

Transnational Quality Criteria for 'Global Studies' Curricula

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This paper deals with quality assessment for interdisciplinary university curricula. It is based on a review of literature on concepts of quality for curricula, key concepts for multi-disciplinarity, interdisciplinarity and transdisciplinarity; approaches for their monitoring; and necessary ingredients for multiparadigmatic inputs, processes and outputs. The emphasis is placed on dialogic interdisciplinary understanding and interparadigmatic integration of multiple disciplines and perspectives, when managing education for the purpose of responsibly hedging and managing globalization and socio-economic global change in responsible partnership. Recommendations focus on the implementation of interparadigmatic mutual understanding and include setting up a regular, peer-oriented discourse among all stakeholders and founders of the curriculum and the inclusion of expertise into the curricula commission. All such concrete measures shall underpin the key capability of interparadigmatic studies, namely to see complex phenomena as perceived by other stakeholders, friend or foe – as needed by all our countries any time.

Keywords: *Global Studies, interdisciplinary, interparadigmatic, curriculum assessment, intercultural, globalization, global change, Graz University developmental journals, bibliometric analysis, impact factor, ISI, Scopus, Google Scholar, Publish or Perish, curriculum, Graz University, intercultural.*

Introduction: Development in Responsibility

The need for global cooperation in mutual responsibility has long been accepted and has furthermore been underlined by the complex effects of globalization. As an effort to effectively manage the positive effects of globalization and to hedge its negative societal consequences, the need for transnational collaboration among universities enjoys growing importance. Since 2004, an educational program for managers, developers, policy makers and administrators has been implemented at Graz University in Austria attracting annually some hundred new students (GS 2019). Similar initiatives creating developmental curricula were successful earlier in Vienna (IE 2019) and later in Salzburg (PLUS 2019).

For practical implementation of such ethically and globalization-oriented studies, the distribution of curricular courses at any given university might have to

1. demonstrate appropriate respect and esteem in relation to other paradigms;
2. allow students a high level of choice according to their preferences and needs;

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3. take into account the availability of courses from other studies that can be included as electives.

One of the practical uses of this article might be to serve as a template and case study for similar transnational collaborative ventures in higher education management, to support interdisciplinary quality assessment and encourage the building of cutting-edge trans-disciplinary educational programs in order to manage globalization in a culture of partnership. Disciplines and communicational profiles are both manifested in the diversity of students' backgrounds.

For educational programs dealing with globalization, development and global studies, the author proposes as definition and motto: *development is growing jointly in responsibility*.

The present article has two targets:

1. To present a view on developmental science and 'Global Studies' (GS) using a bibliographic analysis of the main peer reviewed journals in this field by utilizing several literature databases: ISI by Thomson Reuters, Scopus by Elsevier and Publish or Perish (PoP) using Google Scholar data.

2. To show and explain the curriculum of 'Global Studies' (GS) Graz as a template for international comparison that could serve to enhance further transnational collaboration among universities and even lead to the foundation of so-called 'joint degrees.'

The world-wide integration of higher education, curricula and their quality criteria, as well as practice in international projects and experiences in academic education didactics, suggest the necessity for *transnational collaboration* among universities such as clarification of success criteria and subsequently possibly even joint degrees. Higher education management involves governance, self-responsibility and courageous steps in quality assessment that may also be inspired by cutting-edge cases of already implemented developmental curricula that target ethical questions of globalization.

This paper has a double aim:

1. To explain and analyze the *necessity for quality assessment (QA) of curricula*, especially in so-called transdisciplinary, interprofessional and multiparadigmatic cases such as developmental and global studies (GS); followed by assessment strategies proposed in literature.

2. To undertake to *measure practice of GS* against (i) GS curriculum, (ii) international practice, (iii) feedback received to date.

As a basis for writing and contextualizing, this paper dwells on both

(a) a *theoretical* literature analysis that scanned ~1,000 peer-reviewed articles (making use of the Scopus literature reference system) of which ~100 were taken into consideration and ~10 considered as very suitable (among which are Aboelela *et al.* 2007; Brennan and Shah 2000; Lantis 2004; Fischer *et al.* 2011; Lattuca *et al.* 2004; McFadden *et al.* 2011; Peterson and Wittstrom 2011; Ried 2011; Spelt *et al.* 2009; Wagner *et al.* 2011).¹

¹ Whereas the interesting literature review performed in the US by Spelt *et al.* (2009) used mostly literature bases provided by the more traditional US-based ISI Thomson retrieval system (SSCI, extended SCI, A&HCI; additionally ERIC), the present literature review used the literature base provided by more recently established Scopus.com (the European counterpart of ISI Thomson) that provides about twice as many journals, in-depth analytical tools as well as an extremely practical online option to search and directly retrieve full-texts of citing and cited literature.

(b) the concrete involvement and *practical* experience of the author, in co-founding and implementing the GS curriculum at Graz University and lecturing in practically all courses established specifically for GS, as well as in other interparadigmatic curricula.

1. Why QA for Curricula?

The importance of *quality assessment* (QA) during curricula development and subsequent regular quality improvement is widely debated and *confirmed* in literature for all modes of education (Bernhard 2011a, 2011b, 2012a, 2012b), on both national and supranational levels. On OECD level, various initiatives attempt to strengthen cross-country compatibility of education management and QA, for example, IHME (2019), AHELO (2019), IHERD (2019) – often promoted via large international conferences.

Reeves *et al.* (2012) and Vilgats and Heidmets (2011) provide an overview of key developments in the past three decades. In particular, medical and health care studies already have a long tradition in QA, for which Simmons and Wagner (2009) find that ‘although interprofessional education and continuing interprofessional education are becoming established activities (...), *assessment of learners* continues to be limited.’ The present paper, however, includes such initiatives of learner-centered assessment, for example, undertaken by Bader and Zotter (2012) and Bader and Köttsdorfer (2013).

The necessary *broad scope* of assessment for interprofessional education and scholarship is highlighted by Reeves (2009) who names seven key trends leading to higher quality: ‘*conceptual clarity, quality, safety, technology, assessment of learning, faculty development, and theory.*’ Evidently, QA is more than merely counting the impact points of lecturers or the political honors of administrators. Grossman *et al.* (2001) propose a *collaborative model of teacher community in the workplace* based on *mutual respect and professional criteria-orientation*: such is ultimately demanded here also, both as a general recommendation and for the case study of GS after literature and bibliometric analyses.

The mentioned extensive literature analysis of hundreds of peer-reviewed papers brought the review framework for interdisciplinary and transdisciplinary curricula taken from Biggs (1993, 2003), and cited in Spelt *et al.* 2009 that embraces *input, process and output* (from left to right) as suggested by practically all the in-depth papers analyzed. For quality learning at university, Biggs (2003) ‘analyzes the nature of good teaching and provides a framework for reflective practice.’ He proposes the ‘*constructive alignment*’ model whereby the curriculum, teaching method assessment procedures and general institutional environment should all be in alignment with the societally desired output to promote deep learning.

