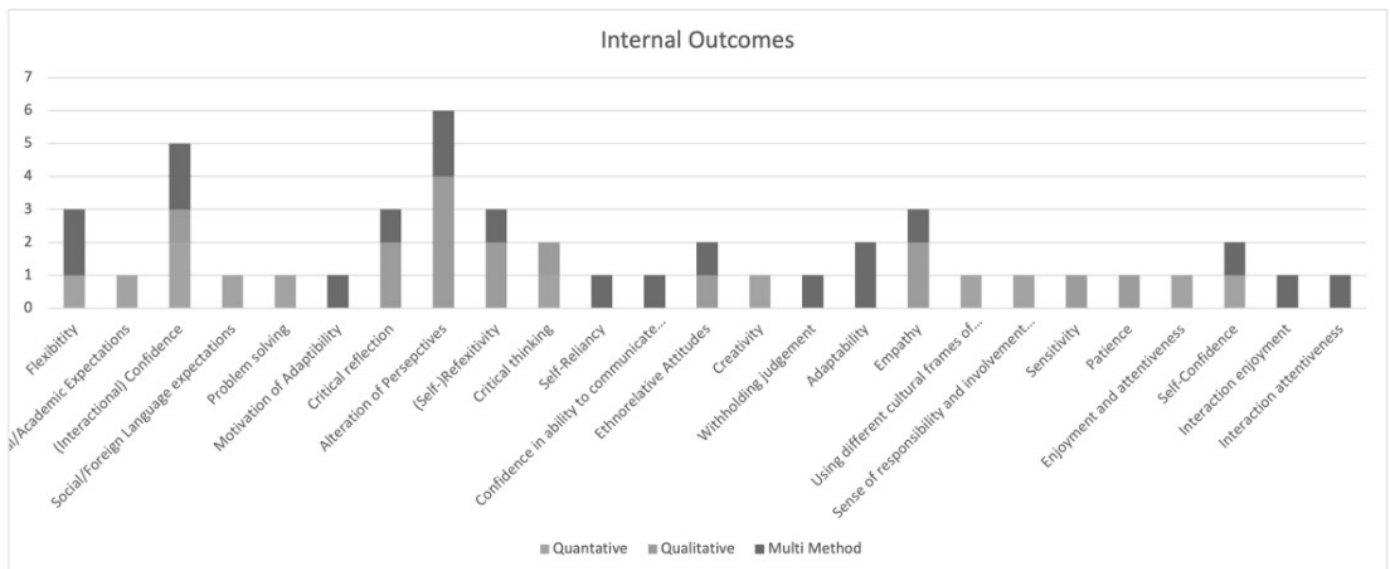

Figure 4: Distribution of Methods for Assessed Competencies, Internal Outcomes

Also noted is the gap between qualitative with 15 and quantitative with twelve papers. Qualitative and multi-method assessments find the most frequently measured competency alteration of perspectives. (Interaction) Confidence is the only competency that was measured by all three methodological approaches.

