

TOWARDS AN UNDERSTANDING OF EDUCATIONAL INDICATORS

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## TOWARDS AN UNDERSTANDING OF EDUCATIONAL INDICATORS

International Organizations (IOs) are becoming increasingly influential in educational policy making at the national level. In education, the range of these organizations' activities are many and diverse and include providing educational loans and grants, presenting education policy advice, creating tests and comparable educational data, developing and sponsoring projects and programs, and circulating information and instructing interested parties on how to use this information through meetings and conferences. Central to these tasks is the creation and dissemination of educational indicators. It is the purpose of this paper to introduce the concept of indicators, explain their history, demonstrate the work of IOs within the creation of indicators, and propose one theory toward explaining the increased use of indicators within IOs.

In order to facilitate this understanding, the current paper first attempts to define indicators. This section provides a literature review of various definitions and suggests how to critically expand some dominant understandings of indicators. The paper then moves to a brief history of the social and educational indicator movement. This will allow for a better understanding of where these indicators are placed in time and their connection to economic policy knowledge and utility. Additionally, this paper will describe who I reason are the five major actors in the area of global educational indicators. These organizations play an important role in promoting indicators as a dominant and valid representation of educational systems. Further, the motivations for IOs to collect indicators and promote them as valid sources of understanding are diverse and many.

While not an exhaustive account, the motivations to collect and disseminate indicators include a desire for comparative information, an aspiration to establish benchmarks, and an ambition to become the sole collectors of information. This list collectively suggests a culture of performativity as described by Lyotard (1984). Therefore, this paper will finish with a discussion of performativity, which I feel is a dominant motivation behind the sharp increase in leading IOs' engagement in the creation of indicators. Through Lyotard's critique of performativity, I explore possible

underlying reasons for the dominant position of indicators as global educational policy knowledge and the risks associated with this limited view of knowledge. With an increasing demand for the explanation of social systems such as education through a set of quantifiable indicators, it is important for the educational community to understand why this is happening, who is promoting it, and what are some of the problems with it. In educational policy the prediction of Burnstein, Oaks, and Guiton (1992) that, “what is measured is likely to become what matters” (p. 410) may have come to pass. This paper will suggest that some very influential actors in the global educational policy community may now control what is measured and therefore have influence over what matters in education.

### Defining Indicators

Defining an indicator can be a difficult and daunting task. In the most basic terms, an indicator is that which directs attention to a phenomenon or object. There has been much discussion in the literature in an attempt to define indicators (Johnston, 1981; Land & Spillerman, 1975; Greaney & Kellaghan, 1996; Owen, Hodgkinson & Tuijnman, 1995; Shavelson et al. 1997; Cave, Hanney, Henkel & Kogan, 1997). The following points distill this literature:

1. Indicators make general comments;
2. An indicator's value expresses a quantity;
3. Indicators can only be classified by statistics when there is a standard or criterion; against which the indicator can be judged;
4. Indicators describe conditions that can be improved;
5. Indicators' values are time specific;
6. Indicators are often understood as a basic unit in theory development.

Although this is a worthwhile initial line of reasoning for understanding indicators, more critical points should be stated in order to gain better insight into indicators. These include:

1. Indicators are constructed for a specific purpose;
2. Indicators encompass underlying assumptions;

3. Indicators are simply one source of understanding a larger issue;
4. Indicators are often based on statistics, which may contain error.

Though this list can become large, the point is that indicators are intended to aid in understanding phenomenon, not to be the phenomenon.

Greaney and Kellaghan (1996) pointed out that educational indicators are comprised, either entirely or of a combination, of inputs, processes, and outputs (p. 4). They describe inputs as items available to the educational system—for example, books, number of teachers, number of schools, and communities. Processes are the ways in which educational systems use these resources that are expressed in “curricular and institutional activities” (p. 4). Finally, outputs are what a school attempts to achieve. These are the indicators that are developed by large-scale assessment but are also collected through questionnaires for students, teachers, and parents. For example, output characteristics include the obvious cognitive measures but they also include indicators such as attitudes of participants as well as their interests and values.

Though the field of education does not agree upon a universally accepted indicator to measure the state of a country’s educational system in the same way that Gross Domestic Product (GDP) does for a country’s economic system, there are a variety of indicators that attempt to describe educational systems in general. For example, UNICEF (2002), has developed an indicator that represents educational disadvantage by country. UNICEF defines the indicator as representing, “the relative success or failure of each country in preparing its young people for life and work in the 21st century” (p. 5). This specific indicator uses a collection of differing indicators to represent educational disadvantage. The indicator averages five measures to include

The percentage of children scoring below a fixed international benchmark in surveys of: reading literacy of 15 year-olds (lower threshold for PISA literacy level 2); math and science literacy of 15 year-olds (lower quartile of all children in OECD countries in PISA 2000), math and science 8th-grade achievement [median of all children in all countries in TIMSS 1999]. (UNICEF, 2002, p. 3)

In a very basic sense, the above example describes an indicator that is comprised of indicators—in this case output indicators. PISA and Third International Mathematics

and Science Study (TIMSS) scores are designed to indicate workforce and curriculum knowledge respectively. UNICEF has attempted to use an aggregation of these indicators as a proxy for representing educational disadvantage. However, caution needs to be used when allowing such indicators into policy debates. First, this indicator is based on a very high level of abstraction and normative assumptions. Secondly, the data used is aggregated at the national level and then compared, which leaves room for misinterpretation. Finally, the indicators are often represented in a league table that invites a number of technical and ethical concerns. As Briscoe (2005) suggested, “league tables and star ratings can be particularly misleading and demotivating, as they tend to make everybody except the ‘league champions’ look and feel like failures” (p. 246).