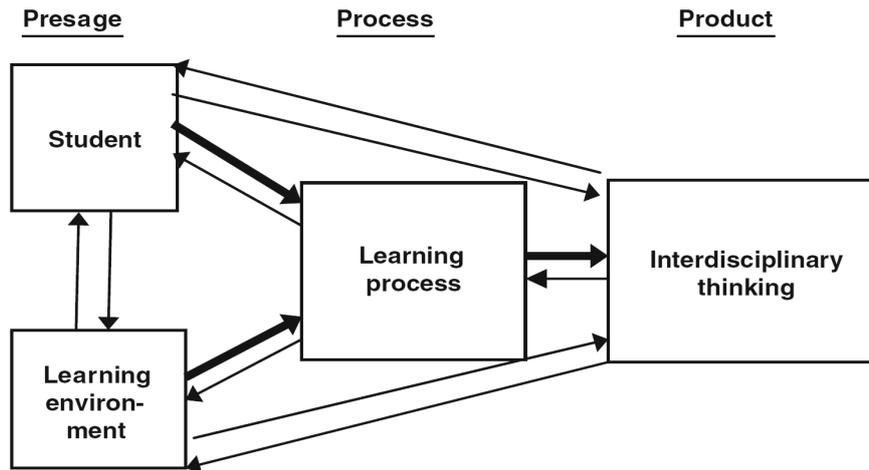


Fig. 1. Conceptual Review Framework for interdisciplinary curricula, also applicable to transdisciplinary and multiparadigmatic curricula.

Source: Spelt *et al.* (2009: 368), adapted from Biggs (2003), compatible with Brennan and Shah (2000: 335) and closely resembling the working model suggested by Wagner *et al.* (2011: 17)

Inspiringly, Fig 1 simultaneously combines the perspectives and perceptions from three different roles of co-citizens: studying, teaching/training, and working in practice (from left to right). Their collective views on higher education provide the full picture.

1.1 What is quality in curricula and in higher education?

1.1.1 Necessity and effect of QA in higher education. A study by Brennan and Shah (2000) on QA and institutional change based on experiences from 14 countries presents a conceptual model of institutional change in higher education implied by quality management. (...) The programme for Institutional Management in Higher Education (IMHE) of the Organization for Economic Co-operation and Development (OECD) has sponsored a project entitled ‘Quality Management, Quality Assessment and the Decision-Making Process’ that considers the impact of quality assessment in terms of

- rewards/*incentives*,
- *policies/structures*, and
- *cultures* of institutions.

Evidently, any successful quality management approach in higher education should not neglect to follow *all three* paths; especially the latter two institutional and corporate culture ones. A refreshingly sober and realistic outlook should provide a promising start,

Drawing on the work of the sociologist Max Weber, Finch (1997: 152–153) has drawn a distinction between ‘naked power’ and ‘legitimate authority’ with regard to decision-making in higher education. (...) What was necessary was the conversion of naked power into legitimate authority. (...) Legitimacy in higher education is commonly thought to be achieved through adherence to *values and standards* which are a part of the cultures of academic disciplines (Finch 1997), *i.e.* a reasonably clear *collective understanding* between academics in a given

discipline that a particular piece of work counts as good and something else as less good. (...) Thus, for Finch, the role of *peer review* is central to the achievement of legitimacy for quality assessment processes and the decisions reached on the basis of them (Brennan and Shah 2000: 347).

The author of the present paper is very keen to emphasize the importance of peer review and a spirit of partnership, whilst at the same time being oriented on previously jointly agreed and common criteria for academic quality as well as didactics and pedagogy. This aspect of power relation analysis (Fischer and Hödl 2007) will be addressed during bibliographic analysis (see later).

1.1.2 QA for global developmental studies: discourse as procedural strategy for quality. Curricula on global and developmental studies (Schuurman 1993; Bernstein 1973; Fischer 2009) necessitate especially high levels of both disciplinary and interdisciplinary academic quality (Ahamer 2013a; Ahamer *et al.* 2011). Given their complex fact base and epistemological landscape, such curricula require a wider range of quality criteria than do curricula of a purely disciplinary nature, given the inapplicability of any concept of ‘absolute truth’ in multi-stakeholder and multi-perspectivistic issues in the framework of global change. Hence, *global developmental studies constitute the cutting edge of academia* in this respect.

A very elucidating paper on *ethics* and foreign policy was written by an American educator who had students discuss contemporary issues of conflict resolution (*e.g.*, Kosovo, Iraq) while using *structured debate* with preparative essay writing (Lantis 2004). Gorton and Havercroft (2012) successfully use historical simulations and Socratic debates to teach political theories. Haller and Ressler (2006) studied the meanings and interrelationships of national and European identity as well as cultural identities in the face of globalization (Haller and Ressler 2006). Osborne (2005) argues that the use of debate in a core world history course can foster both authentic learning in the discipline and progress toward intellectual and ethical maturity. In fact, academic culture in general is a culture of *argumentation*, and democracies are societies in which *debate is central*. Yet such a criteria-based culture of argumentation and peer review might be initially alien to most students and even lecturers who have grown up in a culture of personal loyalties.

Thus, any QA has to take the dialogic element of debate and discourse into account. Web based discourse in GS is described by (Ahamer 2012a).

As a consequence, the concept of quality in higher education is shifted from ‘*suitable content*’ (*i.e.* truths that can be learned) towards ‘*suitable processes*’ and constructed consensus (Ahamer 2005, 2006) in multi-stakeholder issues such as global development. A didactic approach using dialogic, debate-oriented and collaborative learning and inquiry (Becher and Trowler 2001) shows more promise than in a purely disciplinary science.

Debate as an instrument (Doody and Condon 2012) and the power of in-class debates leads stakeholders to *change their roles* (Kennedy 2009). Omelicheva and Avdeyeva (2008) tested the effectiveness of traditional versus active learning methods of debate for teaching graduate students (Moody-Corbett 1996). Koklanaris *et al.* (2008) propose debate preparation and participation as an active, effective learning tool; Gokhale (1995) finds that collaborative learning enhances *critical thinking* – even in technological education. Crone (1997) used panel debates to increase student involvement in an introductory sociology class. Healey (2012), convinced by the power of debate, reflects on the potential of debates for engaging students in critical thinking about controversial geographical topics. Rocca (2010) provides an extended literature review on student participation in the college classroom.

1.1.3 Structural strategies for quality in interdisciplinary curricula. Interdisciplinary and intercultural education needs *structural and organizational transformation strategies* because traditionally discipline-oriented hierarchies are not always appropriate to cope with the issues of globalization. Braun and Schubert (2007) surveyed the growth of research on inter- and multidisciplinary within scientific and social science papers. Spelt *et al.* (2009), in an intriguing paper, systematically reviewed teaching and learning in interdisciplinary higher education.

Lattuca *et al.* (2012) identified ‘eight dimensions of interdisciplinary competence that emerged from [their] extensive literature review:

1. awareness of disciplinarity
2. appreciation of disciplinary perspectives
3. appreciation of non-disciplinary perspectives
4. recognition of disciplinary limitations
5. interdisciplinary evaluation
6. ability to find common ground
7. reflexivity, and
8. integrative skill.’

