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**KEY TERMS IN COMPARATIVE EDUCATION**

**Edited by Dr Ellen Boeren**

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## **INTERNATIONAL ORGANISATIONS**

### **International agencies**

An international agency is an agency with international membership and scope. It is established under the situation that, nowadays, communication among countries is more and more frequent. Countries get together to found international agencies and formalize agreements to achieve common objectives in the field of politics, economy, education, society and so on. Some agencies such as World Bank, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Organisation for Economic Co-operation and Development (OECD) pay much attention to education and they are authorized to carry out comparisons, e.g. through surveys, which is one of their core tasks (Bray et al., 2014).

### **Asian Development Bank (ADB)**

The Asian Development Bank (ADB) *'was conceived in the early 1960s as a financial institution that would be Asian in character and foster economic growth and cooperation in one of the poorest regions in the world'* (ADB, 2016). It started with 31 members in 1966 but has now 67 members. The majority of members are located within the Asia, although 19 members are not.

The ADB aims for a poverty-free region and strives towards this aim through delivering projects to boost economic impact in developing regions. The focus is on *'inclusive economic growth, environmentally sustainable growth, and regional integration'* (ADB, 2016). In achieving its aims, the ADB also recognizes the importance of education.

### **Center for Educational Research and Innovation (OECD)**

The Center for Educational Research and Innovation (CERI) conducts research into formal and informal learning at all ages. This research-oriented division of the OECD aims to increase innovative educational research and to foster the international exchange of knowledge among the associated states around the globe. The CERI's work draws on the OECD's international comparisons in the following areas, as explained on the OECD website (OECD, 2016):

- Governing Complex Education Systems
- Innovation Strategy for Education and Training
- Education and Social Progress
- Innovative Learning Environments
- Innovative Teaching and Effective Learning
- Generate forward-looking research analyses and syntheses.
- Identify and stimulate educational innovation.
- Promote international exchange of knowledge and experience.
- Schooling for Tomorrow
- Learning Sciences and Brain Research
- New Millennium Learners
- Social Outcomes of Learning
- Teacher Education for Diversity

- University Futures

### **Department for International Development (DFID)**

The Department for International Development (DFID), founded in 1997, is a ministerial department in the UK government that aims at helping overseas countries in addressing extreme poverty and promoting multilateral, mutual and sustainable development (Law & Smullen, 2008; Bray et al., 2014). Specifically, to achieve such an aim, founded in 1997, with around 2,700 staff in offices in London, East Kilbride and globally, DFID has always been seeking to assist 11 million children in their primary and lower secondary education as well as 50,000 women in pregnancy and childbirth health. DFID also actively supports research in the UK, e.g. in cooperation with the Economic and Social Research Council (ESRC).

### **European Union**

The EU is a partnership between 28 European countries, both economically and politically. Politically neutral countries such as Norway, Switzerland, Iceland and Lichtenstein are not members of the EU but have many bilateral agreements with them, e.g. to facilitate trade. In order to become a member of the EU, countries need to fulfil various economic and political conditions which is why for example Turkey's application to join has been pending.

There are three main legislative institutions in the EU, the European parliament, the Council of the EU and the European Commission. Economically and politically stronger countries tend to have a bigger say with Germany currently being perceived as the country defining the general political direction and priorities of the European Union.

Many educational initiatives have origin in the EU, the most notorious being the Bologna process which aims to create a unified European education space. Linked to Bologna, Erasmus university exchange and other affiliated programmes have allowed hundreds of thousands of university students from EU and beyond to spend a time studying abroad and thus developed internationalism in European universities. Europe also actively funds research in education and training and has its own statistical office - Eurostat, which collects and analyses data, also in relation to education.

### **Eurostat**

Eurostat, founded in 1958, is the European Commission's statistical office. Its' headquarters are in Luxembourg. Eurostat is responsible for gathering and analysing European comparable statistics and is now a Directorate General (DG) of the European Commission. Eurostat is also working to ensure sound methodology and understanding of core concepts in the entire European Union (Ec.europa.eu, 2016).

Eurostat focuses on range of themes (see Eurostat website <http://ec.europa.eu/eurostat>), more specifically: general and regional statistics; economy and finance; population and social conditions; industry, trade and services; agriculture and fisheries; international trade; transport; environment and energy; science and technology. Examples of European surveys relevant for those interested in comparative analysis in education include the Labour Force Survey and the Adult Education Survey.

### **International Labour Organization (ILO)**

The International Labour Organization, established in 1919, currently has 186 members. The ILO specialises in labour market aspects, centred around a number of objectives, as explained at the ILO website (Ilo.org, 2016): *'(1) promote and realize standards and fundamental principles and rights at work; (2) create greater opportunities for women and men to decent employment and income; (3) enhance the coverage and effectiveness of social protection for all; (4) strengthen tripartism and social dialogue.'*

The ILO has undertaken some work recommended for use in comparative research: e.g. the development of the 'International Standard Classification of Occupations (ISCO)' which can be used to compare respondents' occupations in different countries using the same classification.

### **International Monetary Fund (IMF)**

The IMF was set up during the Second World War, more specifically at a meeting in Bretton Woods (USA) in 1944, with the aim to pay focused attention to financial and monetary issues (Bray et al., 2014, p. 30). Its headquarters are in Washington, DC. The original aims of the IMF, as explained at its website are: *'promote international monetary cooperation; facilitate the expansion and balanced growth of international trade; promote exchange stability; assist in the establishment of a multilateral system of payments; and make resources available (with adequate safeguards) to members experiencing balance of payments difficulties.'* In relation to education, the IMF actively supports economics' education.

### **Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP)**

The Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP) was established with the support of the Government of India, which is also an integral part of UNESCO (Mgiep.unesco.org, 2016). MGIEP was launched in 2012 by the Director-General of UNESCO, Irina Bokova, and the President of India, Pranab Mukherjee. It has been named after Mahatma Gandhi as a tribute to his ideas of non-violence and sustainable living (Mgiep.unesco.org, 2016).

MGIEP's work is part of UNESCO's aims to ensure quality 'education for all'. Its objectives are based on the preamble of UNESCO's Constitution, which calls for the defences for peace to be created in the minds of both men and women. MGIEP works at all levels, ranging from government policies to classroom teaching methods and informal learning to empower young people to adapt to their changing environments and to lead socially responsible lives in order to contend with interconnected global issues such as exponential economic growth, globalization, and rising inequalities.