Indicators direct attention to a subject or object. As in the example above, an indicator can be comprised of a collection of indicators or it may simply include one statistic. However difficult they are to define, they represent an important part of modern day policy debate and formation. As quantitative sources of information continue to gain ground as *the* dominant source of global policy knowledge, there is a need to understand what an indicator is and what assumptions underlie it. Although the use of indicators dates back much earlier, it is useful to start with the social indicators movement of the 1960s and then examine how this history is intertwined with the growth of international educational indicators.

### The Origins of the Social Indicator Movement

The social indicator movement of the 1960s is couched in the positivists’ conception of knowledge and knowledge use that stresses the need for quantifiable data to measure social phenomenon. Ines (1990) argued for a scientific model of knowledge that is “the principal way in which we understand and prescribe for the use of knowledge in policy” (p. 3). She further suggested that what counts as knowledge in the scientific method is “explicit information processing, supportive of identifiable decisions” such as statistics, theories, and findings of formal research and analysis (p. 3). Understanding policy issues while only utilizing this small type of knowledge obviously ignores a large portion of reality.

Further codifying the positivistic precepts of policy, governance will generally not transpire until the processes of measuring the issue can occur. Governmental bodies prefer and, in most instances demand, concrete measurement so that they can demonstrate progress. As Lyotard (1984) discussed in the advantages of performativity there is an inherent “production of proof” that is somewhat persuasive and quite pragmatic. However, current dominant governance demands that identifying a problem is based on not simply existing knowledge, but existing knowledge that can be reliably measured over time. Therefore, if progress cannot be measured, institutions are unwilling to take action, concentrating rather on issues that can be proved through a set of measurable indicators.

Indicators, therefore, become a proxy for answering the question of what policies are to be developed. If measurement is not taking place or is unlikely, then there is an absence of ‘legitimate’ policy knowledge. Without the knowledge able to address the policy, justifiable action is not warranted. What exists as policy knowledge, therefore, becomes the tool to choose which issues will be acknowledged. For example, two of the most prominent global educational programs, Education for All (EFA) and the Millennium Development Goals (MDG), cite educational statistics as their main burden of proof of progress.

The movement toward the need for quantitative policy knowledge has led to the large expansion of social indicators, and, relevant to our discussion, educational indicators. The realization of interconnectedness among nation states along with pressures from IOs has led to a desire to compare educational systems. Capitalizing on the growing desire for these indicators as well as the growing technological possibilities of obtaining indicators, IOs have created a space where they are the experts of educational indicator collection, solidifying their position as global policy knowledge players. As Stone (2002) concluded, “Control over knowledge and information has become an important component of policy making. The status and prestige associated with expertise, high professional training and authoritative knowledge regarding a particular problem is politically empowering and provides varying degrees of political access for individual experts consulted or co-opted into policy making” (p. 2). Though organizations such as the OECD and UNESCO do not make policy but rather ‘suggest’

policy, their political access as controllers of global policy knowledge strengthens their influence.

Indicators can be constructed and used in a wide variety of situations and for an even wider variety of purposes. Indicators' values, however, are time specific in that they were created to answer a specific question posed at a specific time. This begs the question of not only why is the indicated object or situation being discussed, but more specifically and perhaps more telling, what is being used to discuss the object or situation? It is understandable that a society would pose the question 'how good is our educational system?' However, the more relevant inquiry is how do we understand what is 'good education.' Fortunately, or unfortunately—depending on one's philosophical stance—a finite set of quantifiable indicators is currently the standard for judging global educational systems. Those entities who dictate the definitions and collection practices of these indicators strongly influence the way in which we discuss our educational systems from the global to the local levels. The following review of the history of international educational indicators shows us how IOs appear to have become the sole designers of these indicators.

### Evolving Educational Indicators

In education a global concern for the collection and dissemination of educational indicators has existed as early as 1853. For example, education was one of the principal spheres of interest during the International Statistics Congress (1853) in Brussels. However, due to a vast array of collection and reliability issues, the initial attempts to collect comparative data were fruitless. Not until 1929 did The International Bureau of Education (IBE) successfully create, disseminate, and receive surveys from 26 countries that provided data on pedagogy in normal schools, school self-management, and the influence of books on children's education (Heyneman, 1999). However, it would be six years until the First International Yearbook of Education was published in 1935. The significance of this yearbook was not its statistical prowess; rather, it was the first proper attempt at revealing education statistics to the public. This yearbook encompassed country reports on their own educational systems but did not provide any comparative

tables. The main reason for this lack of comparison was that the information was simply not comparable.

In 1937, the global community would see its first publication of comparative educational statistics. According to Heyneman (1999)

[I]n 1937, the first comparative tables appeared covering the number of primary and secondary schools, students, and teachers. This was the first official display of comparative education statistics, and represents the world's first successful attempt to overcome the natural reluctance to compromise on each nation's different definition of a 'school', 'teacher' and a 'pupil.' (p. 66)

Post World War II saw the next significant development in educational indicators. In fact, it can be argued that the desire to measure modern educational systems cross-nationally is rooted in the reconstruction efforts of post World War II. The financial resources resulting from both the Marshall Plan and the Bretton Woods Accord demanded types of accountability not yet known to the international community. With the formation of vast numbers of IOs and large monetary expenditures on educational systems, there was a growing need to reveal the state of educational systems cross-nationally. As IOs' aspirations and functions morphed over time, the collection of cross-national policy relevant information became a major aspect of their work.