Lastly, for the external outcomes dimension, it can be determined that this dimension is the only one in which, after the multi-method papers in the first place (nine papers), quantitative approaches can be found with five papers and closely followed by qualitative papers with four (compare Fig. 5).
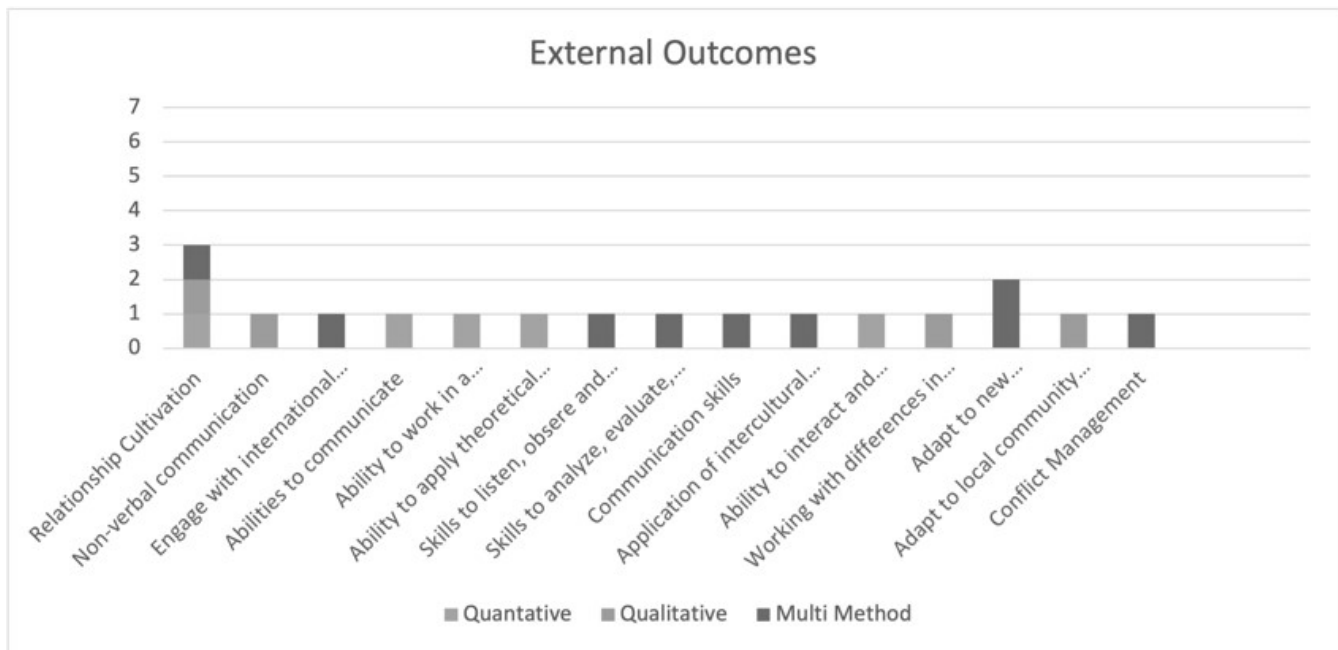

Figure 5: Distribution of Methods for Assessed Competencies, External Outcomes

Discussion

This literature review aimed to provide a clearer understanding of IC development in HE by answering the question, "(w)hat are effective ways and methods to measure individuals' intercultural competence development more holistically?" (Deardorff, 2015a, p. 4). The perspective of IC assessment was applied to provide a foundation to answer this question. A detailed understanding of the IC assessment approaches allows a more efficient and appropriate adoption of IC development. Mažeikienė and Virgailaitė-Mečkauskaitė (2007) stressed the importance of the holistic picture for an applied assessment. A holistic IC assessment comprises the right choice of IC assessment administration factors and methods. Ultimately, the IC assessment must respond to the overall concept that reflects how IC is defined and operationalized in modeling (Griffith et al., 2016). For HE purposes, IC assessment must respond to fostering effective and appropriate reactions in intercultural situations and the four dimensions posed by Deardorff (2006).

IC assessment administration

IC is a circular learning process that can be monitored only through formative assessments. Multiple measurement points within an intervention allow students to recognize and thus help shape their process in stages (Deardorff, 2015b). Instructors can measure their interventions' effectiveness by measuring IC at least at the beginning and end of each intervention. As learner characteristics also impact the learning process, multiple assessment points help instructors adapt to the heterogeneity of students. Summative assessments are beneficial for researching the intersections between concepts (e.g., Ang et al., 2007). However, they do not respond to the processual learning of IC. Punctual assessments yield more detailed insights into the state of IC development (Bolten, 2007). This approach allows instructors to cater IC development to specific IC sub-dimensions.

Less than two-thirds of the sample considered a punctual approach and thus hindering the comparability of studies and students. A more distinguished perspective on the dimensions might help students and instructors understand students' strengths and limitations and thus indicate an effective IC development.

