Research

Internationalising higher education curricula for sustainable development: considerations for indigeneity and (inter)culturality

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Abstract

Higher Education (HE) can play a fundamental role in the achievement of sustainable development, and particularly the Sustainable Development Goals (SDGs) as captured in the Incheon declaration. However, what approach HE should take in this mission is a contested space. In this paper, we interrogate the idea of indigeneity. The pursuit to ascertain how an indigenised approach to internationalisation can support or enhance the contribution of HE curricula towards sustainable development is driven by the understanding that for sustainable development to be achieved at all, the process of knowledge creation must strive to make integral those epistemologies that exist beyond the "West"; an understanding that aligns, in particular, with Target 7 of the United Nations (UN) SDG 4 and seeks to empower victims of epistemic violence. In doing so, we employed a bibliographic research which captured a dual approach consisting of a bibliometric analysis of literature and a review of case studies. The findings from both methods suggest that internationalisation appears in different disciplinary contexts, but these are not always aligned with indigenisation. We maintain that the construct of (inter)culturality can address aspects within the framework of indigeneity to boost the internationalisation of HE curricula and outcomes for sustainable development. Central to this are four factors, namely: the need for effective human engagement with (inter)cultural competence, medium/place of curricula interaction, the initiative form and the reach of the development.

Keywords Higher education · Sustainable development · Internationalisation · Indigeniety · Curricula · (Inter)culturality

1 Introduction

Acknowledging that sustainable development is a global endeavour and a necessity in light of socio-environmental crises, internationalisation becomes a pertinent process. Regarding this process in the context of higher education (HE) (deemed an important tool in the pursuit of sustainable development made apparent in the Incheon declaration), global knowledge creation must involve, and make integral, those epistemologies that exist beyond the "West". Action upon knowledge creation that is inclusive of non-Western knowledges such as those belonging to Indigenous cultures can be understood as indigenisation. It is this epistemic insight that the authors deem critical to sustainable development via HE; one that aligns with the Sustainable Development Goal (SDG) 4 and Target 7, in particular, the idea that Quality Education should include the sustainable transmission of intangible cultural heritage.

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This argument, and subsequent research, is informed by three key terms: internationalisation; indigenisation; and sustainable development. Following de Wit's [1] definition, internationalisation can be conceived as an 'intentional process of integrating an international, (inter)cultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society'. This is a process that is inclusive of practice and policy implementation within educational institutions [2], and, therefore, that which concerns the curricula—a focus within this paper. Indigenisation may be understood as the process by which those characteristics particular to indigeneity, and especially Indigenous knowledges (IKs), are made culturally and epistemologically integral to a system of knowledge creation, such as HE. To clarify, 'IKs are cultural, traditional and local knowledges that are unique to a specific society or culture and encompass skills and technology derived from local systems of production and consumption' [3]:1669. Central to our conceptualisation is sustainable development (SD), on the other hand, can be described as those aspects of cultural progress that are proactively sympathetic to the holistic wellbeing of future generations without impeding that of current generations. The elements of wellbeing include 'environmental protection, social cohesion, and economic performance' [3]: 1668. Critically, understanding SD as a process that attends to both the non-human environment and human society makes cognisant the relational aims of the United Nations (UN) in its SDGs and many Indigenous practices [3]. This relationship brings to light the feasibility of internationalisation using an indigenised approach, as well as the opportunity to evidence SD via a rethink of the curricula [4] which is concordant with our research question: How can HE curricula be internationalised via the process of indigenisation or (inter)culturality for sustainable development? In order to address this research question, it is important to start by examining the link between HE, Internationalisation, and Sustainable Development.

1.1 The linkage between higher education, internationalisation and sustainable development

Fundamentally, HE is a, if not the, medium for the internationalisation processes (sustainable or otherwise) that take place worldwide [1, 5, 6]. Sustainable development, vastly defined, indicates that for development to be truly sustainable, there needs to be an international, coordinated program of action. Understanding that sustainable development is a global endeavour, internationalisation—driven by HE is paramount, if inevitable. Given the aim of this study, that is, to ascertain how an indigenised or (inter)cultural approach to curricula internationalisation can support SD, we argue that internationalisation's inevitability may be credited to, and measured against an increasingly globalised world [7–9]. Situating HE in such a globalised context, it is important to recognise that 'internationalisation can be understood as complementary or compensatory to globalizing tendencies, given that it allows for resistance to the latter's denationalising and homogenising effects' [7]: 124. *Resistance*, understood here, denotes the role of an internationalising HE as defiant towards the increasingly globalised—and specifically economically globalised world [8, 9]; one that is deemed environmentally, socially, and economically unsustainable. Internationalising HE is not exempt from contributing to unsustainable practices, however. Indeed, the 'growth of transnational production characteristic of economic globalisation has precipitated intensification of the linkages between the purposes of economic globalisation ('the market') and higher education' [9]. HE and unsustainable globalisation become progressively entwined. Crucially, this is to the detriment of the internationalisation process [9] as market imperatives and educational goals blur. As Haigh [8]: 428 notes, in HE Institutions, 'education for planetary citizenship provides the dream for internationalisation; economic globalisation dictates practice'. So why utilise internationalisation at all? Following Gacel-Ávila's [7] understanding of internationalisation as heuristic above, as well as definitions of internationalisation that illustrate it as a medium for positive change [1, 6], the authors contend that internationalisation in HE is an essential geo-political activity that could incite global sustainable development.