More recent advancements in educational indicators are embedded in a broader social indicator movement that arose during the early 1960s. The term "social indicator" is used to denote a social statistic that is supposed to have some significance for the quality of life of an individual or society (Michalos, 2004, p 29). Social indicators' growth and popularity during the 1960s was couched in the success of the economic indicators' ability to aid policy makers in their prediction of economic phenomenon. Land (1983) pointed out, "In the early 1960s, economists, using indicators from the National Income and Product Accounts along with econometric models, were able to suggest economic policies (e.g. tax cuts) that had the intended result of expanding the gross national product (GNP) by about the expected amount. These successes suggested to social scientists that an analogous set of "social" indicators might be similarly used in the manipulation of social policy" (p. 3). Though social indicators were seen as a means



to monitor the impacts of social policies; they were and are deeply connected to the economic indicator movement.

As it became apparent that economic indicators were unable to completely explain and predict reliable economic and social phenomenon, social indicators were relied upon to fill some of the gaps. Land (1983) argued, “the more successful economic indicators became, the more obvious were their limitations as measures of general social welfare or well-being” (p. 3). Social indicators were thought to provide the missing space in the explanation of major economic shifts as well as to aid policy makers in the construction of social policy. Furthermore, social indicators were seen as a means to measure the social impacts of economic expenditures and policy. Fittingly, interest in developing and collecting social indicators by economic organizations such as the OECD and World Bank arose at the same time as the social indicator movement.

The early 1970s saw an explosion in the establishment of social indicator systems. In the U.S., the National Science Foundation funded social indicator projects (e.g. General Social Survey and National Crime Survey); while internationally, the OECD and UN were creating large databases to store international social indicators. Furthermore, the academic community recognized the importance of this movement and in 1974 launched the international journal *Social Indicators Research* (Smith & Baker, 2001). Surprisingly, the global neoliberal movement of small government during the 1980s (specifically in the U.S. and U.K.) truly affected the funding of social indicator selection. Contrary to the current neoliberal and neo-conservative movement of policy decisions based largely on quantifiable terms, the 1980s saw deep cuts in federal funding of the social indicator movement (Land, 2000). Similarly, the same governments that were cutting their own collection of indicators were also slashing funding to UNESCO, which was the most prominent international organization tasked with the collection of social indicators. Consequently, there are large lags in both the quality and quantity of social indicators since their inception in the 1960s. Each IO responded differently to the lack of national funding for indicator collection. For example, although UNESCO found it financially unfeasible to collect a large number of quality statistics through the late 70s and 80s, the OECD created a space in the global community as an emerging leader of indicator collection. The following section attempts to briefly review the recent history of

educational indicators through a discussion of the organizations that collect and disseminate them.

#### Understanding International Educational Indicators Today<sup>1</sup>

In the 1970s, UNESCO created the International Standard Classification of Education (ISCED) (see UNESCO, 1997) to serve “as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally” (UNESCO, 2004, p. 1). The move to create the ISCED by UNESCO can be seen as serving two purposes. First, the creation of the ISCED illustrates the concern that educational statistics were beginning to vary and were therefore not comparable. If the educational community was to have any hope of creating a large set of comparable indicators, a set of standards was needed. Secondly, the ISCED can be seen as an attempt for UNESCO to solidify their space as the dictators of how educational indicators were to be collected and reported. UNESCO was losing respect in the international community as the leaders in educational indicator collection and the ISCED was a standard that if followed, would firmly establish a UNESCO presence in all education indicator collection. However, very few organizations and countries followed ISCED76. The failure to follow the suggestion in ISCED76 were both political and practical; however, UNESCO’s failure to gather inputs from outside agencies when creating the guidelines can be seen as perhaps the major obstacle in the documents failure to converge educational indicators into comparable variables.

With the poor state of educational indicators and very few organizations and nations abiding by ISCED76, the standards were updated in 1997 in order to further facilitate the international compilation and comparison of education statistics while taking into account the changing global atmosphere. According to UNESCO (2004), ISCED97 “provides an integrated and consistent statistical framework for the collection and reporting of internationally comparable education statistics” (p. 4). The framework that UNESCO provides in the updated version has been adopted by most IOs as a guide to be used when requesting comparable educational data from countries. In fact,

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<sup>1</sup> For a more in-depth discussion on this topic see Smith & Baker (2001), upon which this section is largely based.

UNESCO worked with the OECD and Eurostat in the creation of ISCED97. According to the OECD (2005), “the OECD Secretariat worked closely with both Eurostat and UNESCO to ensure that ISCED-97 could be implemented in a uniform manner across all countries” (p. 2). During the formation of ISCED97 the OECD mandated four stipulations, which UNESCO included in the document.<sup>2</sup> However, the collaboration between UNESCO and the OECD on educational indicators did not discontinue after the project and the OECD’s influence on UNESCO’s educational statistics currently continues to grow.

ISCED97, in theory, allows for participating organizations to share and compare similar education data. In reality the data that is being collected by each organization differs and is often difficult to compare. However, there is collaboration between organizations that collect and create indicators. In fact, collaboration is so strong that three of the major IOs in the indicator field have created a joint project named the UOE (UIS, OECD, Eurostat) to collect indicators in select countries. Besides these three organizations there are two other organizations that participate in the funding and warehousing of national educational statistics: IEA and the World Bank. The following is an outline of the work of these five organizations. Only through an understanding of each of these organization’s roles in educational indicator collection can we appreciate for what purpose educational indicators are created.