MGIEP is engaged in several youth programmes, which empowers young people to lead social initiatives and nurtures skills for peace, sustainability, and global citizenship, such as the 'YESPeace Network', and the 'Changemakers Programme' (Mgiep.unesco.org, 2016).

### **OECD**

The Organisation for Economic Development (OECD), established in 1961, is an international organisation that actively supports the economic and social prosperity of people and currently

consists of 34 members from developed countries (OECD, 2011). In relation to education, the OECD strives towards increasing the quality of education, focussing on both teaching and learning, among its members, in order to improve levels of employment and social cohesion. The OECD manages large scale survey in order to provide policy makers with directions on how to increase their education strategies. PISA – the Programme for International Student Assessment – measures skills in reading, mathematics and science among 15 year olds, PIAAC – the Programme for International Assessment of Adult Skills measures adults’ proficiency and use of skills, as well as their participation in lifelong learning activities, TALIS – the Teaching and Learning International Survey – is undertaken with teachers in order to get more insight in their working conditions, the environments in which they work, their self-efficacy and job satisfaction (2015a). Results from these surveys, as well as an overview of other data on education related aspects in the OECD’s members states are published in the annual ‘Education at a Glance’ report (e.g. OECD, 2015b).

### **UNESCO**

The United Nations Educational, Scientific and Cultural Organization (UNESCO), originally established in 1945, aims to facilitate the maintenance of long-term peace (UNESCO, 1945). Nowadays, with the shifting global economic, cultural and political trends and increasing awareness of the power of intelligence in building peace and sustainable development, the objective pursued by UNESCO have stretched and cover five areas: *‘education, natural sciences, social/human sciences, culture, and communication/information’*. In relation to education, UNESCO leads the Education for All (EFA) movement, which strongly focusses on making education accessible and from a decent standard, for both children, adolescents and adults. As of 2015, plenty of goals of EFA have been progressively achieved; however, due to the different interpretation and complement process of EFA, there still exist plenty of discrepancies in terms of results in various countries (UNESCO, 2015).

### **UNICEF**

The United Nations Children’s Fund (UNICEF) was established in 1964 as a UN organization with the aim to defend, promote and protect children’s rights, but also to work on protecting the most advantaged children in the world (United Nations in Brussels, 2013). UNICEF is active in around 190 countries and its’ mission is carried out by each country office through a unique cooperation programme which is developed by the host government. UNICEF has the purpose of overcoming the obstacles that disease, violence, poverty and discrimination occur in the growth of a child.

UNICEF recognised the importance of care in young age as it will have a strong influence on a person’s future. UNICEF spares no effort in promoting girls’ education in order to ensure they have opportunities to develop in critical thinkers and active citizens. UNICEF is also active in preventing childhood diseases, as well as helping families affected by HIV (UNICEF, 2015).

### **United Nations**

The United Nations, founded in 1945, is an international organization that aims to: (United Nations, 1955), *‘maintain international peace and security, promote sustainable development, protect human rights, uphold international law, deliver humanitarian aid’* (United Nations, n.d.).

This intergovernmental organization was first set up to oppose to the regimes of Nazi Germany, Italy and Japan during the Second World War (United Nations, 1955; Last, 2007). The headquarters of the United Nations are in New York (The Oxford essential dictionary of the U.S. military, 2001). Specific entities of the United Nations dealing with education and children include UNESCO and UNICEF.

### **United World Colleges**

The United World Colleges (or UWC), established in 1962, was set up to enhance shared learning experiences for those young people affected by the cold war. Currently, the UWC is an education movement active in around 140 countries. Programmes are on offer for children and teenagers. Their education programme aims to be challenging and transformational and reaches around 7,500 students every year. UWC activities are attended by a wide range of people coming from different nationalities, socio-economic backgrounds and a variety of cultures and nationalities. All of them have in common that they want to actively contribute to living in a fairer and more equitable world.



## INTERNATIONAL PROGRAMMES AND SURVEYS

### **Assessment of Higher Education Learning Outcomes (AHELO - OECD)**

The Assessment of Higher Education Learning Outcomes (AHELO) is a programme developed by the Organisation for Economic Co-operation and Development with the aim to assess outcomes of higher education (OECD, 2012, 2016). A feasibility study has been undertaken so far, involving students, universities, countries, and stakeholders. The AHELO feasibility study wanted to find out whether is feasible to assess students' knowledge upon graduation and explored outcomes in generic skills, as well as skills relating to communication and problem-solving. Not only students were asked to fill in a questionnaire, but also staff members in faculties at higher educational institutions were asked to answer questions about the students' learning environment in order to better contextualise the student data. The AHELO assessment not only aims at international rankings, but more importantly aims to be a direct evaluation of student performances. AHELO also aims to generate more insight in different student outcomes in different context, such as different types of higher education institutions. As with other OECD international programmes (PISA, PIAAC), an important focus is on policy learning among countries.

### **Erasmus Plus Programme**

Erasmus+ is a specific mobility Programme *'in the fields of education, training, youth and sport'* (European Commission, 2016, p. 9). Erasmus+ aims to support mobility among students, staff members and volunteers in Europe to increase their general skills as well as their employability. The programme therefore encourages participants to share good practices. Funding is provided for institutions to build partnerships and to develop new innovative approaches in these education-related fields.

### **Eurostudent**

Eurostudent was established in 1994 and collects international comparable data related to the social dimension of higher education in Europe (see Hauschildt, et.al 2015). Eurostudent seeks to foster equality in accessing higher education in Europe and to increase diversity among people obtaining a higher educational degree in Europe. It also looks into the socio-economic background, living conditions and mobility of European students. All studies can be accessed for free through open access. Eurostudent is funded by a variety of funding bodies, including the EU; however, the organisation is politically independent and coordinated centrally from Germany – Hannover – with affiliated representatives in 29 countries throughout Europe (see Eurostudent.edu 2015).

### **IALS**

The International Adult Literacy Survey (IALS) was a large comparative survey programme organised by the Organization for Economic Cooperation and Development (OECD). Data were collected among adults in more than 20 countries in the 1990s. Later on, the OECD organised similar surveys focussing on literacy skills, such as the Adult Literacy and Life Skills (ALL) survey and the Programme for the International Assessment of Adult Competencies (PIAAC), two programmes serving similar

purposes (St Clair, 2013). Within IALS, three types of literacy were measured: prose literacy, document literacy and quantitative literacy. Data were collected among adults between age 16 and 65. Each country surveyed several thousands of adults, sample large enough to undertake significant and reliable analyses.