1.2 Qualities in interdisciplinarity

Even if it may not be necessary to consider interdisciplinarity as a target in itself, the fundamental argument is that *reality as such* is not limited to any of the disciplinary lenses institutionalized at universities and hence needs the *critical evaluation* of expert opinions (*i.e.* of such opinions that consider themselves to have sufficient expertise). Real-life problems are *ill-structured problems* without single clear answers (Lattuca *et al.* 2004: 33) but demand *multiple and balancing paradigms* for understanding. The more the learning paradigm advances from behaviorist to cognitive and constructivist (Ahamer 2010), the more *self-responsible learning strategies* become appropriate.

1.2.1 Definitions for varying degrees of interdisciplinarity. Motivated by the above introduction that clearly highlights the confusion of concepts, and given the strategic importance of interdisciplinarity that has long since gained credibility in science, we adopt suitable definitions, concepts and implementations of interdisciplinarity in literature and practice. *What is interdisciplinarity?* First is presented a clear definition of the three key concepts in *growing degree of integration* (Table 1).

Table 1. Definitions of key terms used in most literature: multi-, inter-, and trans-disciplinarity

<i>Multi-</i>	<i>disciplinary</i> approaches juxtapose disciplinary/professional perspectives, adding breadth and available knowledge, information, and methods. They speak as separate voices, in encyclopedic alignment, an ad hoc mix, or a <i>mélange</i> . Disciplinary elements <i>retain their original identity</i> . In short, the multidisciplinary research product is no more and no less than the simple sum of its parts.
<i>Inter-</i>	<i>disciplinary</i> approaches integrate separate disciplinary data, methods, tools, concepts, and theories in order to create a holistic view or <i>common understanding of a complex issue</i> , question, or problem. The critical indicators of interdisciplinarity in research include evidence that the integrative synthesis is different from, and greater than, the sum of its parts.

Table 1 continued

Trans-	disciplinary approaches are <i>comprehensive frameworks that transcend</i> the narrow scope of disciplinary worldviews through an overarching synthesis. More recently, the term has also connoted a new mode of knowledge production that draws on expertise from a wider range of organizations, and <i>collaborative</i> partnerships for (social, economic, environmental) sustainability that integrate research from different disciplines with the knowledge of stakeholders in society. Here too, the transdisciplinary product is greater than the sum of its parts, though the scope of the overall effort is more comprehensive and the parts may be more diverse.
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Sources: Wagner *et al.* (2011: 16) and Stokols *et al.* (2003), adapted

According to Klein (2008) and Wagner *et al.* (2011: 15), this ‘most widely used schema for defining interdisciplinary research (IDR) (*i.e.* the three definitions in Table 1: multidisciplinary, interdisciplinary, and transdisciplinary) derives from a typology presented at the first international conference on interdisciplinary research and teaching in 1970.’ These definitions encompass *a new way of knowing* that grows out of shifts in

- epistemics,
- institutional structure,
- and culture.

1.2.2 In which sectors interdisciplinarity emerges first: an evolutionist view.

When searching for consistent and pioneering analysis of interdisciplinarity, clinical and health sciences assume a leading role (Larson *et al.* 2011; Gebbie *et al.* 2008; Peterson *et al.* 2011; Ried 2011; McFadden *et al.* 2011; MK 2019). A reason for this observation might of course be a high inclination (or rather pressure) to be innovative in this cutting-edge sector (having the highest impact journals when measuring by sheer ISI impact factors). Also, the leading role of the economic sector ‘medical and other health services’ exhibits an ever-increasing GDP share in all world regions, as displayed by the author's Global Change Data Base GCDB (Ahamer 2001; UNSTAT 2003).

The GCDB analyzes graphically the global techno-socio-economic trends and (to a certain degree) supports the impression that different regions might be on a similar path during economic evolution. From this perspective, evolutionary leaders are the sectors most prone to interdisciplinarity, succeeding through high paradigmatic and epistemological interconnectedness (in Ancient Greek language: ἐπιστήμη = episteme = understanding).

Fig 2 shows such economic sectors as a function of GDP/capita. At left in Fig 2 such a swarm of countries apparently moving in similar direction indicates that all countries in the world are increasing their efforts to provide community-related, social, and personal services, including the subsectors of medical and educational services mentioned above. At right in Fig 2: framing this service sector within all sectors of the economy shows that these community, social, and personal services grow fastest (together with financial and similar sectors in yellow); this impression is corroborated further when displaying not the shares, but the growth rates of these shares in Fig 3. The author's underlying concept of ‘blossoming evolution’ is further explained in Ahamer (2020); countries are considered to move from left to right on the horizontal axes during economic evolution.

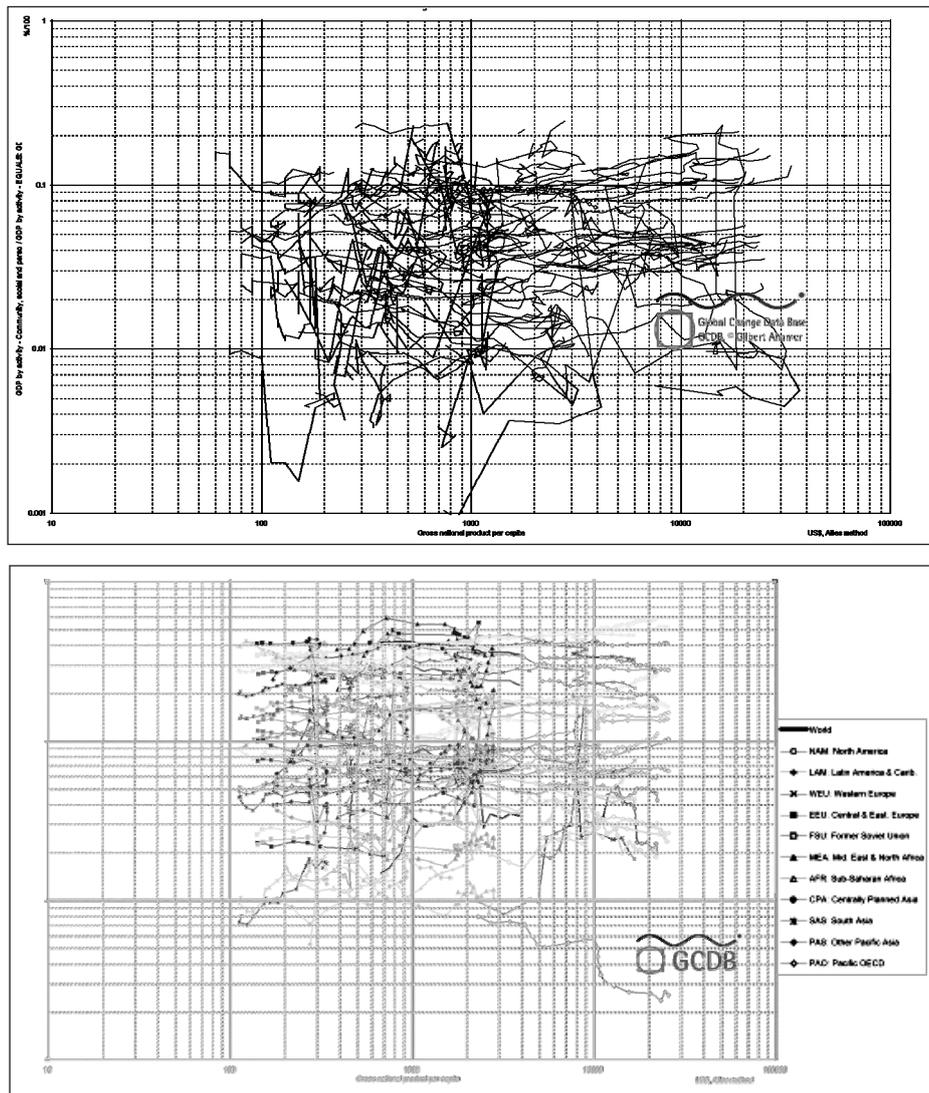


Fig. 2. Display of analogous GDP shares for 'community, social and personal services' as a function of the countries' GDP/capita (a proxy for economic development). At left: for all single ~200 countries, at right for eleven world regions in pink, contrasted with the shares for the eight other economic sectors (other colors). GDP/capita values range from 10\$/year at far left until 100,000\$/year at far right on the horizontal axis