#### *Rise and Fall of UNESCO’s Early Indicator Work*

With the backing of the United States, UNESCO established a statistical division and became the “premier education statistics institution in the 1950s and kept it at a peak of leadership in the arena well into the 1960s” (Heyneman, 1999, p 67). This status allowed UNESCO to set the international standards of educational data collection. However, setting the standards and actually accomplishing the task proved to be two

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<sup>2</sup> The stipulations OECD advocated were: 1) the level concept should be defined on the basis of the content of the underlying education activities and operationalised on the basis of multiple auxiliary criteria; 2) the uni-dimension ladder system of ISCED(1976) should be replaced by a flexible multi-dimensional taxonomy; 3) the coverage of ISCED should be expanded in order to better capture the higher levels of education, in particular the domains of continuing education and training outside institutional settings; and 4) the revised ISCED should have an empirical foundation, reflecting the complexities and structures of national educational systems (UNESCO, 1997, p. 9).

different things. By the early 1980s, the quality of educational statistical data collected by UNESCO had greatly eroded (Heyneman 1999; Puryear, 1995). Heyneman (1993) observed that the quality of educational statistics was so poor during this time that the majority of statistics in the 1980s were less accurate than in the 1960s, even given technological advancements.

Smith and Baker (2001) asserted, “Although as many as 175 countries regularly reported information on their education system to UNESCO in the 1980s and 1990s, much of the data reported was widely considered unreliable” (p. 148). However, given the enormous task, lack of funding, and Cold War politics, the inability of UNESCO to adequately collect and disseminate global educational statistics cannot be placed solely on the shoulders of UNESCO. Jones (1998) explains that in the first few years UNESCO “could not afford its view of itself” (p. 37), and without adequate world funding for indicator collection, UNESCO has often failed at keeping adequate and valid educational indicators.

During UNESCO’s time of turmoil, the organization continued to produce educational statistics and reports. With an organization that suffered major cuts in both budget and statistical personnel—from 51 in 1984 to 32 in 1997—UNESCO researchers compiled the data collected from all 175 UNESCO member countries. Once the data questionnaires were returned from each country the data were “entered into the database of UNESCO’s statistical services in order to allow storage, calculation, verification, correction, estimation and dissemination of statistics and indicators. For verification and analysis, data are compared with other official sources of data such as national statistical yearbooks; moreover its coherence is tested with time series and demographic and economic data” (Cussó & D’Amico, 2005, p. 202). Where data are found to be inconsistent countries are asked to resubmit findings. These statistics are then reported by UNESCO in a variety of ways to include electronic as well as publications. UNESCO’s major statistical publications are the *Statistical Yearbook* (1963-1999), *Global Education Digest* (2000-present), as well as series such as the *Statistical Research and Studies* (SRS), *STE Statistical Issues*, *World Education Report*, and other specific studies when commissioned (Cussó & D’Amico, 2001, Heyneman 1999). However, as noted by Smith and Baker (2001), due to the poor state of UNESCO statistics during the

1990s the majority of the *World Education Reports* statistics base “many of its analyses and conclusions on education statistics collected by agencies other than UNESCO” (p. 148). The inability of UNESCO to rely on their own data in their own reports perhaps is the best illustration of the quality of their statistics.

However, the late 1990s saw major strides to improve educational data at UNESCO. As UN agencies such as the World Bank and IMF increased their work in education, UNESCO’s mandate to collect and report educational statistics for UN agencies rose in importance. In 1996 the World Bank sponsored the International Program for the Improvement of Educational Outcomes that funneled a portion of the program’s funding into restructuring UNESCO’s statistical system. In addition to increasing funding to UNESCO’s statistical department the financial support was to aid UNESCO “in establishing an autonomous institute of education statistics” (Heyneman, 1999, p. 72). The UNESCO Institute for Statistics (UIS) was created as a semi-autonomous agency and moved from the UNESCO Paris headquarters to Montreal, Canada. This move provided a sense of autonomy for the UIS, which aided in its restructuring.

Since the turn of the century, the UIS has increased funding in educational statistical data collection and has entered two key projects: Education For All (EFA), and the World Education Indicator (WEI) project. EFA originated in 2000 out of the Dakar educational talks and has set numerous goals, the most prominent of which is to achieve universal primary education by the year 2015. In order to monitor progress of EFA, the UIS has been tasked with compiling the data for the yearly progress reports as well as creating and updating questionnaires to better monitor progress. This is a daunting task given that in 1998 there were still 71 countries without a measure of net educational enrollment and that world population attending schools had exploded from 142 million in 1960 to over a billion today (World Bank, 2006). This role has added funding to the UIS and, perhaps more importantly it has added purpose and world legitimacy.

#### *IEA: Initiating International Educational Assessment*

The International Association for the Evaluation of Educational Achievement (IEA) began in the late 1950s with a group of mainly academics. Their goal was to assess educational systems cross-nationally in order to compare results. In 1965, 12

countries participated in the First International Mathematics Study (FIMS). Although somewhat successful, the data was difficult to interpret and was found not to be reliable. However, the Second International Mathematics Study (SIMS) gained much more recognition both in the international community and in the U.S. SIMS results were the primary justification for the Nation at Risk report, which had a large impact on the U.S. educational system, as well as how the U.S. viewed itself in relation to other nations. SIMS solidified a space in the area of international assessment for the IEA and guaranteed a close connection between the organization and the U.S. in both funding and world legitimization.

In 1995, the IEA completed the TIMSS, the largest international assessment to date. The assessment consisted of nearly 45 countries and included five grade levels. The results from TIMSS were widely distributed and were largely used as justification for math and science educational reform in the U.S. as well as other parts of the world (Heyneman, 1999). More recently, the IEA has administered updated versions of TIMSS, which changed its name to Trends in Mathematics and Science Study, and in the most recent 2007 study 60 countries participated. Expanding on TIMSS, IEA collected data on reading literacy in 2001 and 2006. Under the name Progress in Reading Literacy Study (PIRLS), the IEA administers reading and literacy tests to over 60 countries. Overall, since its inception in the 1950s the IEA has produced 14 major international assessments covering a range of topics to include, civics, technology, reading, math, and language.