Different domains of internationalisation in HE abound, such as internationalisation abroad that touch on educational activities in foreign countries with examples being exchange or study abroad programmes and internationalisation at home that touch on curricular content and delivery [1]. Drawing from Albach and Knight [2], varying motivations underpin internationalisation in different contexts, and these are not limited to earning money or securing economic competitiveness but also include the need to improve the quality, prestige, and cultural composition of the student body. Apart from the presumed benefits of internationalisation, curricula internationalisation has been reflected in forms of domination, challenging established traditions in HE and promoting brain-drain in poorer countries which have converged their HE structures with those in the centres of global wealth, where student and staff populations are drawn [1, 10]. It can be maintained that the curriculum has been used as a straight jacket and tool of repression in many socio-political contexts. For instance, Mbah et al. [3] maintain that scientific knowledge systems have been assigned a privileged position in several academic contexts, maintaining epistemic hegemonic over other ways of knowing. This

is further buttress by Mbah and Johnson [4] who assert that within the broader context of sustainable development, "expert knowledge" is often preferred to solve wicked social problems with radical exclusion of other epistemologies deemed inferior. This is consistent with the banking concept of education [11], which is dehumanising and sometimes involve curricula design processes that are implemented without the support of the academic community [12] and is part of a spectrum of pitting universities against each other.

A focal aspect of internationalisation in this paper concerns internationalisation "at home": 'the process of incorporating international, (inter)cultural and global dimensions into the context of the curriculum as well as the learning outcomes, assessment tasks, teaching methods and support systems of a program of study' [13]: 9. Honing in on the subject of the curriculum in HE, there are two notable approaches that could be channelled to pursue sustainable development. They are internationalisation-at-home (described above) and decolonisation. Padayachee et al. [14]: 291 make clear the necessity of decolonising the curriculum in describing the 'predominantly colonial architecture of university campuses and the Eurocentric academic model that still exists'. This notion recognises the inherently western-colonial characteristics of the hegemonic educational institution which is a vital understanding to be able to explore if education is to be developed sustainably in a globalised world. As Padayachee et al. [14]: 288 elaborate, 'both curriculum decolonisation and education for sustainable development are equally necessary for institutional and broader societal reform and well-being'. Despite the decolonisation approach to the curricula having the capacity for historically necessary institutional change, its geo-political reach may not be sufficient. Internationalisation, it may be argued, has a greater geo-political reach in terms of amassing actors for the purpose of sustainable development while decolonisation for sustainable development may only reach those nation-states with a colonial history. In this way, decolonisation may be an appropriate local-effectual method, but internationalisation, with its ability to traverse both the global and local [15], may be more suitable to HE in a global context. Importantly, and for the purpose of this paper specifically, the highlight of the internationalisation of HE over the decolonisation of HE supports the indigenisation of curricula development; a form of epistemic action that we argue is to the benefit of sustainable development. As is described in Padayachee et al. [14], there is a wealth of scholarly positions that suggest that the process of decolonisation, and the subsequent 're-centering' of knowledge held by colonised cultures, only serves to replace one form of knowledge or worldview with another. Though this empowers colonised, Indigenous knowledges to an extent, it is not as well aligned with the idea of knowledge integration—that process of coordinating *multiple* knowledges for the good of global education—as internationalisation [1].

In this light, however, it is salient to not assume that internationalisation is an inherently indigenising process and instead ask: why must internationalisation claim space for Indigenous knowledges? Indigenous knowledges cannot be expected to assume a significantly recognised, and subsequently legitimised, epistemological position within the process of internationalisation simply because of its history of epistemic subordination to Anglo-American/Eurocentric educational infrastructure. This is suggested in lieu of the idea that 'Indigenous worldviews are vital responses to dominant notions of internationalisation and historical limitations of education for Indigenous peoples' [16]: 2; substantiating IKs' role in the process of internationalisation, as well as its epistemic, participatory dues. In their paper, Huaman et al. [16] continue to temporally locate the site of epistemic subordination of Indigenous knowledges, namely to the moment of a globalising neoliberalism in the 1980s and 1990s. They suggest that this historic instance was one in which the global North, and *not* the global South, benefitted from the neoliberal paradigm. This is because of the 'uneven flows of students and capital as a result of the global political economy' ([16]: 11) which impact upon Indigenous communities disproportionately and inevitably (*ibid*). Reflecting on the idea of *Indigenous worldviews* responding to internationalisation, it can be understood that, as a dialogic interaction between the Indigenous and international education, IKs provide both epistemological *and* ontological assets to the process of sustainable development. Located in cultural characteristics of indigeneity, these assets concern the approaches to, and maintenance of, both the local-ecological (physical) context and generational knowledge creation of a community [17]; characteristics that align with sustainability broadly and the sustainable development of international education specifically. Thus, it is both for the benefit of IKs and sustainable development that internationalisation of the curricula must facilitate the space for IKs to operate.

While HE institutions such as universities have been observed to possess the capacity to contribute to sustainable development, acting as agents of change toward the realisation of the SDGs [3] can be underscored. This is particularly highlighted by the United Nations Educational, Scientific and Cultural Organization (UNESCO)'s flagship Education for Sustainable Development (ESD) programme [5]. However, although HE contribution to SD has taken varying forms, including the incorporation of sustainability into the curricula [4], there has not been till date an exploration of the methodologies and merits of operationalising the internationalisation of the curricula from an indigenised or (inter)cultural standpoint to SD, a critical gap in the extant literature this paper seeks to fill. This is particularly relevant as internationalisation can lead to relevant transformations as already posited [1, 6].