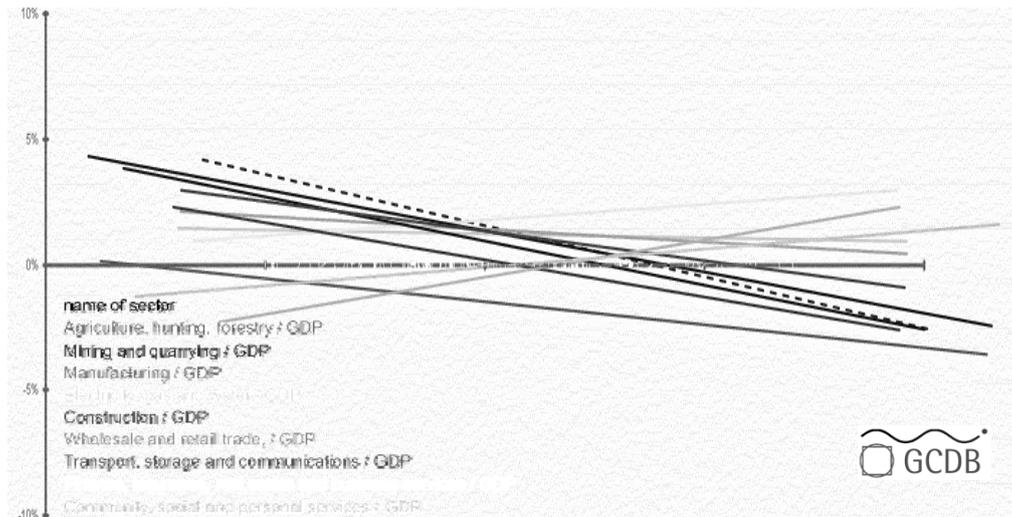


Fig. 3. Annual growth rates for share of 'community, social and personal services' as a function of GDP/capita (pink), change rates for the other sectors in other colors (see legend)

To sum up, the contribution of the *health sector* to overall economic output is continuously growing in all world countries and regions – as does that of the *educational sector*. As shown in Fig 3 at right, the growth rate of these sectors is highest in already advanced economies which can be interpreted as these activities having a *high potential* for further (not only economic but presumably also epistemological) strengthening of civilizational achievements and being likely to employ cutting-edge paradigms such as transdisciplinary paradigms.

1.2.3 Interdisciplinary, intercultural and interparadigmatic modes of science. The following paragraphs define three 'scientific modes' that add to the above, quite common, definitions. In addition to common-sense interdisciplinarity that uses different (let us call their number 'n') disciplinary lenses to look onto and to understand one specific real-world problem (at right in Fig 4, first line in Table 2), the present paper proposes the notion of 'interculturality' which shall mean here to take a standpoint of perception (i.e., not a lens) depending on one's own real-world position and involvement in the given real-world problem. An example would be to look on the Nagorno-Karabakh conflict in the Caucasus from an Armenian or Azerbaijani standpoint, just being re-heated in July 2020.

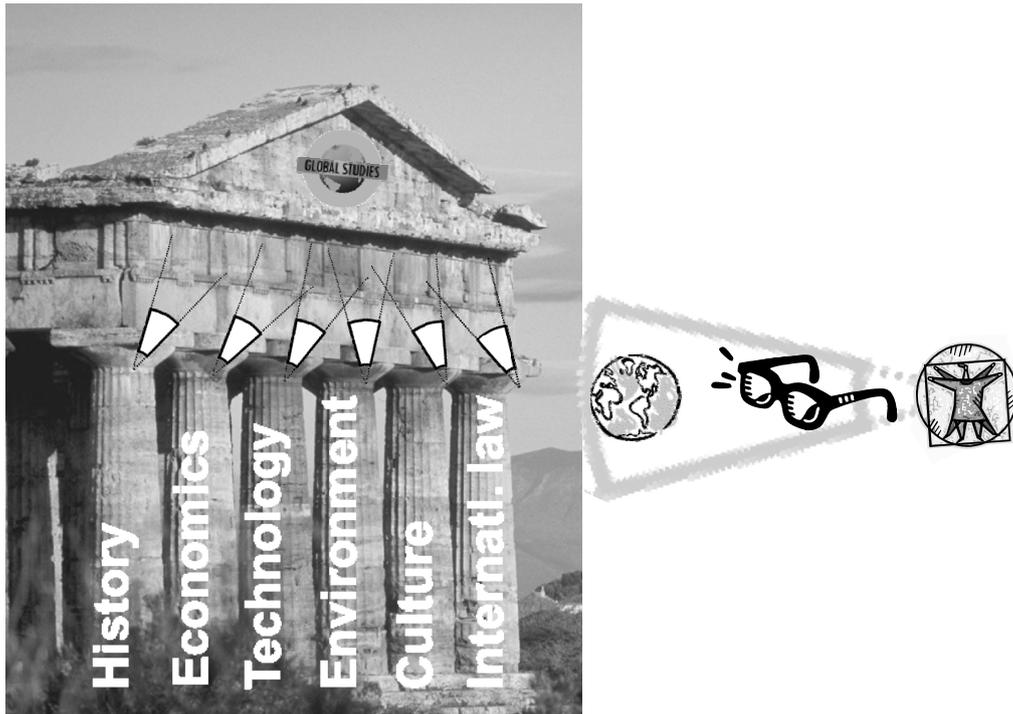


Fig. 4. The importance of perspectives in developmental and global studies. Perspectives are world views, symbolized by the person at right, resembling Leonardo da Vinci's human called 'Vitruvian Man'. Looking at realities is graphically symbolized by the looking angle or wedge starting out from the observer and ending at the globe which symbolizes the real-world's global change and globalization. At left: in its academic manifestation, this same entirety is symbolized by the Greek temple with six columns standing for the six modules of the 'Global Studies' curriculum at Graz University having six departments; the GS logo is placed on the tympanum

In this sense, 'interculturality' means in this text an individual's ability to take several ('m') standpoints (second line in Table 2) that are likely to result in different weighing and assessing of single partial arguments. Other meanings of 'culture' in the usual sense (e.g., Wolf 2011) remain, of course, untouched by the above definition.