The IEA's contribution to international assessment is twofold. To begin, they were the first organization to legitimately organize and attempt to administer cross-national assessment, which places them as historical experts in the field of international educational assessment. Secondly, they continue to use cutting edge techniques in collecting data, which enables them to amass information from more sources and compare that data across a large number of countries (Smith & Baker, 2001). However, as other organizations such as the OECD have entered the area of international assessment the IEA has found increased competition in the field of international assessment. While both assessments claim that they measure different constructs—TIMSS measures curriculum knowledge while PISA measures work force knowledge—it

seems that it will be increasingly difficult to convince countries to participate in both studies due to issues of cost in developing countries and over-testing in industrialized countries.

*The OECD: Mediating Educational Knowledge*

The Organisation for Economic Co-operation and Development (OECD) is an IO that plays a highly significant role in promoting market based thinking in education, not only within its own member countries, but also around the world. Founded in 1961, the OECD grew out of the Marshall Plan and superseded the Organization for European Economic Cooperation (OEEC). The 16 original countries that formed OEEC shared a common interest in the economic reconstruction of Europe after the devastation of World War II. Today, the OECD's brief is much broader and is concerned with both economic and social policy, including education. Its membership has extended to 30 mostly developed countries that produce two thirds of the world's goods and services. Unlike the World Bank and to some extent UNESCO, the OECD does not dispense money but rather concentrates its resources on data collection useful for comparative policy analysis and on investigating and disseminating policy ideas.

The OECD's perspective on education has always been informed by versions of neoliberalism and human capital theory (see Henry et al. 2001). Through this ideology education is viewed as a major contributor to economic development of the individual as well as of the nation. The OECD has insisted upon the role education must play in producing skilled human resources considered necessary for economic growth. Over the last decade, this general sentiment has been associated with the OECD's focus on the requirements of a knowledge economy. A new human capital theory has emerged that is concerned with individual enterprise within a globalized economy. The emphasis has been on a view of education that facilitates the global movement of capital, while it benefits the individual. Such an education stresses that a highly skilled, mobile, and flexible workforce is necessary for nations to succeed within the new knowledge economy.

Central to the OECD's perspective on reform is the preference for increased competition and market based disciplines. Linked to this view of reform is the importance the OECD now attaches to the development of indicators. As early as the

1970s the OECD attempted to report comparable educational indicators; however, it took until the late 1980s for an acceptable system to emerge. This newly created cross-national comparable indicator project was strongly backed by the United States and set the framework for the Unit for Education Statistics and Indicators (Bottani & Tuijnman, 1994). Since the creation of the Unit for Education Statistics and Indicators in 1994, the OECD has increasingly produced a large amount of comparative data that now constitutes the bulk of its work in education.

The Unit produces an annual publication, *Education at a Glance*, together with an analytical supplement which comments in greater detail on selected themes of key importance to member countries. Data are collected in three areas of interest: the demographic, economic and social context of education; resources and school processes; and outcomes of education. While other indicators derived from this data are based on programs the OECD administers, such as the Program for International Student Assessment (PISA), a three-yearly survey of 15-year-old students in select industrialized countries, designed to measure skills the OECD deems essential for students to be able to fully participate in society. Finally, as PISA gains in popularity (57 countries in 2006) it can be assumed that *Education at a Glance* will phase out the use of TIMSS data. This will provide the OECD with more autonomy when selecting the indicators it wishes to produce and report in *Education at a Glance*.

The OECD also manages the International Indicators of Education Systems (INES) Project. The INES Project began in 1988 “in response to national policy makers’ desire for information that would allow them to compare the performance of their education systems with those of other countries and thus better assess and monitor the effectiveness and evolution of their education systems” (NCES, 2006, online). However, the desire of countries to specifically understand educational systems was embodied by a larger dissatisfaction of the quality of educational indicators in both nations and IOs. Bottani (1996), observed, “[d]ecision makers in several countries required the means to compare the performance of their education systems with those of other countries, to better assess the effectiveness of their education systems, and to monitor their evolution” (p. 279).



The OECD in many respects has become the *expert* organization in the collection and dissemination of indicators, especially educational market-based indicators. This is shown in both the OECD's role in the World Education Indicator (WEI) project as well as the growth of PISA. While the OECD continues to improve their work on educational indicators, their work truly functions on two levels. First it assists member countries and others to clarify and compare their own policy positions, helping them to administer the public accountability of educational systems. Secondly, it simultaneously draws countries into a single comparative field that pivots around certain normative assumptions about educational provision and performance. In this way, the OECD is no longer simply a forum for policy discussion but a major international mediator of educational knowledge—a policy actor in its own right promoting a particular conception of education and its relationship to social and economic development.

*Eurostat: Collecting for Europe*

Similar to the OECD, the European Union (EU) has its origins as an economic organization. This differs drastically from UNESCO, which originates out of a purely educational set of ideals. As the EU continues to expand and move into the space of a super-nation state, the scope of the issues the EU has to manage has expanded to include issues of education. Today the EU is composed of 25 nations with four more candidate countries awaiting acceptance into the union. Eurostat is tasked with the role of collecting reliable and comparable data from each EU country and standardizing data collection in candidate countries. On 10 March 1958, Memorandum No 1 announced that from the beginning of March 1958 an external statistical service had been created and on 11 June 1959, it was renamed the Statistical Office of the European Communities (SOEC). SOEC continues to be the official name even though the common nomenclature of Eurostat has been used since the mid-1970s to refer to the organization (De Michelis & Chantrine, 2003).