Discover

1.2 Theoretical underpinning: epistemic (in)justice

The theoretical underpinning of this paper hinges on epistemic (in)justice. Where epistemically unjust circumstances may arise from acts of epistemic violence, epistemic justice can be fostered in methods that seek to include, as opposed to exclude multiple epistemologies. The methodological tools that are deemed appropriate for alleviating such epistemic harm for the purpose of this research are identified as epistemic inclusivity and polycentrism.

As a term credited to Spivak [18], epistemic violence describes a series of complex functions within the sphere of epistemology and is multiform in the ways it is able to harm those creators of knowledge who are marginalised. In the context of curricula development for internationalised HE, epistemic violence opposes the qualities of sustainable development such as epistemic inclusivity. To incite epistemic violence, then, is to actively exclude or alienate certain members of the global community in knowledge-creation. Utilising the idea of communication as a metaphorical heuristic for epistemic interaction in a global context, Dotson [19]: 238 notes, 'to communicate, *we all need an audience willing and capable of hearing us*. The extent to which entire populations of people can be denied this kind of linguistic reciprocation as a matter of course institutes epistemic violence'. The author is clear in her assertion that epistemic exclusion is bound to systemic miscommunication. Developing this claim, De Schryver [20] unpicks the nature of subjectivity in light of the inability of *audiences* to *hear* those that need to be heard. As the author details, 'the expectation that speech acts of marginalised individuals or communities will cohere with the conceptual schema of subjectivity as it has been articulated in the Western tradition is a mechanism of silencing, for it does not tolerate, cannot *hear*, aspects of what is said that would upend this rigid classificatory system' [20]: 113. Such an insight is critical if we are to understand how and why epistemic injustice presents itself in HE Institutions.

Epistemic inclusivity highlights, especially, the mutually beneficial process of epistemological interconnectivity between cultures. In line with the three primary aims of sustainable development understood by Lukman and Glavič [21], epistemic inclusivity can promote *environmental protection, social cohesion, and economic performance* by addressing these foci within international curricula frameworks in HE [22]. As Ndofirepi and Gwaravanda [23]: 90 assert, 'there is no inclusive education without epistemic justice'—inclusivity for sustainable development in HE is a necessity. In this light, it is of value to consider the idea of ontological inclusivity in tandem with inclusive infrastructure. As Gupta et al. [22]: 547 reference in regard to inclusive development, at the 'regional and global level, [epistemic inclusivity] would call for participation in universal regional and global governance processes (such as the UN) as opposed to exclusive ad hoc processes (such as the G20 which is an intergovernmental forum comprising of sovereign countries, the European Union, and the African Union). This is not to suggest that participating as part of the UN, for example, is sufficient for attaining inclusivity in itself—there is evidence for pervasive exclusivity [24], but it should be noted that being part of such international governance can be a necessary step for achieving sustainable development via HE in a global context.

The idea that many centres of governance can work in tandem, that is, as nodes within a greater operation of 'metagovernance' [25]—defines the strength of polycentricity within a global context, and its aspirational quality to be a non-hegemonic international governing system. Continuing to define the idea of *metagovernance*; understood here as a key principle of polycentric governing strategies—Koinova et al. [25] disclose that metagovernance norms 'specify an *aspirational vision* for the governance of a policy area and generate shared expectations for actor behaviour'. The authors expand on the utility of this governing strategy by highlighting the power of shared norms: 'When the various institutions in a polycentric complex draw upon the same norms, the organizationally decentered apparatus structurally converges on common principles. In this way, norms provide an interlinking thread for the whole' [25]: 2010. The property and ability of norms to *interlink* expands the theoretical utility of polycentrism to engage with epistemic inclusivity also. Comprehended as the ecology of knowledges [26], a polycentric approach to global knowledge creation is one that emphasises the interdependence of knowledges on a plain in which they are equally valid [27]. In the context of internationalising HE, polycentrism defines a robust, decentralised organisational strategy that is able to amass actors in a globalising world and facilitate epistemically just development at multiple scalar degrees (local, national, supranational).