### **International Baccalaureate**

The International Baccalaureate (IB) which is also considered as International Baccalaureate Organization (IBO) was founded in 1968 in Geneva, Switzerland, offering four international educational programmes (Primary Years Programme, Middle Years Programme, Diploma Programme and Career-related Programme) (International Baccalaureate, 2015b) which help children aged 3-19 develop the emotional, intellectual, personal and social skills to live, work and learn in the increasing globalised world (International Baccalaureate, 2015a). This non-profit education foundation develops international educational programmes and strict assessment with the cooperation of schools, governments and international organizations (International Baccalaureate, 2015a). IB gains reputation for high standards of teaching and emphasis on critical and creative thinking. It is different from other educational programmes or curricula because it aims to develop *'inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect'* (International Baccalaureate, 2015c). IB students are encouraged to be active, compassionate and think about their local and international environment, respecting other people with differences. Schools must get the authorization from the IB Organization to offer the IB programmes and these schools with IB programmes are called IB schools. According to Robinson (2016), there are 3,460 IB schools across 143 countries at present.

### **PIAAC**

The Programme for the International Assessment of Adult Competencies (PIAAC) is organised by the OECD and consists of a Survey of Adults' Skills measuring what are perceived to be the key skills needed by individuals in the current knowledge based economy. PIAAC focuses particularly on literacy, numeracy and problem-solving skills and consists of a background questionnaire, on top of the specific skills assessments, designed to be valid cross-culturally. PIAAC provides rich comparative data for adults in the working age of 16-65 and is intended to provide information for effective policy-making (OECD, 2015). The first results of the survey were being released in 2013.

According to Ozga and Lingard (2007) PIAAC, has had an important impact in *'the construction of a global educational policy field constituted through numbers. This has been described as a new form of governance within member nations, namely 'governing by numbers'* (Ozga and Lingard 2007). Or in other words, the governing by numbers approach has been strong in putting pressure on individual countries to introduce reforms that would enhance the measured skills.

### **PISA - Programme for International Student Assessment.**

The Programme for International Student Assessment (PISA) is a well-know study of student assessment, organised by the Organisation for Economic Co-operation and Development (OECD). Every three years, 15 year old students from across the world are assessed in the fields of mathematics, science and reading (Bray et al., 2014). PISA started in 2000 with 43 countries and has

grown over the year, with 67 countries taking part in the 2012 round and more than 70 countries in the 2015 round (Oecd.org, 2016). PISA results are presented publicly in country rankings, which *'allow national policy makers to compare the performance of their education systems with those of other countries'* (OECD, 2013b). Apart from direct assessment, PISA also provides information about learning motivation of 15 year olds, their strategies in coping with learning etcetera. PISA also gathers information about background characteristics such as gender and socio-economic background, in order to conduct targeted analyses (Bray et al., 2014).

### **Progress in International Reading Literacy Study (PIRLS)**

The Progress in International Reading Literacy Study (PIRLS) is an international study organised by the International Association for the Evaluation of Educational Achievement (IEA). PIRLS aims to evaluate reading literacy of children at the fourth grade. It was first conducted in 2001 and has been on a regular 5-year cycle since then (TIMSS & PIRLS). In 2001, 34 countries participated in PIRLS, growing to 47 in 2016.

PIRLS focuses on three literacy related aspects: processes of comprehension, purposes for reading and reading behaviours and attitudes. Comprehension and purposes are assessed through a written test, while behaviours and attitudes are investigated through a background questionnaire, to be filled in by students as well. Questionnaires are also handed out to parents, teachers and schools to get better estimates about the environment in which students learn and grow up.

### **TALIS (Teaching and Learning International Survey)**

The Teaching and Learning International Survey (TALIS) is organised by the OECD and has been carried out in 2008 for the first time, 2013 for the second time. In 2013, TALIS collected data from more than 55,000 teachers spread over 3,300 schools in 19 different countries. The survey is dedicated to teachers and school leaders and their professional experiences, "background, beliefs and practices" (OECD, 2014). It also seeks to expose potential lack in support, training and resources on primary and secondary school level. Following from that, TALIS makes suggestions for policy improvements, aiming for the development of a "high-quality teacher profession" (OECD, 2014).

The last survey was conducted in 2013, revealing – amongst other things – that teachers still often work in isolation and that there is a shortage on support and further education, especially in regard to the supporting of children with special needs and the ICT-skills of teachers. The findings also suggest that students' behavior has a more significant impact on teacher-satisfaction than the size of the classes. The international comparison furthermore exposed that throughout the school levels, there is no gender equality among teachers, i.e. that there are distinctly more female teachers.

### **Trends in International Mathematics and Science Study:**

TIMSS is a large scale international study that focuses on the assessment of mathematics and science. Around 4,500 to 5,000 students per participation country are required to complete the assessment, but teachers and head teachers are also surveyed through background questionnaires.

TIMSS was set up by the International Association for the Evaluation of Educational Achievement and the first assessment round took place in 1995. Since then, every four years, children and teenagers in the 4<sup>th</sup> and 8<sup>th</sup> grade have taken part in the study. Unlike PISA, TIMSS focuses exclusively

on math and science education. TIMSS is possible through the combined collaborative efforts of numerous organizations, including: IEA Data Processing and Research Center, TIMSS & PIRLS International Study Center at Boston College, the IEA Secretariat, Statistics Canada, and Educational Testing Service (ETS).

## POLICY TERMS

### **Benchmarking**

In education policy, education benchmarking is used to achieve specific challenges in a wide range of countries and as a means to encourage countries to make progress towards specific benchmarks. E.g. the European Commission defined a set of benchmarks, targets, to be obtained by its' member states by 2020. Examples include the participation in education and training of at least 15 percent of the population, a participation of at least 95 percent of children participating in early childhood education and a reduction of early school leavers between the age of 18 and 24. Benchmarking of performances of education systems across the world is also one of the core aims of the OECD, reporting progress towards a set of indicators in their annual Education at a Glance reports.