Two major agendas become clear when analyzing the descriptions of the work statisticians are tasked with in the education unit of Eurostat: coordination with UNESCO and the OECD to produce the annual publication *Education Across Europe* as well as other topic based publications, and data collection on life long learning (Eurostat, 2004). Obviously, coordination between the organizations is paramount given that the OECD

collects data for all its member countries and Eurostat only collects data for the remaining few. However, equally telling is Eurostat's emphasis on life long learning. Life long learning has been and continues to be a major agenda in the OECD's educational policy work. In fact, through a neoliberal ideology, OECD has popularized life long learning in the educational community. The large number of statisticians within Eurostat collecting data on this topic bolsters the argument that there is a great deal of cooperation between OECD and Eurostat in the field of educational indicators. With the EU's roots secured in the field of neoliberal free trade, a view of education as human capital is present within the organization and the close collaboration with the OECD explains much of Eurostat's, and, to a larger extent, the EU's agenda in education.

*World Bank: Holding the Purse*

The World Bank, along with the International Monetary Fund (IMF), was established at Bretton Woods as part of the post-World War II international financial architecture. This system was meant to avoid future world wars by ensuring an open international trading system and global financial stability. The Bank was designed to ensure reasonable loans for countries with little capital. Fundamentally committed to open trade, the bank initially emphasized loans to build public infrastructure—railways, roads, ports, power plants, and communication facilities. Today, the Bank is concerned with international development and the reduction of poverty throughout the world. However, the World Bank continues its commitment to free trade as well as a neoliberal philosophy on development.

Following this free market philosophy, the World Bank has made a commitment to education by introducing education as one of five corporate priorities in the Bank's overall assistance strategy to assist countries in reducing poverty (World Bank, 2005). Accordingly, Jones and Coleman (2005) asserted, "much of the World Bank's prominence in multilateral education stems from the scale of its lending in educational development" (p. 94). Furthermore, in economically developing nations, the World Bank has played a large role in coaxing countries into compiling national statistics. McNeely (1995) observed, "[c]ountries have indicated that they began compilation of national accounts statistics not because of any perceived domestic use, but because of the requirement to do so by donors of external aid, such as the World Bank" (p. 102). As the

largest external funder of education, the World Bank's role in statistical compilation becomes clear as one of the catalysts of the educational indicator movement.

The World Development Indicators (WDI) publication is the World Bank's premier annual compilation of data about development (World Bank, 1998). The 2006 WDI includes more than 900 indicators in over 80 tables organized in 6 sections: World View, People, Environment, Economy, States and Markets, and Global Links. While the World Bank does not collect education data, it reports this data in the WDI. The World Bank is also mandated by the UN constitution to use and report educational statistics collected by the UIS. Therefore, the bank is very interested in accurate data collection on which to base the effects of its loans and grants. As argued above, political organizations are hard sought to expend resources on issues that cannot quantitatively show improvement.

The World Bank has therefore been involved not only in educational development and statistical work in nations but also in statistical development work in IOs. The WEI project is a prime example of this phenomenon. After years of faltering statistical collection, the World Bank took it upon itself to fund a project in which the OECD and UIS would collect educational indicators for the countries to which the majority of World Bank funding went. Initially the OECD was tasked with constructing the program due to their ability to collect high quality human capital oriented indicators. The OECD was then funded to instruct UIS in the collection of these indicators and UIS subsequently received this funding stream. In 2004, the World Bank funding for WEI project accounted for nearly \$1.5 million (or nearly 20%) of UIS's budget (UNESCO, 2004). Given that the entire budget of all UIS's projects which include education, social, and cultural statistics of all member 191 member states amounted to approximately \$7.7 million, there is little doubt that the World Bank influences educational indicator collection.

In terms of funding, creation and collection of international indicators, it appears that IOs hold a monopoly. IO's do, however, yield (if slightly) to national pressure. For instance, these organizations have responded to some nations' demands for indicators that could be benchmarked. In a similar conciliatory gesture, IOs persuaded other nations that benchmarking their educational systems is important. Each organization, however, has

fallen into a specific role within educational indicator collection. They have effectively carved out a nearly unique space in the field; however, as each organization's influence grows, they are beginning to encroach on each other's territory. For example, the OECD now provides international assessments for a range of countries until recently only assessed by the IEA. The range of motivations for these organizations to collect and disseminate indicators are diverse and numerous and are worth further exploration. The following discussion of performativity may provide one approach for understanding the history of indicators, the role they play, and why IOs are finding them an important task that merits the level of involvement recently seen in certain IOs.

#### Indicators: Promoting a Culture of Performativity

In education, and more broadly the social sciences, indicators do more than simply direct our attention to a phenomenon. They often take a life of their own and become the narrative. Indicators become the truth of policy discussions and without them we are unable to convince society of the merits of any educational project. Lyotard's (1984) critique of performativity and discussion of postmodernism provides us with a tool to understand how and why educational indicators exist in the state they do today. Through an understanding of performativity we can gain a glimpse of how the formation and existence of educational indicators influence and help form educational policy. When discussing the notion of knowledge in a postmodern society Roberts (1998) argued, "the old notion that knowledge and pedagogy are inextricably linked has been replaced by a new view of knowledge as a *commodity*" (online). Commodification allows for the ease of measurement through the production of indicators as well as the construction of efficient and utilitarian policy knowledge.