2 Methodology

The methodological approach used for the purpose of this study was bibliographic research. This was a dual approach consisting of a bibliometric analysis of literature visualised in VOSViewer (a software tool for constructing and visualizing bibliometric networks) and a review of case studies. The authors engaged in bibliographic research using material sourced from the database SCOPUS. The initial search string used in the database sought to include literature addressing
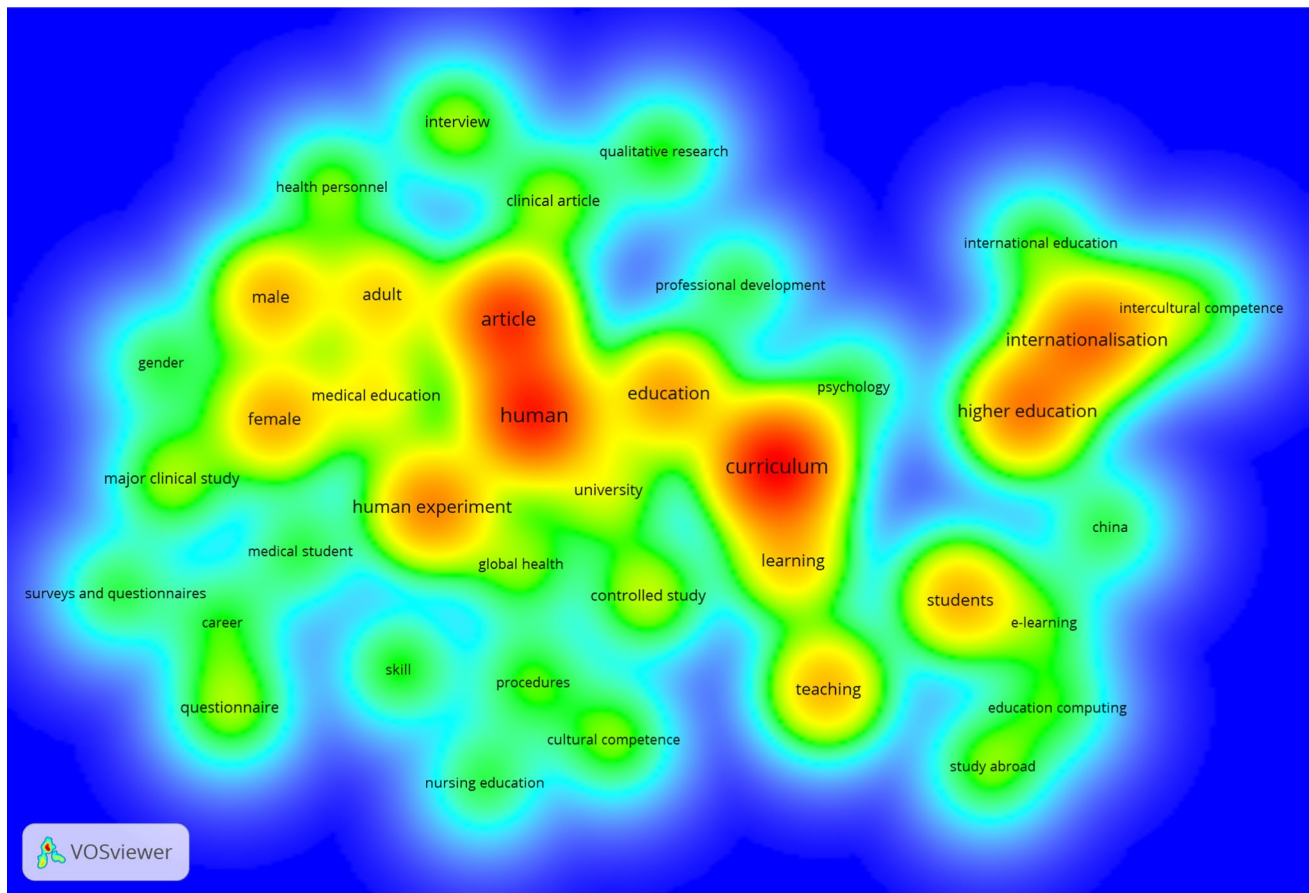
internalisation, Indigenous knowledge, cultural inclusivity, the curriculum and HE broadly. The input was thus: TITLE-ABS-KEY (((international* OR internationalization OR cross-border OR "cross border" OR internationalize) AND (indigen* OR "indigenous knowledge" OR "local knowledge" OR "traditional knowledge" OR "local ecological knowledge" OR culture OR cultural OR cultur* OR intercultural) AND (curriculum OR curricula) AND ("higher education" OR "tertiary education" OR university OR universities))). This search string produced 1780 documents. Further screening allowed the authors to reduce and make more relevant the available literature. Relevant criteria included that documents had to be from 2020–2022, a final article, a journal article and in the English language. This degree of exclusion produced a total of 203 documents to be used for bibliometric analysis. VOSViewer was the tool utilised for bibliometric analysis. It is software that allows datasets to be analysed against certain, customisable parameters, and subsequently visualised (see Figs. 1 and 2). The authors sought to capture the scope of topics addressed within the field relevant to internationalisation in HE for sustainable development—denoted by the initial search string above and so used VOSViewer to map the relationship between keywords that occurred greater than or equal to 6 times within the 203 documents. Inferences were then made by observing the map; a qualitative investigation where analytic themes can be drawn out for further discussion [28–31].

For the analysis of case studies, screening via manual exclusion was necessary to reduce the amount of documents from SCOPUS (n = 203) to an appropriate size. Literature was excluded on these bases after reading the abstracts: no clear reference to curricula or program content; an exclusively quantitative study; no reference to indigeneity or cultural inclusion; the data source was not primary; it was a duplicate. This stage resulted in a total of 54 documents from SCO-PUS. The documents were then scrutinised in detail, and in full, for information that was particularly relevant to the foci of this research and to exclude those pieces of literature that eluded elimination from the initial (above) screening. The information that would reduce the total number of documents further, and define specific pieces of literature as ripe for use as case studies, included the indigenous or cultural features captured in curricula-related activity and further information that may contribute to the construction of internationalised curricula for HE development. Consequently, the amount of literature selected for use as case study numbered seven. The details of the case studies and their relevant information were recorded in a table (see Table 1) with the intention that the collated information may be used as a resource for other workers in the field.