The nature of IC is an interactional, people-focused concept that seeks translation into actual behavior in intercultural encounters (Deardorff, 2006). The students' perspective is required to gain insights into the internal aspects and attitudes, whereas the outsiders' perspective captures the external, performance-based aspects (Leung et al., 2014). The external perspectives ensure the independent evaluation of behavior in terms of effectiveness and appropriateness. Furthermore, the student usually has only themselves as a point of evaluation. In contrast, the instructor can contextualize the respective IC development within, for example, a classroom with a broader range of comparisons and possible behavioral aspects that helps them evaluate the IC development.

The sample shows a strong tendency, 30 out of 31, toward indirect evaluations, which results in a one-sided assessment. Both self-reported and informant-based perspectives are based on students' explanations (Leung et al., 2014). Self-reported measures favor socially desirable answers and pose the "intercultural learning paradox" (Goldstein, 2022, p. 33), in which the assessment outcomes after an intervention are decreasing due to the discomfort students might experience. Performance-based assessments reflect IC from a behavioral perspective and are thus independent of students' self-assessments (Leung et al., 2014). A combination of all three yields different perspectives and inputs and therefore checks for discrepancies.

IC assessment methods – Quantitative versus Qualitative

The common observation that quantitative methods are widely applied to research projects on IC in HE (Arasaratnam, 2016) is supported by the analysis of the pool of studies. Although quantitative methods present a relatively objective approach for generating data, the self-reporting approach is strongly criticized for lacking external perspectives and simplifying lived experiences in numerical data. Additionally, quantitative self-assessment scales lack the behavioral dimension. Quantitative methods might offer a limited perspective of IC development because they are "[…] not able to assess appropriateness given that appropriateness can be assessed only by others" (Deardorff & Jones, 2012, p. 168-169). The research and practice field must realize that IC is a highly interactive and person-centered concept dominated by interaction with others (Spitzberg & Changnon, 2009). Hence, the lack of the behavioral dimension and the focus on self-administered data offer only partial insights into the IC development of students (Zhang & Zhou, 2019).

In comparison to quantitative IC assessment methods, qualitative tools are composed of, among others, assessment centers, portfolios, and interviews, offering a more robust perspective on how an individual performs and interacts in certain situations. Qualitative methods demand more time for completion, leaving far more room for interpretation (than quantitative methods) in two respects. First, they leave more room for interpretation of competencies, such as questions in qualitative interviews. Second, they leave just as much room for interpretation of participants' answers. Thus, the information gain can be significantly higher than in quantitative methods, such as self-assessment scales. That is, it is possible to comprehend content that is neither covered nor assessed by applying a Likert scale in a self-assessment.

Neither are these two approaches comparable, nor is one of these methodological approaches better than the other. Instead, these methods generate different data and insights into the process of IC development. However, it is noteworthy that combining these two methods strengthens the benefits and overcomes the disadvantages of each method with regard to IC development. Thus, IC assessment demands a holistically multi-perspective and -method approach (Paras et al., 2019).

However, the results indicate that too few studies follow a holistic approach, especially that of a multi-method IC assessment. The consequences for the research field are found mainly in the comparability of the studies. Study results cannot be compared because studies follow different methodological approaches and thus produce various forms of results. Therefore, the diversity of these results cannot lead to a uniform understanding of IC assessment and IC development.

Assessed competencies linked to IC

To understand IC development, one must understand which competencies are considered essential and are captured by IC assessment. Because there is no fixed set of competencies, comparisons between studies are difficult because the ground of comparability is missing. The results show that 31 studies assessed 66 different competencies. This paper reveals the most frequently assessed competencies for each IC sub-dimension for HE frameworks. It is important to note that the