The combination of both interdisciplinarity ('n') and interculturality ('m') in the above-mentioned sense is called '*interparadigmatic*' in this text and means a ' $m \times n$ ' combination of both n viewing lenses and m viewing standpoints (second line in Table 2), hence *the ability to use diverse paradigms and epistemologies for thinking and assessing realities*. According to Lattuca *et al.* (2004: 35) and Perry (1968), the ability to employ various epistemologies and paradigms increases during individual biography.

Table 1. Concise explanation of interdisciplinary, intercultural and interparadigmatic scientific modes

Scientific mode as defined here	Explanation	Likely substrate of perception and cognition
interdisciplinary ('n-fold')	The observer uses n lenses from 1 standpoint to perceive the real world.	element 
intercultural ('m-fold')	The observer uses 1 lens from m standpoints to perceive the real world.	interaction 
interparadigmatic ('m×n-fold')	The observer uses n lenses from m standpoints to perceive the real world.	perspective 

As can be seen from the architecture of Fig 4 at left, the curriculum 'Global Studies' (and the bundle of electives GS) endeavors to build such combined and interparadigmatic view of globalization and global development by including the 'cultures of thinking' stemming from ('m') different cultural positions of students and faculty with the ('n') lenses of the disciplines history, economics, technology, sociology and culture, and international law as constituting perspectives and essential epistemologies. Fig 4 symbolically proposes the wedge of perception as a cognizable entity.

The evolution of 'substrates of cognition' along the three modes is depicted in the rightmost column of Table 2: elements – interactions – perspectives. Evidently, any strategy in global politics and developmental cooperation needs to deal with diverging perspectives as substrata of assessment – rather than dealing merely with sheer facts; as does, for example, physics (the author's initial discipline).

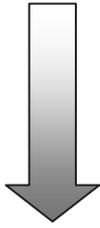
The combined deliberations emphasize that the above three modes of science clearly go beyond the degrees of multi-, inter- and transdisciplinarity that are common in literature: all these three degrees of integration across the disciplines gather within the first mode. However, intercultural thinking and interparadigmatic thinking include the position of the *reflective agent* within the self-referenced total of perceiving and influencing global change and globalization. The curriculum of 'Global Studies' at Graz University clearly defines an *interparadigmatic approach* (GS 2010: 2).

1.2.4 Competencies for interdisciplinarity. After the enlargement of the conceptual framework in the above subchapter, competencies and other requirements identified for interdisciplinarity in literature are understood to be also applicable to an interparadigmatic approach.

The initial definition of interdisciplinarity includes 'the capacity to *integrate* knowledge and *modes of thinking* in two or more disciplines to produce cognitive advancement' (Spelt *et al.* 2009: 366) and 'builds on a performance view of understanding, meaning that individuals understand a concept when they are ready to apply it accurately and flexibly in novel situations' (Boix Mansilla *et al.* 2000).

As a consequence of the above-mentioned requirements for the increasing levels of interdisciplinarity, Spelt *et al.* (2009: 366) consider 'the ability to *synthesize or integrate* as a beneficial learning outcome of interdisciplinary higher education.' As an example, a didactic procedure for such integration was provided by the negotiation game 'Surfing Global Change' (Ahamer 2005, 2006).

Highlighting the importance of perspectives (Table 2 below right) as substrata of reasoning and cognizing, Wagner *et al.* (2011: 16) and Miller and Mansilla (2004) assume a 'social process along four phases of increasing integration:



- *Mutual ignorance* of other disciplinary perspectives.
- *Stereotyping* that may have significant misconceptions about the other's approach.
- *Perspective-taking* where individuals can play the role of, sympathize with, and anticipate the other's way of thinking.
- *Merging of perspectives* has been mutually revised to create a new hybrid way of thinking.'

2. QA for the GS Curriculum

The key motto of QA in a developmental curriculum such as GS is *responsibility and 'accountability for educational outcomes'* (Ried 2011: 8). Any assessment procedure should use 'a variety of valid and reliable measures' serving as *metric for quality criteria agreed in consensus*. The university or 'school must use the analysis of assessment measures to improve student learning and the achievement of the professional competencies,' best as *continuous quality improvement* (p. 1).

2.1 Why GS and what is GS

The target of the interparadigmatic, intercultural and interdisciplinary developmental curriculum GS was coined and formulated by the Austrian doyen in peace research, Karl Kumpfmüller (2007, 2009) and has been developed by him in cooperation with a peer-oriented 'Steering Committee GS' (SC GS 2010) since 2004. The target and history of GS is extensively explained in Ahamer (2013a) and Ahamer *et al.* (2011). The aim of GS is a *professional preparation for critical and peaceful global developmental cooperation and humane management of globalization issues*, for example, with a strong orientation towards human rights (Benedek 1994). Since its inception, the SC GS has always comprised representatives from all schools of Graz University (in German: faculties, hence GS is an interfaculty curriculum). The author was dispatched to the SC GS to represent the interdisciplinary curriculum Environmental Systems Science and has done so since the first year of GS; this unique curriculum in the meantime belongs to a nearly founded university faculty comprising pedagogics, environmental, systems analysis and interdisciplinary studies (URBI 2019).

According to the above scheme of (a) curriculum mapping and (b) course mapping, the activities listed below have already been performed for GS Graz; another assessment exercise is likely to be launched by the university senate soon. The present paper should also provide a framework for such a forthcoming assessment.

Bluntly speaking, for each author (a) an assessment method (m) can be found where author 'a' ranks as best or second best out of the given sample of twelve. This 'finding' translates the assessment exercise (or optimization exercise) 'how good is each author "a" in the perception of assessment method "m"' in a conjugate assessment (or optimization) exercise, namely 'how good is each assessment method "m" in the perception of the author "a"' (Fig 5). Such a self-referenced social procedure (in the language of social sys-

tems analysis) might produce non-linearities in optics, favor sub-optimal perception and the persistence of local sub-optima. Clearly, power relations are an important ingredient on both the local and global scale, including the power of defining success criteria. In the author's view, escape from such a closed loop pictured in Fig 5 is feasible by *proactive esteem and acknowledgement* of other, foreign quality definitions and quality concepts. Escape is impossible when continuously residing within one's own frame of reference for quality.

Mathematically speaking, a and m are conjugate functions producing two conjugate spaces: the a -space and the m -space. Assessors and assessees might decide to wish to live (only) in either of them – but they might also remember that in other walks of life they change their roles – this is exactly the approach of the negotiation game ‘Surfing Global Change’ (Ahamer 2005, 2006). For *design science* (Dorst and Cross 2001), such conjugate spaces are known as problem space and solution space. For *systems analysis* (Ossimitz 2000), such structure is autopoietic and constructs itself – this might be a nice reference to pedagogic constructivism (Watzlawick 1988). In such systems, the ‘construction of meaning’ (e.g., of ‘quality’) may depend on the smallest stochastic changes in initial preconditions; according to the teaching of *chaos theory*.