Fig. 1 Network visualisation

Fig. 2 Clustered visualisation

3 Findings and discussion

3.1 Visualisation

Foremost, the software, VOSViewer, has grouped certain keywords together based on the strength of their relationship to one another. This grouping is a form of computerised analysis, resulting in clusters (see Figs. 1 and 2). Clusters appear to merge/become less distinct around significant (heavily occurring) keywords. This is understood as thematic intersectionality/interrelation, and explained by the idea that research areas within this field converge around, and are thus concerned with, the "human", "education", the "curriculum", "higher education" and "internationalisation" for instance—visualised best within Fig. 2. Keyword significance is measured by the number of occurrences a keyword has across the body of literature analysed in VOSViewer—illustrated by the size of the node. The keywords such as "human experiment", "human", "education", "curriculum", "higher education", and "internationalisation" (see Fig. 2) are deemed especially significant for this reason, and will not appear surprising given the search criteria employed to determine the body of literature in the first instance. With this considered, it is perhaps worth noting that the task of encouraging epistemic inclusivity—understood as a global endeavour in line with the SDGs—is made tenable when the relationship between "education" and "internationalisation" is visually realised, and therefore supported, by a significant quantity of bibliographic data.

The green cluster illustrates the prevalence of research and experience in medicine within the field of study. Despite this theme not being an area that is worth the scrutiny of this research—for the study does not concern medical practice specifically—it does provide a useful insight into the predominant disciplinary sphere that internationalisation work concerns itself with. With this understood, the keyword "cultural competence", which is bound in occurrence with the green cluster, *is* particularly significant. Alongside "intercultural competence" (red cluster), the appearance of these

Table 1 Case studies

Author, Year	Intent	Design	Effect
Banat et al. (2020)	* To trigger systematic interactions and maximise opportunities for application of prior knowledge in new learning contexts and new knowledge in concurrent learning situations among diverse student populations—developing intercultural competence.	* Curriculum design interventions aimed at paired mainstream and second language specific first-year writing (FYW) classes: co-teaching of paired L2-specific and mainstream FYW sections; a multicultural reader; a research- and writing-based assignment sequence; embedded systematic reflective writing.	* Develops linguistic, rhetorical and writing proficiency. * Promotes internationalisation work in undergraduate settings. * Advances intercultural competence in the domains of cognition and behaviour by providing meaningful cross-cultural interaction via linked-course models; utilising resources made possible through linguistic, cultural and identity diversity; inviting students' cultural capital/lived curriculum into the classroom
Barbosa et al. (2020)	* To contribute to the dissemination and improvement of Internationalisation at Home (IaH).	* Two IaH initiatives: a 4-week online collaboration between students from a portuguese university and mexican university; a set of formal (syllabus based) and informal activities/assignments (e.g. intercultural coffee break, international dance show) conducted throughout one semester in a multicultural classroom in a portuguese university. * Students requested to communicate in English.	* Encourages student intent to develop intercultural competencies. * Content allows for home and international students to construct their own knowledge, deemed positive for both teachers and students. * Demonstrates that the classroom is a privileged space for international interaction and that interdependence of formal and informal curriculum is crucial for intercultural engagement. * Develops motivation, satisfaction and the development of professional competencies in students.
Cao (2022)	* To report on strategies that improve effectiveness of teaching vietnamese to foreign students—language being embedded with culture, therefore forming a dimension of intercultural competence.	* Teaching materials and curricula development: textbooks and course outlines to improve listening, speaking, reading and writing skills. * Teaching method development: experiencing cultural places, festivals, traditional cultural activities with native people.	* International students learn effectively when they are exposed to social and cultural events and experience the cultural values expressed by others. * Learners become more receptive to topics when using culturally integrated textbooks and materials.
Kudo et al. (2020)	* To understand what university-engineered and student-initiated activities facilitate the development of students' intercultural relationships, and if engagement differs with differing levels of internationalisation across universities. * To identify what the relationship between displayed forms of agency and stages of intercultural relationship development is, and if any significant patterns can be identified.	* Various internationalisation activities embedded within the formal (e.g. culturally mixed group work, class activities other than group work, informal group work related to classroom activities) and informal curriculum.	* It is ultimately students' agency that determines the development and quality of intercultural relationships. * Regardless of degree of institutional commitment to internationalisation, student-initiated activities were found to be more conducive to intercultural relationship development than university-engineered activities. * Meaningful intercultural interactions with the prospect of relationship development occur in environments (informal curriculum/non-curricula) that are created and owned by students; the provision of carefully designed environments aimed at nurturing students' cosmopolitan agency is effective.