most frequently assessed IC competencies might not represent the most important competencies for HE. The so-called run-away effect (or positive feedback loop; Keesing, 1981) means that people tend to associate specific competencies with certain dimensions of IC development, such as those described by Deardorff (2006), based on their research situation and knowledge. In this way, people place more importance on these competencies than on others that have been less researched, creating a loop that reinforces the importance of specific competencies and thus makes them more relevant by reproduction.
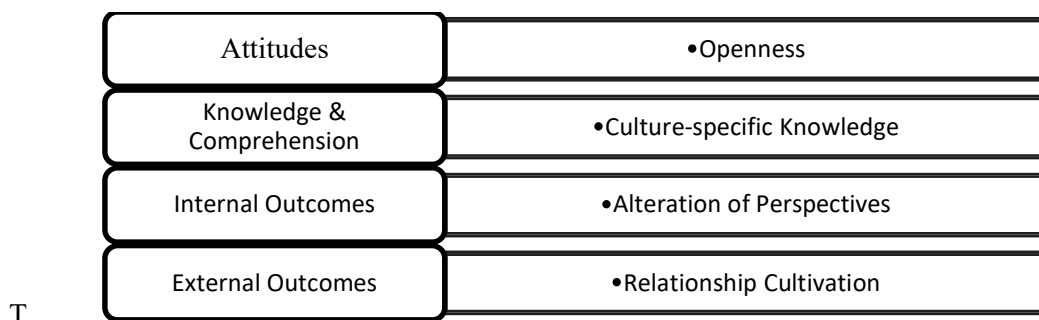
Attitudes	•Openness
Knowledge & Comprehension	•Culture-specific Knowledge
Internal Outcomes	•Alteration of Perspectives
External Outcomes	•Relationship Cultivation

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Figure 6: Most frequently assessed competencies for each process model dimension

Figure six lists the most frequently assessed competencies for each dimension of the process model. As the dimension of attitudes represents the starting point of the cyclical learning process, the identified competencies within this dimension filter the processing of intercultural experiences (Deardorff, 2006). According to the pool of studies used in this research, openness seems to be the most central attitude and has been assessed with quantitative, qualitative, and multi-method approaches, emphasizing its validity as a central attitude for this dimension. As this dimension depends on internal and external evaluations, combining direct assessments with indirect assessments (Deardorff, 2015b) and self-reported approaches with informant-based approaches (Leung et al., 2014) supports the nature of this dimension.

In the knowledge and comprehension dimension, the competency of culture-specific knowledge is the most significant. The second dimension represents the second step in IC development and focuses on what is usually referred to as awareness and learning of other cultures (Deardorff, 2006). Here, quantitative, direct, and self-reported data is consistent with the learning of cultural facts and rules. External perspectives and evaluations, as in indirect evaluations (Deardorff, 2015b) and informant-based perspectives of assessment (Leung et al., 2014), can help foster the IC learning process and offer a reality check of what has been truly learned.

For the internal outcomes dimension of IC development, alteration of perspectives was the most frequent competency. Changing perspectives is key for effective and appropriate interaction with others in intercultural situations (Spitzberg & Chagnon, 2009). Because this dimension offers the first outcome from an internal perspective, the IC assessment administration and methods must also mirror this internal outcome process. Internal outcomes require certain reflexivity and understanding of emotional facets (Deardorff, 2006). Thus, qualitative, or multi-method approaches might be more appropriate to capture these different facets. A combination of self-reported and informant-based perspectives (Leung et al., 2014) might offer a dialogical exchange on these outcomes.

In the external outcomes dimension, the results highlight relationship cultivation as the most frequent competency. With this dimension, the three dimensions mentioned earlier are put into practice. The findings correspond with the IC definition that highlights the behavioral aspect of intercultural encounters (Deardorff, 2006). With the translation of mental competencies into a behavioral dimension, the need for performance-based perspectives is obvious. A performance-based perspective of assessment, as posed by Leung et al. (2014), is necessary to capture the behavioral components of IC and understand the level of appropriateness. Thus, regarding the nature of evaluation (Deardorff, 2015b), indirect approaches are necessary to support this notion.

Implications and Conclusion

The findings of this study add to the literature on IC development and IC assessment in the context of HE. This study uncovers the inconsistency in research and practice, as cases differ significantly from one another. This inconsistency affects the comparability of studies, as studies often only highlight partial aspects of IC development and even these from specific perspectives only. As a holistic picture of IC development is missing, this study proposes a model to explain how IC assessment impacts the outcomes of IC development, which further creates holistic approaches to IC development. With these findings, the study makes several specific theoretical contributions.