Modern educational indicators can be viewed as what Lyotard (1984) labels the 'technological criterion,' which defines the most efficient input/output ratio of education. While in performativity knowledge has become the central force of production, the regulators of this knowledge are in fact the holders of power. Power remains in the hands of those with power—economic and political leaders—while other groups who are not as privileged are denied the right of expressing their opinions and their forms of knowledge. Educational indicators embody the knowledge that realizes power. Lyotard contended,

“For it appears in its most complete form, that of reversion, revealing that knowledge and power are simply two sides of the same question: who decides what knowledge is, and who knows what needs to be decided?” (p. 9). Constructing comparable educational indicators has allowed IOs an opportunity to define education, thus garnering power in the field as a result of becoming the experts of what needs to be decided.

To Lyotard, knowledge is *not* simply the known pronunciation of the unknown. The most valid and useful discoveries often work outside the strictly defined knowledge games that are popularized. Unfortunately, current dominant theory ignores the existence of this discovery. In the field of education, indicators exclude certain ideas from educational policy and research while including a select few—particularly those ideas that lend themselves well to quantitative methods of measurement. This selective inclusion is advantageous to authoritative decision makers and it effectively suppresses the voice of much social science and qualitative research. In a global arena, the choice to exclude is made for reasons perceived as practical; however, it arrogantly ignores a wealth of suitable research that would work outside quantitatively defined knowledge. Measuring the state of world primary education through three indicators as seen in the United Nations Millennium Project (2006) embodies this objective *ceteris paribus* brand of research. Additionally, the process of selective inclusion (and massive exclusion) dominates modern economic thought. It is no surprise that an economist (Jeffrey Sachs) heads the project.

Indicators are beginning to direct the conversation of global educational discourse because they are emerging as the only narrative that is used to justify decisions. Indicators construct a narrative into an input/output equation. They limit our understanding of education to a strict set of terms that define what is *known* and allow for no speculation on the knowledge of the *unknown*. For example, the accountability movement initiated by No Child Left Behind in the U.S. utilizes indicators collected through high stakes testing to define the state of education. The indicators are the sole source of information used in decision-making and, according to Linn (2005), do a poor job of aligning themselves to the actual standards set by the state. Indicators, therefore, have become *the* comprehensive story to educational decision makers in the U.S.

Indicators, rather than standards, define education, making these all-encompassing indicators their own hegemonic narrative.

What legitimates knowledge in performativity is how well it performs, or enables society to perform. To Lyotard, in a computerized society, knowledge is legitimated through the capitalistic notion of efficiency. Lyotard acknowledges an argument that perhaps all neoliberal policy makers understand and exploit. Though a long passage it deserves to be cited in full:

It cannot be denied that there is persuasive force in the idea that context control and domination are inherently better than their absence. The performativity criterion has its “advantages.” It excludes in principle adherence to a metaphysical discourse; it requires the renunciation of fables; it demands clear minds and cold wills; it replaces the definition of essences with the calculation of interactions; it makes the “players” assume responsibility not only for the statements they propose, but also for the rules to which they submit those statements in order to render them acceptable. It brings the pragmatic functions of knowledge clearly to light, to the extent that they seem to relate to the criterion of efficiency: the pragmatics of argumentation, of the production of proof, of the transmission of learning, and of the apprenticeship of the imagination. (p. 62)

The advantages of performativity are exploited by IOs to create educational indicators. For example, indicators renounce fables with statistical proofs, they assume objectivity, and they hold national leaders accountable for their actions through longitudinal comparison. Indicators in many ways embody the advantages of performativity.

Educational indicators have become an efficient “truth” that can be ranked and legitimated. Indicators hold countries accountable and allow nations to answer the obvious question “how are we doing?” Indicators also become the only acceptable way for state and world actors to answer such questions and to legitimize themselves accordingly. Indicators and, more aptly, the creators of indicators do this by defining educational knowledge in a computerized set of terms. We as a global society have become reliant on these indicators and often pander to the measurement process in order to achieve favorable results; however, indicators simply define education in a fixed set of ways. We must understand that indicators provide the data creating an educational

narrative and that by allowing them to do so indicators, not citizens, define education. As we discuss the origins of indicator projects we must also keep in mind that indicators are playing an increasingly important role in defining global policy knowledge. It is through Lyotard's notion of performativity and its definition of knowledge that we recognize the importance of understanding indicators. Information provided by indicators is often utilized as the dominant form of policy knowledge; however, information and knowledge are different and this difference deserves some attention.

Psacharopoulos (1995) and many policy-oriented documents mistakenly assume that the terms 'knowledge' and 'information' are interchangeable. While entering an in-depth conversation on the debates between knowledge and information is not in the scope of this paper, I would like to make some generalizations to simply introduce that there exists a distinction between these concepts. Peters (2002) explained that in traditional analytical philosophy, knowledge has to meet three conditions: "a belief condition, a truth condition and a justification condition" (p. 98).<sup>3</sup> While Peters contended that this Platonic definition of knowledge is a bit problematic, in that it is highly individualistic and therefore cannot accrue collective notions of intelligence, he suggested "it does allow us to distinguish 'knowledge' from 'information': information considered as data transmitted from a 'sender' to a 'receiver' does not necessarily have to satisfy the belief, truth, or justification condition" (p. 98). These conditions separate information from knowledge, because what counts as information does not need to satisfy criteria of truth, belief or justification. That is, information that is false is still information. In the realm of indicator development and use we can construct additional divisions for these concepts that may allow for a more in-depth conversation of indicator development.