Table 1 (continued)

Author, Year	Intent	Design	Effect
Liu, Shirley (2021)	* To enhance student experiences for a regular course that would not otherwise include an international education component.	* COIL course. * Technologies used to facilitate communication: Zoom, WhatsApp, Google Docs, Google Slides, Trello.	* Students improve intercultural competence skills through online interactions with international partners. * Virtual Reality (VR) understood to be an easy-to-use and effective learning tool which can help students improve their intercultural competence skills
Vicente et al. (2021)	* To explore whether JITOHealth, like other, similar courses using Collaborative Online International Learning (COIL), has a positive effect on the development of intercultural competencies	* One Health approach via JITOHealth—an international collaborative training initiative (COIL course): applies international collaborative learning principles and dimensions to learning processes. * The course standard curriculum combines synchronous and asynchronous activities which are developed in groups of internationally, inter-institutionally mixed students. * Course structure: (six interconnected modules) one introductory module, four delivering core concepts in One Health, one module on career perspectives.	* South–South and North–South cooperation, facilitated by JITOHealth, provides an insight into how such cooperation can improve health systems' performance by empowering professionals from developed and developing countries. * International collaboration of this sort contributes to the curriculum's internationalisation through exchange opportunities and increased accessibility for low-income students
Wimpenny et al. (2022)	* To promote adoption of open educational resources and practices (OER, OEP) in the south-mediterranean (S-M) to address concerns raised about teaching and curriculum quality, online- and participative-teaching techniques and development of institutional resources for knowledge production. * To ensure Indigenous knowledges were brought together as reciprocal exchanges of cultural wealth and to avoid dominance of western-centric practices. * To embrace integral and inclusive actions that would be meaningful to local beneficiaries (the middle east and Maghreb particularly, but other international settings also).	* OpenMed curricula reform dimensions: developing content for teaching and learning; building capability; examining cultural aspects. * OpenMed course contains a module on the adaptation of OER and Massive Open Online Courses (MOOCS) to the specificities of involved communities; developing the capabilities to adapt OER to local contexts. * The project maintained focus on both top-down (national and strategic) and bottom-up (individualised) initiatives designed to deliver a multilevel, culturally responsive, pedagogical, and organic intervention.	* The kind of bottom-up and top-down practices initiated by the OpenMed project can result in actual systemic change in education practices in the mediterranean region for instance. * Initiatives of this sort can lead to the development of strategic recommendations from the authors, for the adoption of OER and OEP based on the study's findings.

keywords demonstrate that there is an awareness, interest and focus on (inter)cultural competence within the field of internationalisation.

The blue cluster is composed of keywords that can be together understood as methods relating to people. The keyword of particular significance, at the centre of the cluster, is "human". Reflecting on the nature of epistemic violence and its ability to harm those creators of knowledge who are marginalised [18, 19], "human" brings to the fore the ultimate epistemological subject for which HE internationalisation work has effect: people. The methodological dimension of this cluster is shown in keywords such as "qualitative research" and "global health". A just methodological framework is vital for internationalisation work that is epistemically inclusive [23, 27] and which pertains to HE contribution to sustainable development. The keywords ("qualitative research"; "global health") point to the form that such a methodological framework might take; one that is sympathetic to the unquantifiable needs of the human subject and comprehensive of the global reach required of epistemically inclusive internationalisation projects. The latter aspect of form being especially crucial to the development of a polycentric approach to knowledge creation [26, 27] and international governing strategies [25].

Within the yellow cluster, the keywords "education", "human experiment", "skill", "procedures" and "nursing education" build an image that pertains to education relating to research. Akin to the blue cluster, the insights that can be drawn in this thematic context revolve around inclusive epistemology within internationalisation activities. Specifically, epistemology, here, relates to the process of research and therefore how one communicates new knowledge, with whom, and to what end. Referring back to the idea that 'to communicate, *we all need an audience willing and capable of hearing us*' [19]: 238 and the notion that a greater, global schema of "hearing" is needed to refute the silencing of marginalised communities [20], this cluster makes apparent the potential impact in educating for better research within the field. Inside the visualisation itself, the "education" node is seen to be significantly dense with occurrences (see Fig. 2) which alludes to the probability that, topically, education within the field of internationalisation research is well addressed. Beyond the visualisation, and with a consideration towards this research, there is work to be done to develop the capability to "hear" those marginalised epistemologies within education—a fundamental that aligns with the overarching research aim of enhancing the contribution of HE curricula towards sustainable development.

International teaching, learning and education are some of the themes displayed in the red cluster. These themes are likely the critical facet of the bibliographic data set as they encompass this study's particular theoretical underpinnings concerning international epistemology: epistemic violence and epistemic justice. As previously mentioned, "intercultural competence" is especially significant within this cluster and the visualisation as a whole. It demonstrates an attention to competencies that concern many cultures, within the literature, and, with regard to epistemic justice relating to education, an element of knowing that is vital to interconnecting cultures as part of internationalisation work. We are reminded, then, that 'there is no inclusive education without epistemic justice' [23]: 90. Education that is not epistemically just may therefore be argued to incite some degree of epistemic violence; a term that describes those ways of harming creators of knowledge who are marginalised [18]. It may be notable that the terms relating to this study's theoretical underpinning (epistemic violence; epistemic justice) are not apparent within the data visualisation, and are therefore not represented with any level of significance. A critical outlook on this understanding would suggest, perhaps, that the relationship between epistemic violence, epistemic justice and internationalisation for sustainable development is not deemed an appropriate focus within the literature, which further highlights a gap within the field of study that this research aims to address.

3.2 Case studies

The case studies are an empirical data set representing examples of best practice in the field of internationalisation in HE (see Table 1). The initiatives described within the case studies illustrate the effects, and effectiveness, of incorporating (inter)culturally developmental practices into varying curricula domains. It is in this way that such practices can be discussed to address the overarching aim of this research: *to ascertain how an indigenised approach to internationalisation can support or enhance the contribution of HE curricula towards sustainable development*.