First, the findings highlight that IC development asks for holistic IC assessment composed of several components that have been widely neglected in the literature. A formative approach mirrors processual IC learning and multi-sided perspectives capturing the effectiveness and appropriateness of behavior. Direct and indirect assessments must subject the attitudes to a reality check. Performance-based assessments are necessary to monitor mental competencies' translation into actual behavior. Future studies should solicit evidence for the discrepancies caused by the assessment administration criteria and understand whether a combination of these different criteria bridges these discrepancies. In addition, it needs to be determined what training informant- and performance-based instructors and peers need to perform effective IC assessments.

Second, the study emphasizes the connection between IC assessment methods and IC modeling. The adoption of IC assessment must be consistent with the definition and models applied to the research context. Although quantitative methods are widely applied, they lack perspectives and are inconsistent with some of the IC model's dimensions. A more sophisticated and holistic assessment, such as a conglomerate built by combining qualitative and quantitative assessment methods and multi-perspective approaches, is required to assess IC holistically. Furthermore, the IC assessment tools used for the various approaches must correspond with the model developed for the context. In HE, it is essential that these methodological approaches mirror the four dimensions of the process model (Deardorff, 2006). Future IC assessment research should consider the nature of the various methods and tools and how these match the notion of the IC dimensions. IC modeling must refer to the appropriate use of methods and tools to create a foundation for IC assessments.

Third, the study shows that a clear definition of competencies is missing, as only trends of the essential competencies for each IC dimension can be determined. The basis for measuring specific competencies is missing due to the unclear theoretical framework. Therefore, it is imperative for future HE researchers to test these competencies and understand their relevance within the context of intercultural encounters posed by HE.

This study involves certain limitations. For instance, it focused only on peer-reviewed articles accessible through Scopus with the database that laid the foundation for this research. Therefore, using a combination of databases could influence the sample of this literature review. Additionally, the use of keywords in Scopus influenced the results, so different operators and concepts could have delivered different results. Furthermore, publications using keywords that would have fit all our criteria were dismissed. Although there is an extensive body of literature on IC in HE available in French or German, we have focused on English publications solely. Introducing a multi-language approach for the language of publications would certainly have impacted the final pool of studies.

Moreover, although an objective approach to the literature search was followed strictly, biases cannot be dismissed. For instance, one's culture and educational background strongly influence the IC field. Therefore, this literature review reflects the researchers' cultural biases and education.

In addition, the applied process model (Deardorff, 2016) on IC development represents one approach among several other definitions and models. The four-dimension process was concretely followed to analyze the pool of studies. Nevertheless, a different approach with a different number of dimensions and perspectives could deliver different results.

Despite the abovementioned limitations, this study marks a first step toward reorganizing the body of literature more consistently and to better understand IC assessments in IC development. Future research needs to take the next step and deepen the understanding of the appropriate use and administration of IC assessments with regard to HE-specific IC development.

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Appendix A
Identified Competencies after the process model by Deardorff (2006)