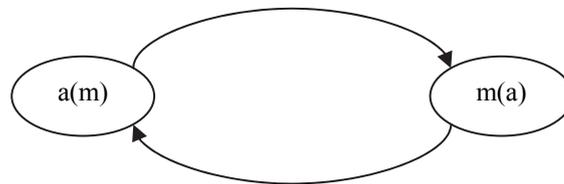


Fig. 5. From a systems analysis viewpoint, assessment exercises can be understood as a self-referential system: the assessment $a(m)$, i.e. ‘how good is each author “a” in the perception of the assessment method “m”’ is complemented by a conjugate assessment $m(a)$, i.e. ‘how good is each assessment method “m” in the perception of the author “a”’. Such autopoietics create social dynamics that are typical for any closed systems

2.2 Dynamic bibliometric analysis of developmental journals by database

As with any attempt at measuring, journal ranking also includes underlying quality paradigms, power relations and critiques of paradigms considered as insufficient to successfully understand globalization and the complexity of dynamic techno-socio-economic development. Hence, rankings are always individual and collective battlegrounds open to further debate.

In a positive sense, the motto ‘each indicator may tell a useful story’ reported by Wagner *et al.* (2011: 25) might be adopted to reconcile often fundamentally different approaches to quality.

When manually extracting online data from the ISI, Scopus and PoP retrieval systems, the first question arising is ‘which of the many descriptors offered is most useful?’ (see

their definitions in Footnote 1 some pages later). One author's first but subjective suggestion is shown in Fig 6: the traditional ISI (2019) impact factor IF (first row) might not yet equilibrate among the intrinsically different citation habits within certain disciplines (natural sciences, technology, sociology, economics, history, *etc.*); however, the recently emerged Scopus (2019) SNIP factor does.

From the vast selection of Harzing's (2010) PoP (2007), the 'age-weighted citation index' (AW index) is selected because it includes what may be an appropriate emphasis on citations in years that are next or close to the publication year, which seems to be peculiar to ISI Thomson factors. Fig 6

Fig. 6 at first sight presents an impenetrable multitude of data which at second glance do exhibit regularities and trends. For an easier overview, the initial default graphic icons have been replaced by encircled figures signifying the suggested rank (Table 3) for the first ten ranked journals.

Other selected factors from all three retrieval systems (Fig 7) might provide advantages to the readers by including, for example, a longer window of opportunity to register citations (ISI 5-year IF, at far left), renormalization by the article number per journal (ISI article influence AI, at left).

All three suggested 'most useful descriptors' from Fig 6

Fig. 6 provide a rather clear span of single time series. However, this might not be the case for one of the suggested 'second most useful descriptors,' the Scopus SJR index (SCImago journal rank, center in Fig 7); but the question does remain whether such diagnosis of a field of very similar impact (apart from a few leading journals) is not even more realistic. Also, it seems difficult to interpret whether the general downward trend of all developmental journals' SJR denotes a general decline in activity in the field, or is an artifact of measurement.

The 'contemporary h index' (h_c index, at right in Fig 7) shows values quite similar to the QW index but is more widely used than the latter. However, the most widely known sheer h-index seemingly shows distortions towards earlier years.

All indicators seem to demonstrate a general tendency to increase until 2,000 but then modest leveling off. SJR shows a small number of leading scores and an undecided majority of moderate scores of developmental journals – different from most other indicators that show a more differentiated field. In SJR, a general decline of all developmental journals is also visible which seems to require closer interpretation.

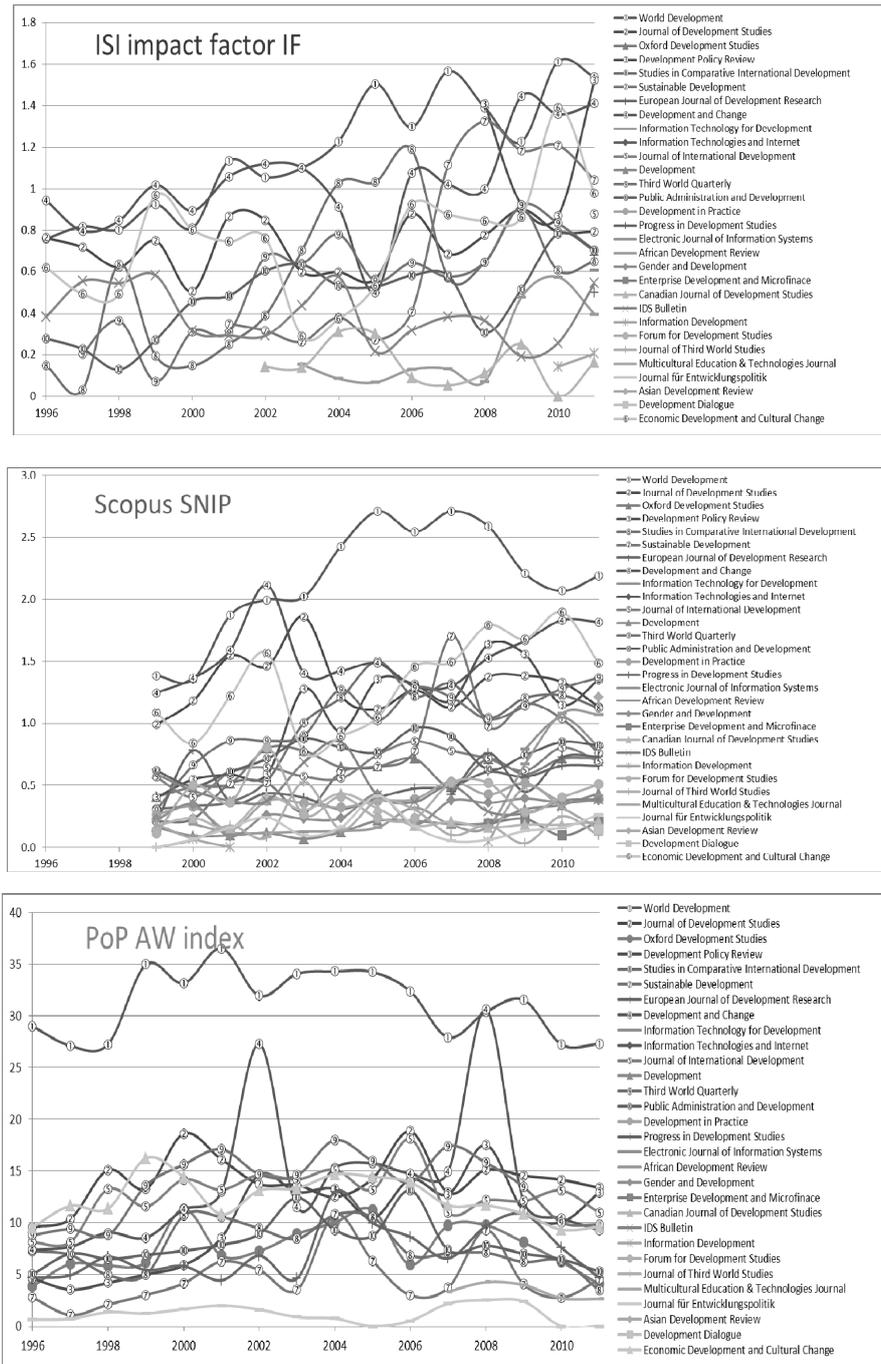


Fig. 6. Indices from all three data bases (ISI, Scopus, PoP) with suggested 'best' user value: ISI Thomson Impact Factor IF, Scopus SNIP, PoP AW index (Google Scholar based)