Although the initiatives captured in the outputs (see Table 1) did not explicitly highlight the incorporation of indigeneity into epistemic practices, the references to (inter)culturality is relevant. However, this indicated that there is no quick-fix to the problems we aim to address in this paper but, instead, an opportunity to interrogate why this is so and propose those initiatives that may encourage and support indigenised approaches to internationalisation in the future via (inter)culturality. With this considered, the discussion is made in light of the fundamental aspects

of the case study initiatives; namely, the medium/place of interaction, the initiative form, the development and curricula reach, discussed below.

Interactions that occur within an internationalised setting encompass both the meeting of subjects with other subjects and the meeting of subjects with curricula content. These interactions vary between the case studies but are able to be categorised as either an online interaction or an offline interaction. The medium (virtual or otherwise) then dictates the place in which the interactions may occur which is a vital consideration to make when internationalisation efforts can be deployed either "at home" or abroad. Most (n = 4) of the case study initiatives, be it in-full or in-part, were mediated online. The work of Barbosa et al. [32], Liu and Shirley [33], Vicente et al. [34] and Wimpenny et al. [35] detail means of international collaboration using a virtual interface (see Table 1). This is shown to be effective by facilitating international interactions between subjects in a classroom setting without affording the expense of physical presence and by providing content digitally, synchronously or asynchronously. In this sense, online initiatives are generally more accessible than face-to-face initiatives, granted the cooperating institutions are resourced to facilitate such interactions. Conversely, a number of the case studies (n = 4) embedded offline initiatives into strands of the curriculum to encourage (inter)cultural interactions. The nature of this interactional place required subject-subject and subject-content interaction to occur within the institution only, diminishing accessibility compared to initiatives offline. With this understood, however, studies from Banat et al. [36], Barbosa et al. [32], Cao [37] and Kudo et al. [38] exemplify a multitude of benefits from embedding such practices into their HE internationalisation efforts (see Table 1). The (inter)cultural intimacy associated with face-to-face internationalisation practices is unattainable to the same extent with online practices. In this way, there are significant benefits to providing tangible resources and experiences "at home"; primarily, to encourage an (inter)cultural relationality between subjects that is pertinent to developing competency that is personalised and relevant (to the subjects). It is with this understanding that we are able to draw upon the visualisation keyword "human" to reinforce the proposition, uncovered by the work in the case studies, that advancing internationalisation attitudes within and towards human subjects is paramount to sustainable development promoted by HE institutions.

The initiative form may be understood as its delivery in relation to a body of subjects. This relationship tends to form from the top-down, bottom-up or as a mixture of the two. Top-down is recognised here as those activities that are built within a formal curricula template and are therefore institutionally managed (via assessment, learning outcomes etc.). Alternatively, bottom-up is used to describe those activities that are built outside of the formal curriculum (sometimes called the informal curriculum) and are exempt from being institutionally managed with the result that organisation can involve, and be led by, students-as-agents. Only Barbosa et al. [32], Kudo et al. [38] and Wimpenny et al. [35] utilised a bottom-up initiative form and, interestingly, this was practised in tandem with a top-down form for all three. This methodological insight alone may support the idea that the interdependence of both top-down and bottom-up initiatives is crucial for intercultural engagement [32]. Extensively, when it is proposed that a polycentric approach to governance is critical to epistemically just development at multiple scalar degrees [26, 27], initiatives that promote internationalisation from the top and bottom appear to fit appropriately into an educational model that must represent multiple pathways of knowledge creation to be sustainable at all [3]. In contrast, however, Kudo et al. [38] conclude that students' agency—exercised within bottom-up initiatives is the only vehicle capable of fostering intercultural relationship development, regardless of university-engineered internationalisation activities. This claim perhaps sways the form of plausible internationalisation methods towards bottom-up initiatives; an especially pertinent insight in the context of this research as it is primarily concerned with sustainable development via HE curricula. With this considered, the case studies [38] (exempt) also demonstrate notably positive effects from incorporating top-down, curricula-based initiatives into their internationalisation efforts. This form of practice acquires the benefit of being institutionally resourced and, therefore, manifests most effectively as curricula materials, formal spaces for interactions to take place and institutional tools that allow for online, collaborative experiences (see Table 1). The immediate benefits to these modes of top-down initiatives appear to be that intercultural competency development can be formally encouraged and embedded into the HE experience and that this process can be enacted at varying scales in the case of the Collaborative Online International Learning (COIL) courses (see Table 1).

Intercultural competency development within the case study initiatives occurs at varying geospatial zones: regional or local. This may be understood as the development reach, though it is not necessarily the case that greater reach in terms of distance equates to greater effect overall—even in the context of internationalisation efforts. With this understood, the case studies demonstrate the suitability of particular initiative models to incur positive effect within the geospatial context that they are situated in; some activities may work better at a local level than a regional level and vice versa. Significantly, it may be argued that only the work of Vicente et al. [34] and Wimpenny et al. [35] develop intercultural competency at the regional level. Referring to either South-South collaboration [34] or activity in and around the Mediterranean