### **Bologna Process (Higher education)**

The Bologna Process refers to the collaboration between universities set up in 1999 in 29 European countries. Its' initial aim was to promote a European system of higher education (Bray et al., 2014). Some of its main aims were to increase educational mobility, standardise educational qualifications and course lengths, and enhance quality assurance, with a commitment to '*clarify, strengthen, and promote distinctive values of European higher education*' (Gaston, 2013: 30). An example of the standardisation is the introduction of a Bachelor and Master system in all participating countries, following the Anglo-Saxon model. Although it appears that there are discrepancies in the selection and implementation of these aims across universities and countries (Gaston, 2013), 47 countries are now part of this initiative, with its influence stretching across the world - leading to plenty of opportunities for comparative studies (Bray et al., 2014).

### **Educational Policy Borrowing**

'Educational Policy Borrowing' refers to the act of searching for an educational policy which appears successful before 'borrowing' it, applying it to another context in need of educational reform. Such searches may: (1) begin within countries which share the same language (i.e. English-speaking policy makers will look to other English-speaking countries for educational policies), (2) be politically motivated, looking in places with political links, for example, within the EU, or (3) be hierarchical, where policy-makers in a less developed country search for working ideas in more developed countries (Bray et al., 2014). Alternatively, policy borrowing may occur intranationally, in countries where there exists a wide variety of educational systems and policies in implementation e.g. the US, but also Flanders and Wallonia in Belgium and the four different countries of the UK (ibid).

## **Education at a Glance**

Education at a Glance is an annual education publication of the Organisation for Economic Co-operation and Development (OECD). This report focuses on who participates in different levels of education, educational spending, and provides insight on how education systems operate and the results they achieved (Oecd-ilibrary.org, 2016). First published in 1992, Education at a Glance has now been more extensive than ever and has profited from an increased level of reliability as more and better data sources have become available (Bray et al., 2014). In principal, Education at a Glance is a report that demonstrates differences in relation to a wide variety of educational aspects at the country level, while separated statistics are produced in case of different education systems in one country: e.g. Flanders and Wallonia in Belgium. In recent years, many non-members of the OECD have decided to participate in OECD studies, including PISA and PIAAC.

## **Education Indicators in Focus (OECD)**

*‘Education Indicators in Focus is a recurring series of briefs that highlight specific indicators in OECD’s Education at a Glance that are of particular interest to policy makers and practitioners’* (OECD, n.d.). The briefings report tables and charts related to educational issues in a wide range of educational levels, ranging from pre-primary to higher education and adult learning. The report does not only focus on indicators in relation to access to education, but also reports on investments in education, the learning environments in schools and the impact of learning.

## **Education for All (UNESCO)**

The 'Education for All' initiative is – according to its coordinator UNESCO (2015) – *‘a global movement [...] to provide quality basic education for all children, youth and adults’*. The scheme was mandated to the UNESCO in 2000 by the *Dakar Framework for Action*, which dates back to the *World Declaration on Education for All* formulated in 1990 in Jomtien (see UNESCO 2000). UNESCO's key areas of responsibility are *‘policy dialogue, monitoring, advocacy, mobilisation of funding and capacity development’* (UNESCO 2015).

In 2015, 164 nations committed themselves to the movement by agreeing on the following six aims (from UNESCO 2015):

- Goal 1** Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children.
- Goal 2** Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to, and complete, free and compulsory primary education of good quality.
- Goal 3** Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes.

**Goal 4** Achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.

**Goal 5** Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality.

**Goal 6** Improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

### **Education Policy Outlook (EPO)**

The Education Policy Outlook (EPO) maps education trends and actions in OECD countries in relation to its students, institutions and educational systems. The analyses reported are both qualitative and quantitative and give a reasonably detailed account of each country. The 2015 edition *Education Policy Outlook – Making Reforms Happen* had following general findings (EPO, 2016):

- 1) There is a trend in investing into vocational and tertiary education as well as into teacher training and equity in student opportunities.
- 2) There is a lack of investment into evaluating the impact of the reforms.
- 3) The outlook recommends investing into changing classroom practices, into teachers' development, into engaging various stakeholders such as teacher unions and businesses
- 4) Reforms should aim to be sustainable rather than bound to political agendas

At the site of the EPO, there is a helpful reform finder which gives an overview of different reforms taking place in OECD countries. Areas included in the analysis are equity and quality, preparing students for the future, school improvements, evaluation and assessment, governance and funding of education systems.

### **Gender Inequality Index**

The Gender Inequality Index (GII) is an inequality index introduced in the Human Development Reports, produced by the United Nations Development Programme (UNDP). The GII focuses on three indicators of human development, as explained on the UNDP website: *'reproductive health, measured by maternal mortality ratio and adolescent birth rates; empowerment, measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status, expressed as labour market participation and measured by labour force participation rate of female and male populations aged 15 years and older.'*

The GII is thus very much concerned with the situation of women in society and aims to reduce existing gender gaps. According to the GII, in 2015, the ten highest-ranked countries

in terms of gender equality according to GII for 2015 are Norway, Australia, Switzerland, Denmark, Netherlands, Germany, Ireland, United States, Canada and New Zealand.

### **Gini Coefficient**

The Gini coefficient, ranging from 0 to 1, is a commonly used measurement for inequality, first proposed in 1912 by Italian sociologist Corrado Gini. The Gini is an incredibly important measure in Economics, and is frequently cited. However, the Gini is not perfect and does have some limitations – for example, developing countries, as they industrialize, are more likely to have higher Gini's. However, the Gini will not take into account that the overall number of people in poverty (or another metric) has gone down. Likewise, because the Gini is arrived at mathematically, different variations of income distribution will come up with the same Gini, which can make it an imperfect tool for economists.

### **Gross Domestic Product (GDP)**

'Gross Domestic Product' (GDP) is an important term in relation to economics and essentially refers to *'the total value of goods and services produced by a country in a year'* (Cambridge Advanced Learner's Dictionary, 2013). A GDP is not indicative of the size of a country, but is assessed purely in terms of the resources and services the country has – e.g. in 2014, the United States had the highest GDP globally, with the UK coming fifth, Australia twelfth and Chile forty-second (World Bank, 2015). This concept is particularly useful in quantitative statistical or comparative analysis studies as the GDP of a country can be used as a means of comparison across countries and in relation to expenditure in certain areas of education, for example, what percentage of GDP is spent on teachers, or per pupil (Bray et al., 2014). This method is more meaningful than simply analysing the *amount* of money spent on an educational service, as a country with a higher GDP can spend less percentage of its GDP but a higher amount of money compared to a country with a smaller GDP. To illustrate, in 2008, Australia spent 5.2% of its GDP on education, whilst Chile was one of the highest spenders, with 7.1% of its GDP assigned to education (OECD, 2011). This may be seen as significant as although Australia spent more money on education, Chile devoted more share of its GDP.