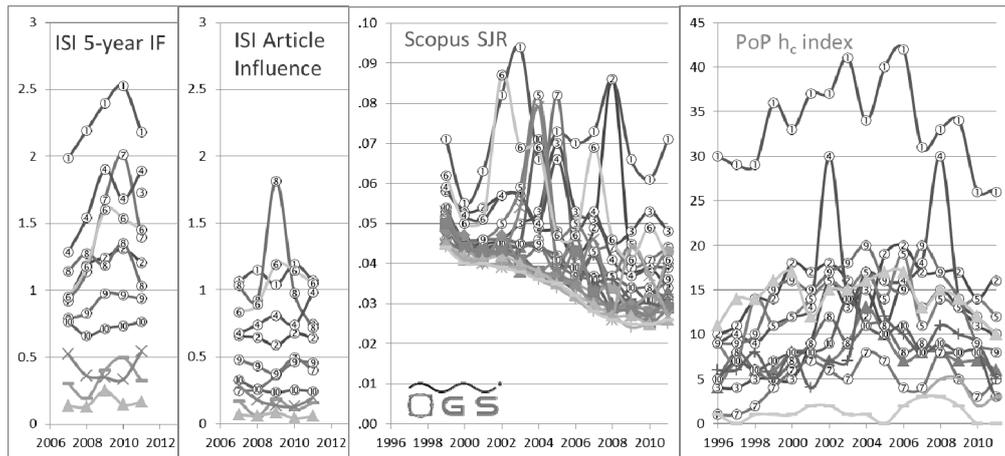


Fig. 7. Indices from all three data bases (ISI, Scopus, PoP) with suggested 'second-best' user value: Scopus SJR, ISI Thomson 5-year Impact Factor, PoP h_c index score (based on the Google Scholar database), Legend see Fig 6

As an overall picture, it seems that the ranking of developmental journals proposed in the present article which is based on a manual synopsis of rankings according to all single available factors ISI IF, ISI 5-year IF, ISI Eigenfactor, ISI Article Influence AI score; Scopus SJR, Scopus SNIP; PoP h index, PoP h_c index, PoP AW index for 2011, see plots in additional material provided online as Ahamer (2012b) rather follows the PoP AW index that consequently appears as most telling and most characteristic after the present exercise, at least for developmental journals.

Table 3. Journals listed according to the sequence proposed in this article. Ranking based on all single available factors for 2011. Data for 'published since' stems from the journal's content site and may differ with first year found in PoP, also due to name changes

Rank	Journal	Publisher	Published since
①	World Development	Elsevier	1973
②	Journal of Development Studies	Taylor & Francis	1964
③	Development Policy Review	Wiley-Blackwell	1966
④	Development and Change	Wiley-Blackwell	1970
⑤	Journal of International Development	Wiley-Blackwell	1989
⑥	Economic Development and Cultural Change	Univ. Chicago Press	1952
⑦	Sustainable Development	Wiley-Blackwell	1993
⑧	Studies in Comparative International Development	Springer	1965
⑨	Third World Quarterly	Taylor & Francis	1979
⑩	Public Administration and Development	Wiley-Blackwell	1981
11	European Journal of Development Research	T&F and Palgrave	1989
12	Oxford Development Studies	Taylor & Francis	1972
13	Multicultural Education & Technologies Journal	Emerald	2007
14	Journal für Entwicklungspolitik (in Ger.& Engl)	Mandelbaum (MK)	1986

Such tentative impression is astonishing, given the almost exclusive relevance of the ISI IF for almost all institutional and individual rankings. If this should prove true, the inclusion of a high amount of grey literature (PoP) seems to make up for the (often contested) selection process when adapting or excluding single journals to a retrieval system such as ISI. The present survey has been performed only with regard to developmental journals and includes modest spanning across scientific disciplines. However, harsh non-linearities among scientific disciplines do exist regarding their perception by different indices and are analyzed on an individual level in Ahamer (2013b) – whereas the present article pertains to the level of journals.

2.3 Historic bibliometric analysis of developmental journals

The most widely known systems of literature analysis, ISI and Scopus, start their quantitative analyses in the years 1996 and 1999, respectively. However, PoP data do not have such principal limitations. Therefore, the following plot provides a longer time axis, namely as far back as the coverage of the earliest founded journal under analysis. Such ‘historic’ analysis uses the AW index (PoP) because of its high significance for overall journal ranking and the unrestricted availability of Google Scholar data when processed by the PoP software. Data series in Fig 8 are smoothed to exclude oscillations (shown as a four-year moving average which showed the clearest timelines).

Such graphic analysis provides a larger framework to assess the dynamics seemingly inherent in the rise and (hopefully not) fall of journals and even entire disciplines, be these as interdisciplinary-oriented as is ‘global development.’ Most developmental journals were founded in or around the legendary year 1968 (especially during the startup decade of 1963–1973) and have witnessed a steep rise thereafter. The only exception within the present selection is ‘Economic Development and Cultural Change’ which possibly dwells on an earlier paradigm of developmental and economic sciences. The considerable rise of almost all journals in the field is only interrupted by several, possibly systemic, bumps during the years 1979–92 and around 1989 as well as 1999. The apparent decline during the last five years of the curves might be generally due to the lower probability of articles receiving citations in such shortened period. This diagnosis for the latter years is tentatively in line with results for the ISI IF and Scopus SNIP in Fig 6.

The above Section 1 has attempted to find a first entrance key to the highly interdisciplinary and multiparadigmatic field of development and global studies. The above bibliometric plots can only offer suggestions on where to start personal explorations that each individual will have to undertake on his/her own.