[35], both sets of authors outline the use of unifying frameworks (One Health, OpenMed, see Table 1) to guide and target sustainable educational development beyond a locality. This may suggest that frameworks such as these are fundamental to initiatives aiming to have regional reach. This is pertinent to the idea of polycentrism, discussed above, which can be utilised to inform sustainable development within areas larger than the immediate locality. As a form of 'metagovernance' [25] and epistemic cohesion [26, 27], polycentrism as a development tool may be its most effective when situated within and alongside unifying frameworks such as One Health and OpenMed—a practical insight, perhaps, when the task of internationalising HE spans a region, specifically. Polycentrism may also play a productive role in those initiatives that occupy a local geospace. The case studies that actively made international connections through their initiatives (n = 3) (see Table 1) illustrate how institutions may act as nodes within a greater image of metagoverned internationalisation; through the international connections made under the project of internationalisation, a more cohesive intercultural movement may be more readily achieved at a global scale—a necessary condition for development that is sustainable for all. Overall, the authors that engaged with internationalisation activities in a local geospatial context numbered five, therefore constituting the majority. It may be understood, then, that local contexts are generally more amenable to internationalisation work through project-based initiatives than regional contexts. Reasons for this will vary, though it is necessary to consider that internationalisation work carried out by institutions tends to be maintained within the institutions themselves and the partner institutions that are also involved with those projects (internationally).

3.3 Encapsulation

The clusters of VOSViewer's bibliographic visualisation make apparent the emergent themes within the internationalisation literature. Holistically, these themes aid in developing a profile of what is addressed and what is not addressed within the field and, importantly, how this information relates to the primary aims of this research and its theoretical underpinning. The visualisation highlights the significance of keywords such as "human", "curriculum", "internationalisation" and "intercultural competence", for example, and therefore their interrelation and focus within the field. This insight is measured against what is not apparent within the visualisation—namely, reference to epistemic inclusivity and epistemic violence. The void in theory evidenced as significant helps to identify those areas that may need to be addressed by contiguous research and implanted, perhaps, into existing and effective internationalisation practices. The selected case studies demonstrate the most effective initiatives within internationalisation practices globally, and in relation to the purpose of this research. An initiative's medium/place of interaction, form, and reach of development frame the parameters of its effect. Each initiative varied along these parameters to the extent that it defined their suitability for the context within which they operated. This insight is valuable as it details that internationalisation methods may vary and still have distinctively positive effects. Internationalisation efforts can therefore be considered as methodologically flexible and, reflecting on the understandings drawn from the visualisation, amenable to theoretical drivers such as epistemic inclusivity and epistemic violence—which the authors would argue as necessary in light of the pursuit of sustainable development via HE curricula.

4 Conclusion

The pursuit to ascertain how an indigenised approach to internationalisation can support or enhance the contribution of HE curricula towards sustainable development is driven by the understanding that for sustainable development to be achieved at all, the process of knowledge creation must strive to make integral those epistemologies that exist beyond the "West"; an understanding that aligns, in particular, with SDG 4 and its target 7 and seeks to empower those victims of epistemic violence. The primary, interrelated facets to scrutinise within this pursuit are HE, internationalisation and sustainable development. The gravity of sustainable development as a global endeavour demands an international, coordinated program of action. Internationalisation can be utilised to integrate (inter)cultural practices into educational systems and, consequently, act as a vehicle for positive change which can be contextualised within sustainable development. Understanding that HE is, arguably, a medium for internationalisation efforts worldwide, the relationship between these three facets becomes apparent and, perhaps necessarily inevitable. But why scrutinise this interrelationship at all? The theoretical basis on which this paper's research aim is supported feeds a critical outlook on an already-existing epistemic structure, such as HE. We can acknowledge that epistemic violence is systemic and harmful, and thus, propose the use of a positive theoretical platform in this research to engage with sustainable development. This platform encapsulates epistemic inclusivity and polycentrism, and compels the findings discussed within this paper. Using the

software VOSViewer, a bibliometric analysis of literature was able to be visualised and, subsequently, a qualitative investigation into the emergent themes was able to be discussed. Using the same body of literature, but employing a greater degree of scrutiny, seven case studies were able to be selected and explored for their examples of internationalisation practice; information that would be collated into a resource. The findings from both methods, in relation to this paper's overarching research aim, suggest that: (1) Curricula internationalisation for sustainable development require effective human engagement with (inter)cultural competence; (2) While internationalisation can occur in physical settings, virtual settings are more accessible and effective by facilitating international inputs and interactions between subjects in a classroom setting without affording the expense of physical presence and by providing content digitally, synchronously or asynchronously; (3) Fostering (inter)culturality in curricula internationalisation for sustainable development may take a top-down or bottom-up approach, with each evidencing different benefits. For instance, incorporating top-down initiatives can benefit from institutional resources and, therefore, manifests most effectively as curricula materials, formal spaces for interactions and institutional tools are made available for in-depth experiences; (4) Given that the development needs of different regions of the world differ, curricula internationalisation underpinned by (inter)culturality can be contextualised to address the unique needs of the region via a relevant unifying framework.

The originally of this paper lies in addressing a gap in the extant literature on the merits and degree to which the internationalisation of the curricula in HE for SD can be indigenised. As depicted by the findings, there is work being done within the field that is both significant and impactful, that can fit into the development of (inter)cultural competence and curricula internationalisation for sustainable development at a local, regional and global scale. While curricula internationalisation can appear in different disciplinary contexts not aligned with indigenisation, (inter)culturality can address aspects within the framework of indigeneity as highlighted. Further research is needed to consider how the concept of indigeneity may drive HE internationalisation practices beyond the curricula and what the resultant outcomes for sustainable development are.

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Declarations

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