Dimension after Deardorff	Attitudes (12)	Knowledge and Comprehension (16)	Internal Outcomes (25)	External Outcomes (13)
	3/8/13	8/10/15	12/15/19	5/4/7
66 assessed competencies	**Openness (6)** (Aba, 2019; Zhou & Pilcher, 2018; Ramji et al., 2021; Machado et al., 2016; Chan et al., 2021; Fakhreldin et al., 2021)	**Culture-Specific Knowledge (7)** (Krajewski, 2011; Chan et al., 2018; Kurpis & Hunter, 2016; Machado et al., 2016; Corder & U-Mackey, 2015; Zhou & Pilcher, 2018; Ramji et al., 2021)	**Alteration of Perspectives (6)** (Dervin, 2017; Zhou & Pilcher, 2018; Matsunaga et al., 2003; Riner, 2013; Machado et al., 2016; Kurpis & Hunter, 2016)	**Relationship Cultivation (3)** (Aba, 2019; Ramji et al., 2021; Jackson, 2015)
	Respect (5) (Li & Longpradit, 2022; Zhou & Pilcher, 2018; Ramji et al., 2021; Machado et al., 2016; Deveci et al., 2022)	**Cultural Awareness (6)** (Daly et al., 2015; Corder & U-Mackey, 2015; Matsunaga et al., 2003; Deveci et al., 2022; Fakhreldin et al., 2021; Machado et al., 2016)	**(Interactional) Confidence (5)** (Aba, 2019; Corder & U-Mackey, 2015; Li & Longpradit, 2022; Kurpis & Hunter, 2016; Deveci et al., 2022)	**Adapt to new Communication Styles (2)** (Chan et al., 2021; Fakhreldin et al., 2021)
	Curiosity (2) (Machado et al., 2016; Fakhreldin et al., 2021)	**(Self-) Awareness (5)** (Aba, D., 2019; Krajewski, 2011; Dervin, 2017; Riner, 2013; Jackson, 2015)	**Flexibility (3)** (Aba, D., 2019; Machado et al., 2016; Fakhreldin et al., 2021)	**Non-verbal communication (1)** (Corder & U-Mackey, 2015)
	Desire for further experiences (2) (Zhou & Pilcher, 2018; Kurpis & Hunter, 2016)	**Recognition of the Importance of Learning about and from Cultural Diversity (1)** (Chan et al., 2018)	**Empathy (3)** (Machado et al., 2016; Riner, 2013; Zhou & Pilcher, 2018)	**Engage with international newscasts and events (1)** (Jackson, 2015)
	Tolerance (2) (Machado et al., 2016; Zhou & Pilcher, 2018)	**Language Barriers (1)** (Chan et al., 2018)	**Critical reflection (3)** (Corder & U-Mackey, 2015; Chan et al., 2021; Ramji et al., 2021)	**Abilities to communicate (1)** (Luka et al., 2013)
	Fascination (1) (Dervin, 2017)	**Cultural and Personal Worldviews (1)** (Corder & U-Mackey, 2015)	**(Self-)Reflexivity (3)** (Dervin, 2017; Zhou & Pilcher, 2018; Roller, 2015)	**Ability to work in a multicultural team (1)** (Luka et al., 2013)
	Interest in global affairs (1) (Jackson, 2015)	**Understanding of Cultural Diversity (2)** (Daly et al., 2015; Roller, 2015)	**Critical thinking (2)** (Dervin, 2017; MacNab et al., 2012)	**Ability to apply theoretical knowledge in practice (1)** (Luka et al., 2013)
	Global mindedness (1) (Jackson, 2015)	**Cultural relativism (1)** (Dervin, 2017)	**Social/Foreign Language expectations (1)** (Aba, 2019)	**Communication skills (1)** (Machado et al., 2016)
			Problem solving (1) (Behrnd, 2008)	**Application of intercultural practices (1)** (Machado et al., 2016)
			Motivation of Adaptability (1) (Chan et al., 2018)	**Ability to interact and collaborate in cross-cultural situations (1)** (MacNab et al., 2012)
			Self-Reliance (1) (Jackson, 2015)	
			Confidence in ability to communicate ideas and emotions (1) (Jackson, 2015)	