### **New Millennium Learners (OECD)**

The term 'Millennials' is used to describe the first generation of young people who group up with a wide range of digital media in their daily lives. Use of these media include knowledge management and peer-to-peer communications (Pedró, 2006). This generation is also called Net Generation, Instant-Message Generation and Game Generation because they are considered to be creative with technology, be adept with computers and highly skilled at multitasking (Pedró, 2006). The emergence of this digital generation has potential implication for education. In 2007, the Centre for Educational Research and Innovation



(CERI) at the OECD started the project New Millennium Learners (NML) aiming to analyse the new generation of learners, to understand their attitudes and expectations, and to explore the effects of digital technologies on childrens' cognitive skills and learning expectations (OECD, 2008).

## **GEOGRAPHICAL TERMS**

### **Country**

The word 'country' has several meanings. The Oxford Advanced Learner's Dictionary defines a country as 'an area of land that has or used to have its own government and laws'. A country may be an independent sovereign state which have its own centralized government, defined territory, permanent population and can establish diplomatic relations with other sovereign states. A country may also be non-sovereign political division which is subject to another state. Independent countries can regulate domestic and foreign trade as well as issue money through national banks. It also has the power on social issues, including education. Independent country should be recognized by other countries. Based on the above characteristics, currently, there are 196 independent countries in the world (Rosenberg, 2015).

### **Country Typologies**

A typology is '*a system used for putting things into groups according to how they are similar*' (merriam-webster). Comparative studies can aim for the development of a new '*classification based on types or categories*' (ibid.), respectively the elaboration of existing criterion-based typologies in regard to certain aspects – as for example Esping-Andersen's (1990) typology of welfare systems (see Fenger, 2007) – or compare existing typologies in regard to certain aspects. The latter approach addresses the issue that nations are often unsatisfying as units of analysis as they do not necessarily represent sensible entities (see Mason, 2014, p.240). In education, country typologies are often used as a tool to explain and understand differences between educational systems.

### **Decommodification**

Esping-Andersen (1990, p. 21-22) argues decommodification "*occurs when a service is rendered as a matter of right, and when a person can maintain a livelihood without reliance on the market.*" Social-democratic governments (e.g. those in Scandinavian countries) typically have higher levels of decommodification than liberal ones where there tend to be lower levels of redistribution (Esping-Andersen, 1990). Some critics say that higher levels of decommodification do not incentivise the population to actively seek work but this seems to depend on other circumstances than the generosity of social benefits (Moir and Stephens, 2007). Bolzendahl (2009) looked at decommodification from a gender perspective and pointed out that it seems to be positively associated with increase in women's employment and in women's political participation. Decommodification is often used as an indicator in the construction of country typologies.

## **Developing Countries**

A developing country is a country that is underdeveloped economically and industrially, but is making stride to do so. The United Nation's Human Development Index (HDI) serves a useful guide to determining which countries are 'developing countries' by looking at three key metrics: Life expectancy, access to knowledge, and standard of living.

Countries that are considered 'developing' have generally lower life expectancies, less educated populations – particularly in higher education – while also having potentially large disparities in education between men and women, and a rather lower standard of living in rural areas, with higher standards in urban communities. In terms of education policy specifically these countries generally have issues with: literacy, universal primary education, quality of education, access to education and gender equity. Finally, these countries also tend to have issues with regard to human rights and social integration – such as problems with LGBT rights and other minorities.

## **Federal Systems**

Federal systems refer to a system of governance in which power is divided between one central and numerous regional governments. For a direct example of federal systems in education policy, the United States serves as a good example. Distinct branches in the United States include the federal department of Education – which establish minimum guidelines, such as the No Child Left Behind act, or Race to the Top -, the state department of education, then localities such as districts and finally individual schools. The distinctions are important because they allow each state to decide for itself how they want to fund schooling, and what they want to focus attention to – such as curriculum. However, the federal department of education enforces and oversees their own minimum guidelines – while also providing federal money to help pay for education. Federal vs. Local schooling further devolves when issues such as parochial schools, voucher programs, home-schooling and charter schools come up, with each state having the authority to decide whether or not those schools will be funded with state/federal funds (when funds are apportioned as block grants) and state money. Examples of federal states in Europe include Belgium, which is divided between the Dutch speaking Flanders and the French speaking Wallonia who have their own educational policies and systems.

## **Globalization**

*'Globalization is a process in which the people and countries of the world are being brought closer and closer together, economically and culturally, through trade, information technology, travel, cultural exchanges, the mass media and mass entertainment'* (UNESCO TLSF website). Globalization is perceived to have started in the late 1800s when economies and cultures started to interconnect at a faster pace (Gale, W. J., 2000). Globalization could be recognized from at least four dimensions: economic globalization, environmental globalization, cultural globalization and political globalization. It is obvious that increasing

levels of globalization are a challenging aspect of undertaking comparative analyses in education (Bray et al., 2014, p. 295).

### **Knowledge diaspora**

This concept of knowledge diaspora was first coined by Welch (2008), and refers to the dispersion of people and knowledge across geographical boundaries, for example, expatriates of one country who form a small community in another. This is significant for comparative analysis studies as research focussing on districts, or states/provinces on the Thomas and Bray cube may collect data which is affected by the fact that non-native people, who bring their own culture, language and knowledge, reside in the area (Bray et al., 2014). Comparative analysis studies, must, therefore, bear in mind the phenomenon of 'knowledge diaspora' when conducting research including dimensions within Geographical/Locational levels, and Nonlocational Demographic groups.

### **Nation State**

The term "nation" is used to describe the inhabitants of a country, and this concept does not necessarily consider formal political unions. The "state" is considered as the political extension of the nation triggering the identical, positive psychological responses. It consists of: *'a permanent population, a defined territory, a government and the capacity to develop relationship with other states'* (Connor, 1978). Today, modern nation states no longer seem to be the principal framework of political sovereignty; in contrast, it has been *'de-territorialized, de-centralized and, thus, has a weakening effect on the capability of nation states to exercise power and control'* (Isabella and Roland, 2013). Another characteristic of the nation state is its own uniform national culture based on the policy, and it could promote a uniform national language and systems, such as an education system, through state policy.