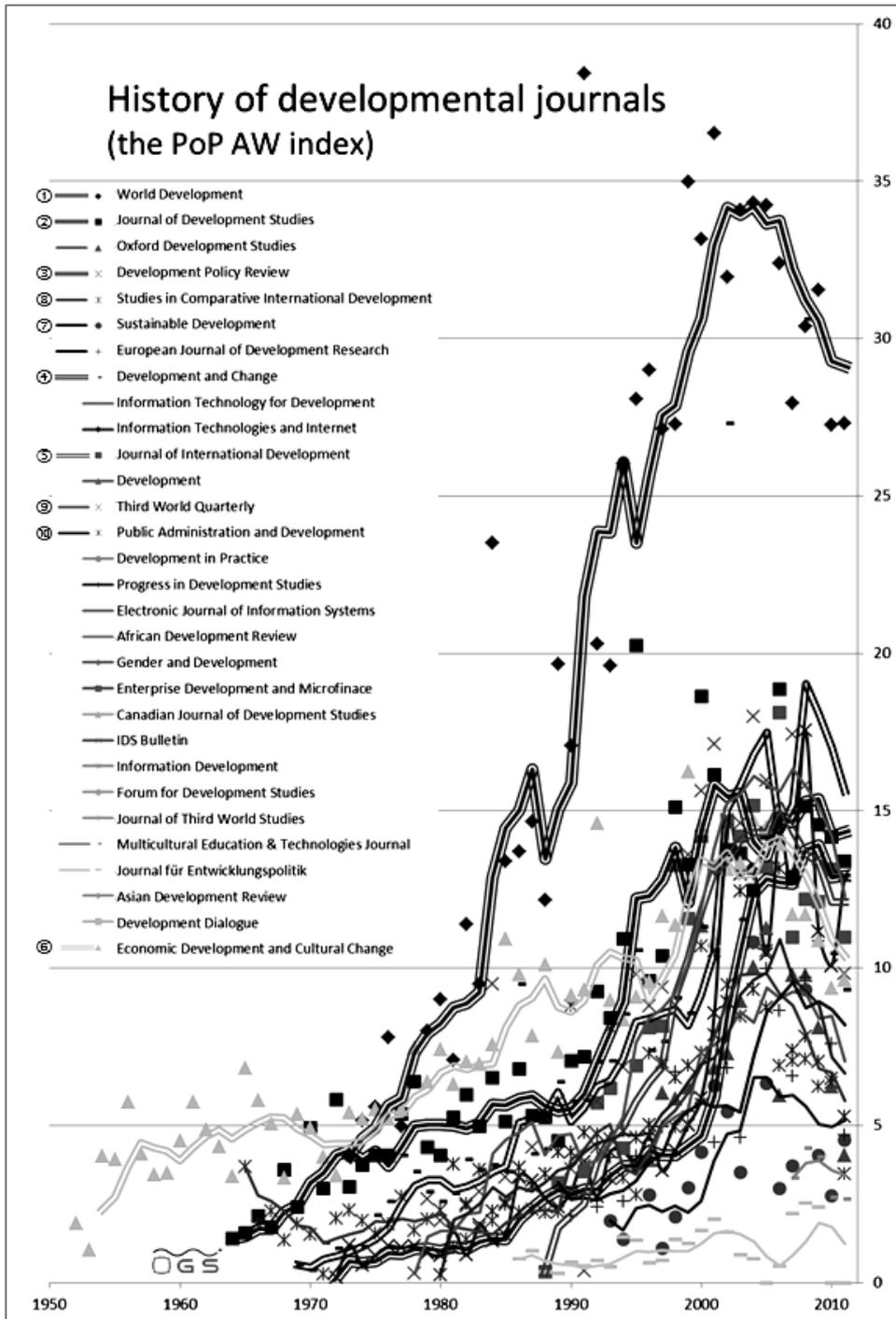


Fig. 8. History of PoP AW index score (four year moving average) based on Google Scholar

The English text of the curriculum GS is for the first time presented in its entirety (including earlier and more detailed text versions) in this article after having been documented partially beforehand, in order to enhance in-depth and concrete discussion on the modules and elements needed to implement the above-mentioned guiding educational ideas. This key concept of interparadigmatic approach is symbolically expressed by combining several interdisciplinary and multiperspectivist logos in Fig 9.

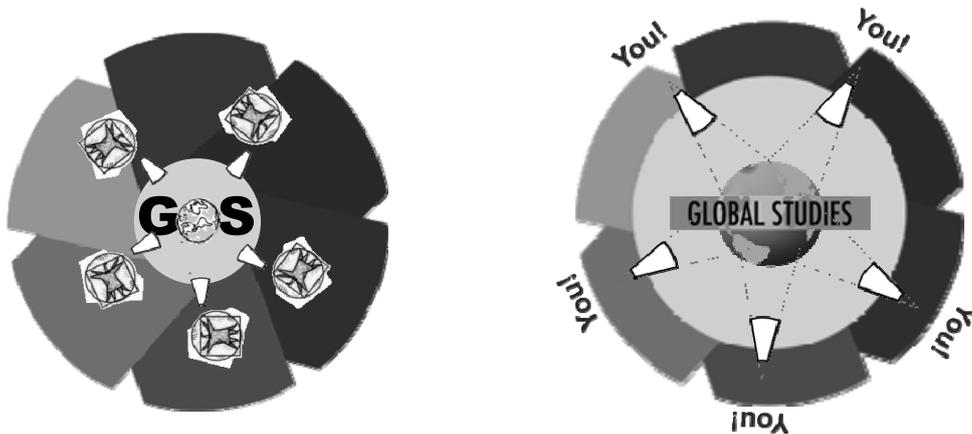


Fig. 9. At left: multiple perspectives on global realities are described by the logos having the six colors of the 'faculties' of Graz University as background. At right: each student and lecturer first provide but one perspective to GS but is continuously trained in dialogue to perceive also the others' perspectives. All actors take different standpoints according to their real-world involvement in globalization procedures

3. Conclusions and Recommendations

This article has *firstly* provided an in-depth *bibliographic analysis* of over two dozen developmental journals according to the three most comprehensive retrieval systems for scientific literature: ISI, Scopus and PoP analyzing Google Scholar data. Comparison of all available indices such as impact factors, SNIP, and *h* values has allowed the proposal of a heuristic ranking of a dozen developmental journals denoted by encircled data throughout all figures of this article. Principal differences among indices were discussed. The PoP AW score (age-weighted citation rate index, similar to the h_c value) is especially able to provide historic time series that depict genesis, including the temporary ups and downs of the developmental scientific domain.

Secondly, this article has presented a full *Master's curriculum* for interparadigmatic developmental 'Global Studies' at an Austrian university as a template for similar interdisciplinary and intercultural endeavors to which the authors heartily invite all readers.

As a conclusion, this article suggests an ongoing interdisciplinary, interparadigmatic and interspectivist dialogic process of discourse among all involved stakeholders in developmental global studies in order to safeguard the highest possible academic quality

including all viewpoints, all disciplinary paradigms and every resulting concept of quality that ensues.

Overall, this paper has been undertaken in order to facilitate transparent and internationally acceptable high-quality assessment to assure the quality of interdisciplinary curricula such as developmental, peace, environmental and global studies.

The literature analysis yielded sufficient theoretical concepts on quality, interdisciplinarity and QA methodologies for interparadigmatic university curricula to propose a framework for future QA: Fig 1 shows the general overview which has to take into account the input, procedure and output of higher education.

For transnational higher education it is found to be important to take on an *interparadigmatic approach* which means being able to think along conceptions of diverse stakeholders involved in the complex issues of development, global change and globalization. Such an approach practically means a collaborative and team-oriented performance of academic duties, and no reliance on administrative hierarchies.

The application of above findings for the innovative interdisciplinary developmental curriculum 'Global Studies' includes a collection of learner-centered feedbacks and assessment procedures as well as bibliometric analysis. Documents and citations from three different bibliographic databases and derived metrics such as the *h* index permit quantifiable insight into the performance of lecturers which has to be complemented by social and structural information such as interparadigmatic competence, real-world experience from international developmental projects and didactics.

Options and limitations of bibliometrically based QA strategies were extensively discussed and changing frames of reference were recommended that span across disciplines.

The main recommendation for quality assurance in transnational higher education, especially in interdisciplinary curricula on global change and development, is professional clarity on targets that should most efficiently be monitored in a peer-oriented procedure involving assessors, lecturers, practitioners and university administration on an equal basis in a culture and atmosphere of collaboration. Limitation to discipline-oriented bibliometric metrics alone is not appropriate, as is limitations to implicit or explicit attribution of administrative or political power or financial sources in higher education. The present paper suggests that cutting-edge quality can be maintained and enhanced best in a *culture of mutual esteem, respect, personal integration* and orientation towards *clear performance criteria previously agreed in consensus* among older and younger contributors, from both the theory and practice sides of all disciplines.

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