Dimension after Deardorff	Attitudes (12)	Knowledge and Comprehension (16)	Internal Outcomes (25)	External Outcomes (13)
	Willing to interact with others (1) (Jackson, 2015)	**Language fluency (1)** (Jackson, 2015)	**Ethnorelative Attitudes (2)** (Kurpis & Hunter, J. 2016; Zhou & Pilcher, 2018)	**Working with differences in a diverse team (1)** (Matsunaga et al., 2003)
	Motivation (1) (Kurpis & Hunter, 2016)	**Understanding the work of tourism business (1)** (Luka et al., 2013)	**Adaptability (2)** (Machado et al., 2016; Fakhreldin et al., 2021)	**Adapt to local community styles (1)** (Ramji et al., 2021)
	Initiative (1) (Luka et al., 2013)	**Language skills (2)** (Luka et al., 2013; Roller, 2015)	**Creativity (1)** (Luka et al., 2013)	**Conflict Management (1)** (Fakhreldin et al., 2021)
	Kindness (1) (Ramji et al., 2021)	**Sociolinguistic awareness (1)** (Machado et al., 2016)	**Withholding judgment (1)** (Machado et al., 2016)	
		Understanding Cultural Influence (1) (Matsunaga et al., 2003)	**Using different cultural frames of reference (1)** (MacNab et al., 2012)	
		Country-specific knowledge (1) (MacNab et al., 2012)	**Sense of responsibility and involvement with global issues (1)** (MacNab et al., 2012)	
		Skills to listen, observe and interpret (1) (Machado et al., 2016)	**Sensitivity (1)** (Riner, 2013)	
		Skills to analyze, evaluate, and relate (1) (Machado et al., 2016)	**Patience (1)** (Riner, 2013)	
			Enjoyment and attentiveness (1) (Li & Longpradit, 2022)	
			Self-confidence (1) (Li & Longpradit, 2022; Deveci et al., 2022)	
			Interaction enjoyment (1) (Deveci et al., 2022)	
			Interaction attentiveness (1) (Deveci et al., 2022)	
			Professional/Academic Expectations (1) (Aba, 2019)	

Note. *Quantitative*/*Qualitative*/*Multi-Method*

Appendix B
Overview of Pool of Studies

Authors	Quantitative (1) Qualitative (2) Multi-Method (3)	IC Assessment Methods		Point in Time of Assessment (Deardorff, 2015b) Formative (4) Summative (5)	Nature of Evaluation/Assessment (Deardorff, 2015b) Direct (6) indirect (7)	Nature of Assessment (Bolten, 2007) Punctual (8) Systemic-processual (9)	Perspective of Assessment (Leung et al., 2014) Self-reported (1) infomant-based (2) Performance-based (3)
		Description					
Aba (2019)	1	Survey		5	7	8	1
Balogh et al. (2011)	1	Survey		5	7	8	1
Behrnd (2008)	1	Survey		4	7	8	1
Chan et al. (2021)	3	Survey, Interview, Reflective Diary, Report		4	7	8	1&2
Chan et al. (2018)	3	Survey, Discussion, Focus Group		4	7	8	1&2
Chen (2015)	1	Survey		5	7	9	1
Corder & U-Mackey (2015)	2	Wikis		4	7	8	2
Daly et al. (2015)	1	Survey		5	7	/	1
Dang et al. (2019)	1	Survey		4	7	8	1
Dervin (2017)	2	Narratives		5	7	/	2
Deveci et al. (2022)	3	Survey & Reflective Writing Task		4	7	8	1&2
Erez et al. (2013)	1	Survey		4	7	9	1
Fakhreldin et al. (2021)	3	Survey & Focus Group		4	7	8	1&2
Iskhakova et al. (2022)	1	Survey		4	7	8	1
Jackson (2015)	3	Survey & Interviews		4	7	9	1&2
Krajewski (2011)	1	Survey		5	7	/	1
Kurpis & Hunter (2016)	3	Survey & Reflection Papers		5	7	8	1&2
Li & Longpradit (2022)	1	Survey		4	7	8	1
Luka et al. (2013)	1	Survey		5	7	9	1
Machado et al. (2016)	3	Survey & Critical Incidents		4	6&7	9	1&3
MacNab (2012)	1	Survey		4	7	8	1
MacNab & Worthley (2012)	1	Survey		5	7	8	1
MacNab et al. (2012)	1	Survey		5	7	8	1
Matsunaga et al. (2003)	2	Journal		4	7	/	2
McClinton & Schaub (2017)	1	Survey		4	7	8	1
Ramji et al. (2021)	2	Interview		5	7	/	2
Riner (2013)	2	Journal		4	7	9	2
Roller (2015)	3	Survey, Journaling, Personal Reflection, and Exercises		4	7	9	1&2
Wang et al. (2021)	1	Survey		4	7	8	1
Young et al. (2017)	1	Survey		4	7	8	1
Zhou & Pilcher (2018)	2	Reflective Essays		4	7	9	2