### **Province**

A province is an administrative division within a country or state. In some cases, provinces are similar to states to some extent. For example, China is regarded as a province structure and the United States as a state structure. A range of other big countries like Russia, Indonesia and Canada have provinces as well. Depending on the country, provinces might have certain levels of autonomy in decision-making, e.g. in relation to the organization of education in their own province. In comparative education research, provinces are interesting levels to conduct intra-national research projects.

### **Virtual universities**

Virtual universities are in fact online universities in which teaching and learning occurs through the use of the internet. Virtual universities design and deliver courses and

programmes for post-secondary education, including university degrees, work place training, professional development and corporate education (Harasim, 1995). Virtual universities provide students with increased flexibility through the use of information and communications technology (ICT), ideal for a population who cannot attend campus-based education for a variety of reasons (D'Antoni, 2006). Some virtual universities only appear on the Internet without physical locations while some are organised in specific locations with or without actual campus. For example, the University of (UHI) offers learning opportunities for rural and dispersed population in Scotland for degree-seeking or non-degree-seeking purposes. Fifty local learning centres are used by UHI to give regional support to the learners. The courses are designed to meet the need of the Highland and Islands and are delivered by using videoconferencing, local classroom instruction, self-paced computerized instruction and other media (Watkins and Corry 2002). Virtual universities open up an interesting opportunity for comparative education research, moving away from the traditional geographical locations as units of comparison.

### **Welfare Regimes**

Welfare regimes are often classified based on their levels of social stratification and decommodification. A common understanding of welfare regimes is often explained through reference to work by Esping-Andersen (1990), who distinguished, based on an analysis of OECD countries, between social-democratic regimes, referring to the Scandinavian countries, liberal regimes, as found in many Anglo-Saxon countries and conservatist-corporatist countries regimes mainly found in Western continental European countries. These countries thus differ in relation to how they deal with financial, economic and social issues and are a helpful tool to use in education comparative research to select countries that or either similar or different from each other.

### **World regions**

World regions is a broad term and could be constructed from different perspectives: *'the unifying characteristics of any particular region may include language, political organization, colonial history, economic system, national ambitions, and/or cultural origins'* (Bray & Thomas, 1995). In Bray and Thomas' cube, World Regions/Continents is the highest level of geographic/location levels. According to the World Bank, there could be six world regions: Africa, East Asia and Central Asia, Latin America and the Caribbean, Middle East and North Africa, and South Asia (Worldbank.org, 2016). According to the Department of Economic and Social Affairs of United Nations (DeSA, 2013), there are seven major groups of world regions: Africa, Asia, Europe, Latin America and the Caribbean, Northern America, Oceania, and Sub-Saharan Africa.

## **SOCIAL CLASSIFICATIONS**

### **CASMIN**

The CASMIN (Comparative Analysis of Social Mobility in Industrial Nations) scale has been developed in the 1970s as a framework to measure patterns of social mobility, both intra- as well as inter-generational mobility (Brauns et al., 2013). CASMIN is designed to permit cross-national comparisons, and has been successfully used in large-scale comparative projects. CASMIN measures can be also be deployed in national level analyses although at the current time this approach is not widely used.

CASMIN is said to distinguish between both the hierarchical level of education in terms of differences in curricula, as well as the differences between general and vocational types of education. Three general levels of education refer to both primary (level 1) and secondary (level 2) initial education as well as tertiary education (level 3). Education is perceived as leading to a vocational qualification in knowledge and skills acquired are for practical use in the labour market in specific occupations. Especially level 2c which refers to the completion of secondary education makes the distinction between general or vocational education. However, CASMIN is often criticized for not having been updated in recent years, and to have lost track of more current changes in education systems.

### **Erikson-Goldthorpe scheme**

The Erikson-Goldthorpe scheme categorizes people into a social class system and has been largely developed by sociologist John Goldthorpe. The scheme has been used in research worldwide and is one of the leading frameworks in the field of social mobility and social class analysis. After years of development, now it has yielded the standard eleven-fold Goldthorpe class scheme, consisting of seven levels, shown as follows (as discussed by Marshall & Scott, 2009):

- I. Higher-grade professionals, administrators, and officials; managers in large industrial establishments; large proprietors
- II. Lower-grade professionals, administrators, and officials; higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employees
- IIIa. Routine non-manual employees, higher grade (administration and commerce)
- IIIb. Routine non-manual employees, lower grade (sales and services)
- Iva. Small proprietors, artisans, etc., with employees
- IVb. Small proprietors, artisans, etc., without employees
- IVc. Farmers and smallholders; other self-employed workers in primary production
- V. Lower-grade technicians; supervisors of manual workers
- VI. Skilled manual workers
- VIIa. Semi-skilled and unskilled manual workers (not in agriculture, etc.)

## VIIb. Agricultural and other workers in primary production

### **Index of Economic, Social and Cultural Status (ESCS)**

The Index of Economic, Social and Cultural Status (ESCS), along with the Education Gini Coefficient, is a measurement of class in education (Bray et al., 2014). This instrument is particularly used in PISA and takes into account the highest level of education of a student's parents, the parent's occupations, and the amenities available to the student at home – including whether they have a quiet place to study, a desk, a dictionary, a computer etc (ibid).

The scale used to measure students' ESCS is from -3 to 3, with -3 to 0 indicating a socio-economically disadvantaged background, and 0 to 3 indicating a socio-economically advantaged background (Department of Education, 2009). In 2009, the OECD average scores for ESCS were -1.5 to 1.5, with England showing above average levels of ESCS.

### **International Standard Classification of Education (ISCED)**

The International Standard Classification of Education (ISCED) is a standard framework which helps to compare education statistics. Because the structure and content of education curricula are different from country to country, making comparison of education systems among countries would be difficult for policymakers. It can also be difficult to measure progress according to national and international goals (UNESCO Institute for Statistics, 2014).

ISCED was developed by UNESCO in 1970s and in order to catch up new development in education systems, this framework is updated occasionally, e.g. in 2011 where ISCED was revised from 0-6 to 0-8 broad categories (UNESCO, 2012). ISCED has been internationally developed and formally adopted by the General Conference of UNESCO Member States. ISCED, a reference classification, is used to organise education programmes and relevant qualifications using two dimensions: education levels and education fields. The levels of education now thus range from level 0 to level 8, from the level of pre-primary education to doctor of equivalent level. The duration of each level is different. For example, the common duration of level 3, upper secondary education is 3 years, but is also varies from 2 to 5 year (UNESCO, 2012).

The current levels of ISCED are:

ISCED level 0 – Early childhood education

ISCED level 5 – Short-cycle tertiary education

ISCED level 1 – Primary education

ISCED level 6 – Bachelor's or equivalent level

ISCED level 2 – Lower secondary education

ISCED level 7 – Master's or equivalent level

ISCED level 3 – Upper secondary education

ISCED level 8 – Doctoral or equivalent level

ISCED level 4 – Post-secondary non-tertiary education

## **International Standard Classification of Occupations**

The International Standard Classification of Occupations, also known as ISCO, is an internationally recognised hierarchical classification of all jobs in the world developed by experts from many countries and agencies (ILO, 2016). The latest version of this list –the ISCO-08 is comprised of 436 units groups containing 130 minor groups, 43 sub-major groups and 10 major groups. Examples of major groups are ‘managers’, ‘technicians and associate professionals’, and ‘elementary occupations’. Occupations are assigned to groups based on similarities with skill level and specialisation necessary for each job. Major groups are also subdivided by sub-major and minor groups of occupations (ILO, 2012). Such an internationally-recognised classification system has implications for comparative analysis studies as standard definitions for occupations can be found regardless of the countries involved. This is not only easier for both researchers and scholars to classify and understand different types of jobs, but also allows for greater ease of comparability across countries.

The 10 major groups of ISCO, as defined by the ILO (2016) are:

1 Managers	6 Skilled agricultural, forestry and fishery workers
2 Professionals	7 Craft and related trades workers
3 Technicians and associate professionals	8 Plant and machine operators, and assemblers
4 Clerical support workers	9 Elementary occupations
5 Service and sales workers	0 Armed forces occupations

## **Social Stratification**

The concept of social stratification is to be located in the interdisciplinary discourse around social inequality. Social stratification has been expanded during the last few decades from being primarily a subject of sociological studies concerned with social inequalities emerging from poverty, towards a more complex and differentiated idea of social distinction (see Grusky, et.al., 2000, preface).

Today, social stratification is perceived as a broader issue with widespread consequences on several levels; it is acknowledged to not only have a financial origin, but rather to stand in close relation with racial or gender based forms of social inequality and occupational segregation. Therefore, research into the topic is focused on negative individual, societal or economical outcomes of social stratification as well as the compatibility of human rights and practices of social distinction prevalent throughout global society (see *ibid.*, pp.2f.).

Educational research into social stratification has often regarded education as a factor of maintaining the influence of social-economic or racial origin and gender on social inequalities by reproducing the prevalent social structures. (see Bourdieu, 2008)



## RESEARCH TERMS

### **Aggregated data**

Data which are combined from several measurements are aggregated data. In many cases, aggregate data are combined data from a wide range of sources, but aggregate data can also represent summative data for dissemination purposes, instead of making all underlying micro level data available. Going back from macro level to micro level data can be labelled by the term 'disaggregation'. Aggregated data are useful to monitor trends over time, to reveal patterns etcetera (Concepts, 2015). In fact, aggregated data are frequently used in education policy, e.g. in the Education at a Glance reports published by the OECD. This is thus an example of how aggregated data can contribute to policy improvement (Bray, Adamson & Mason, 2014). Aggregate data are often available for the public, while micro-data are usually only available for a select groups of people, such as researchers working on projects for which more detailed analyses are needed.

### **Case-oriented comparative research**

Case-oriented methods in comparative research are primarily used to identify invariant relationships and are more likely to draw on qualitative research approaches. They are oriented towards a comprehensive analysis and thus focus on the whole 'picture' of the cases under study, instead of focusing on separate variables. This research strategy works with relatively small sets of cases, often a limited number of countries which are then compared. The focus is thus not to explain variance, as is the case in variable-oriented approaches, think e.g. about applying regression analysis to model whether a set of predictors can explain the variance in a given dependent variable (Ragin, 1987, p. 42). Furthermore, '*case-oriented methods often stimulate the development of new substantive theories*' (Ragin, 1987, p. 44).

### **Cluster analysis**

Cluster analysis is a statistical technique which organises data into structures of different types. Items inside a cluster have higher degree of similarity between them than with items outside the cluster. Different clusters can be made using different variables. For example Esping-Andersen clustered countries in Europe according to their levels of decommodification and stratification. A way of demonstrating relations between clusters and their members graphically is called "hierarchical tree analysis". Cluster analysis can be useful when researchers do not have firm indications of group membership and want to explore these in the initial stages of the research, e.g. when constructing new typologies (Dell, 2013).

### **Cronbach Alpha**

Cronbach Alpha is a statistical measurement to evaluate the reliability of scales (Conelly, 2011). In social research, scales are often used to measure abstract concepts, such as compassion, friendliness or empathy – and are indeed a common test to undertake in psychometric research.

Developing reliable scales is complex because every scale consists of a set of subscales which contribute to the measurement of the overarching abstract concept. Cronbach Alpha can give some indication of the internal consistency of the scales and subscales. This means that it tests if all subscale measure a single attribute or construct.

### **Cross-national comparisons**

Cross-national comparisons explore the convergence and divergence of events or processes among different nations. In comparative education analyses, cross-national comparison is the second level in the geographic/locational dimension” of the Bray and Thomas (1995) cube. The term “nation” is considered as the synonym of the term “country” in some cross-national comparison studies (Bray, et al., 2014). In cross-national comparison, the country is the major unit of analysis. In fact, the country level is the geographical level most used in comparative education research. Cross-national comparisons can help to increase our understanding of the relationship between education and society (Bray, et al., 2014).

### **Durkheim’s Research Logic**

Durkheim’s research logic is very much a ‘variable-oriented’ approach to comparative and international education research, interested in relationships between variables in research, such as, for example, the effect ‘household income’ may have on ‘educational attainment’. As a result of this attention to ‘variables’, research conducted under this framework is mostly quantitative in nature, using statistical analytical tools to attempt to establish facts and relationships which can then be applied to wider educational contexts (della Porta, 2008). Such research requires a large number of respondents (N), reducing individual participants to numbers, rather than focussing on them as something of interest in themselves as is done in Weber’s ‘case-oriented’ approach. The different stances taken and beliefs held by these two research logics mirror the continuous debates surrounding ‘quantitative’ vs. ‘qualitative’ research and therefore each approach has its own merits and weaknesses. As yet, in comparative and international education studies, a quantitative approach –often following Durkheim’s research logic- remains the most popular.

### **Intra-national**

The term intra-national in comparative education refers to comparisons made within the one single nation state. While the term international refers to comparisons being made with

other nations or between nations, the entities of comparison within intra-national comparative research are located within the same nation (Bray et al., 2014). Intra-national research can be undertaken when nation states consist of different geographical entities with different educational systems, e.g. comparing secondary schooling in England and Scotland within the nation state the United Kingdom (UK), or conducting a similar comparison between Flanders and Wallonia in Belgium. Although located in the same nation, investigating differences between the systems can equally lead to engagement in policy borrowing and learning among those responsible for education in the different regions. In the context of the UK, Raffe and Byrne (2005) referred to 'home international comparisons', comparing the 14-19 curriculum within Wales, Scotland and England.

### **Method of Agreement**

Put simply, the Method of Agreement, developed by John Stuart Mill starts from the following logic: *'If two or more instances of the phenomenon under investigation have only one circumstance in common, the circumstance in which alone all the instances agree, is the cause (or effect) of the given phenomenon'* (Mill, 1843, p. 454). E.g. if two very different countries with high literacy rates are very different except having a publicly funded library system, than that's the cause (or effect) of the literacy rate. While the method of agreement seems easy to understand in the first place, we have to be careful that it does not lead to oversimplification of explaining differences between countries or other units in comparative research (Ragin, 2014).

### **Method of Difference**

This term, along with 'Method of Agreement' was developed by J.S. Mill. Cartwright. The theory has been described as: *"locate differences in the probability of a selected outcome (O) with and without the treatment/intervention (T) across two groups that have identical distributions for all factors casually relevant to the outcome"* (2010:260). In other words, a study using this theory aims to establish causal links between a treatment and an effect, similar to that of controlled trials. If the outcomes between the two groups are different, then this result may be reasonably attributed to the treatment/intervention.

### **Most Different Systems Design**

The most different systems design (MDSD) is a comparative strategy that *'takes subjects with different variables within them and tries to figure out why the outcomes between them are similar in the end'* (Lord, 2011). Its' logic of selecting cases and research is exactly opposite that of the most similar systems design. Researchers select cases that seem very different on a number of dimensions, although the outcome variable or topic under investigation is similar (Anckar, 2008).

### **Most Similar Systems Design**

The most similar system design (MSSD) consists of comparing very similar cases which only differ (ideally) with regard to one variable. The MSSD is an important tool in comparative analysis because it compares similar subjects and takes into account potential differences when trying to evaluate for a particular result.

For example: If we compare three countries A, B and C, and these countries have similar historical backgrounds, demographics, economics, etc., and one country has a marked difference in another area (for example, spending on public libraries and literacy rates) then the analysis shows us that all the independent variables have been taken into account, and only the dependent variable (spending on public libraries) is responsible for whatever positive or negative externality exists.

The main short coming of MSSD is that comparisons between countries are typically difficult. However, MSSD can be applied in smaller settings, particularly between localities at the national level.

### **Multilevel Analysis**

Multilevel analysis, according to McNess (2004), is *“a process of constant progressive focussing, in which information was filtered through its global and national context in order to illuminate local priorities and individual classroom practice”* (p. 318). Considering *“the complex reality of educational phenomena”* (p. 10), multilevel analysis is essential in arriving at *“balanced and comprehensive understanding”* (Bray et al., 2014, p. 10). Multilevel analysis in fact breaks down the different levels of analysis. E.g. in comparative education research, we could distinguish between (1) countries, (2) educational institutions, (3) classrooms within these educational institutions and (4) individual pupils. Analyses not taking into account these levels would explore the variation between individual pupils, but not so between the other levels. In fact, the geographical/locational dimensions in the Bray and Thomas cube are an example of a multilevel structure, starting from world regions going down to lower levels of individuals.

### **‘Nested’ Data**

Nested data are data that are characterized by a hierarchical or multilevel structure, that is, are organized at more than one level: e.g. classroom in schools, or schools in countries. Relating to its multilevel structure, one way to analyze nested data is multilevel modeling, as O’Dwyer and Parker (2014) suggested. Nested data are not only increasingly prevalent in nature sciences, but also in social sciences, such as education (Matsueda and Drakulich, 2015). Nested data are ideal to perform multilevel modelling understanding the contribution to variance at different levels of the entire system – e.g. individual pupils, classrooms, schools and cities.

### **The Bray and Thomas Cube**

The Bray and Thomas Cube, first put forward in Bray and Thomas (1995), was developed in response to criticism that previous comparative analysis in education was unbalanced due to a focus on comparing education only across world regions and countries. Bray and Thomas believed this international focus was too narrow and that considerations should be made for an *intra*-national focus -the differences between states, districts, schools, classrooms and individuals. Therefore, they developed the 'cube' as a model to facilitate multilevel analysis, which contained three axis, each with 7 levels, to identify the characteristics of subjects before beginning comparative analysis: *Geographical/Locational Levels* includes 'World regions/Continents' at level 1, before narrowing down to 'Individuals' at level 7; *Aspects of Education and of Society* covers e.g. 'Curriculum', 'Political Change', and 'Labour Market'; and *Nonlocational Demographic Groups* considers e.g. 'Ethnic Groups', 'Age Groups', and 'Entire Population'. Bray and Thomas argue that the cube allows researchers to identify the particular characteristics of their subjects, thereby leading to a fuller and more comprehensive understanding of phenomena.

The cube as proposed by Thomas and Bray still remains a popular tool for researchers involved in comparative analysis (Bray et al., 2014), while other researchers, such as Manzon and Areepattamannil (2014) have sought to develop it further. Manzon and Areepattamannil propose an additional three faces for the cube, which challenge researchers to consider *Disciplinary Methods*, *Research Methods*, and *Implications* in their comparative analysis in education research.

### **Weber's research logic**

Weber's research logic is opposed to that of Durkheim as it is generally concerned with understanding complexity instead of generalisation (della Porta, 2008). It thus represents a research logic mainly drawing on qualitative methods, and thus not on statistical computations. Within Weber's research logic, narratives are central, not the static patterns of variables. It is thus more common to follow a case-oriented than a variable-oriented approach within the Weberian research tradition.

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