While the differences between knowledge and information can be subtle due to their intrinsic interrelatedness, in the context of this analysis a distinction needs to be made. Indicators are typically packaged and presented as policy knowledge; however delineating knowledge versus information is critical. Leadbeater (1999) engaged the differences between these two concepts and distinguished between knowledge and

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<sup>3</sup> In the true justified belief account for A to know that P is true:

- (i) A must believe that P is true;
- (ii) P must be true;
- (iii) A must have good reason for believing that P is true.

information in his conversation of technology and the economy. His analysis of these two concepts is equally useful in understanding indicators. Leadbeater asserted

Information provides a quantitative measure of shape, pattern or order. It can be instantiated in material form or in energy (as in a modulated radio wave), and so information is objective. It can be moved around in space, and stored over time in a physical substrate. Thus it can be communicated directly between, and is easily shared by, agents. Knowledge, in contrast, is subjective. It is an especially secure set of beliefs which integrates abstractions from our experience into a capacity for effective action. (p. 79)

Indicators are often represented as information to quell worries of subjectivity, but in the same documents, indicators are proposed as knowledge promoting a dominant set of beliefs.

Similarly, Castells (2003) claimed, “information is an organized data set, formatted for communication purposes, on the basis of some principle of classification.” He then pointed out, “knowledge is the set of statements that result from applying the human mind to understanding an observable phenomenon, and is obtained by using the scientific procedures determined as scientific by the scientific community in a given historical context” (p. 136). Although Castells’ explanation of knowledge and his over-concentration on scientific knowledge is troubling, his analysis is useful to understanding the distinction between information and knowledge. Indicators are information in that they consist of an organized data set. Furthermore, indicators, like information, are useless without interpretation, yet they rely on interpretation to exist. Indicators, however, are often disguised as the dominant form of policy knowledge in that they are presented as statements of understanding a phenomenon and use scientific procedures codified by the scientific community. In other words, indicators are sold as a fixed form of knowledge with little need for additional interpretation.

In the milieu of indicators, interpretation takes place within data, information, and knowledge, making none value neutral. Policy knowledge differs from information only in that the interpretation from information leads to a theory. However, the point that every level of interpretation requires active interpretation necessitates further examination. Further, while information and knowledge differ, they are linked for the



reason that the symbols we use for communication can be prearranged as information. Stenmark (2002) observed, “Information ... requires knowledge to be created and to be understood” (p. 6). The fact that indicators and the documents that they are presented in are useful does not signify that indicators are knowledge. Indicators need knowledge to be interpreted; hence, indicators are not knowledge but rather information. However, while the distinction between information and knowledge can be argued, many policy recommendations and documents tend to confuse the terms. For example, organizations that create and recommend policy often confuse information and knowledge to the extent that these institutions make no discernment between the concepts (see Peters, 2002 for examples). This confusion of indicators as knowledge allows indicators to be promoted as a *form of policy knowledge* rather than *information that can inform policy*. While these are similar ideas, they contain very different consequences.

Partially due to the confusion above, indicators have become *a* (and possibly *the*) dominant source of knowledge in educational policy making. While indicator collection is often completed by the nation, as will be discussed later, IOs have become the dictators of “what” and “how” data are to be collected. IOs’ situation and power within national educational policymaking is realized through indicators. Lyotard rightly warns us of such structure when he connected the notions of knowledge and government. However, global governance, not simply national governance, defines the knowledge (or indicators) used in global, national, and local, policy decision-making. While resistance to such a restrictive system is imperative, understanding the indicator system is just as important. The eradication of indicators as a form of understanding education should not be the goal. However, indicators provide *only one* source of knowledge that can lead to a narrative and this knowledge should not become the meta-narrative

### Conclusion

No educational indicator exists that can produce models of educational practice that are absolute. However, policy actions tend to rely on educational indicators to efficiently create policy knowledge. For example, in the U.S., educational policy decisions mandated under No Child Left Behind (NCLB) are solely dictated by educational indicators, which are produced by high stakes tests. The complete state of

education, however, cannot be understood through any indicator, regardless of how much information is included in that indicator. The lack of precision, along with the large set of normative assumptions embedded in indicators muddies the waters of accuracy to the degree that future educational predictions are nearly impossible to make. Furthermore, educational indicators are only able to provide a glimpse rather than a definitive view into educational systems. Unfortunately, setting agendas according to what indicators suggest has been codified as a rational and often the only choice.

Educational policy decisions utilize models to predict the effects of education on the well-being of society. While economic theory has suggested that education has positive effects on the overall economy (Mankiw, Romer, & Weil 1992; Psacharopoulos & Patrinos, 2002; Psacharopoulos, G., 1994; Psacharopoulos, G., 1984), the reality of this is unclear. Policy models that incorporate educational indicators attempt to predict a future that is indistinct and impossible to envisage. As we make the turn in society, which mandates that all policy knowledge must provide rational utility, we are forced into a scheme of measuring the utility of policy knowledge. Herein lies the problem. Questions must be posed based on the information at hand, rather than the questions that need to be asked.

The underlying market based assumptions that are the basis for educational indicators views humans as rational, autonomous, utility-maximizing beings. Decisions based in neo-classical economic thought, therefore, demand that assumptions are met. Indicators provide a very efficient and utilitarian way of fostering this understanding. To Lyotard, the important question for postmodern societies is who decides what knowledge is, and perhaps more importantly, who knows what needs to be decided. In educational policy this question is becoming clear. What cannot be quantitatively or efficiently represented is not entertained. Often, in education this results in the absence of difficult to obtain indicators, which frequently coincide with the underprivileged and underrepresented. IOs generate the information they value based on their assumptions.

Lyotard (1984) so aptly observed, “the question of knowledge is now more than ever a question of government” (p. 9). Through educational indicators, IOs create knowledge of society for the governance of society. In education, the presentation of indicators as rational utilitarian tools solidifies their place in a global sphere where

decisions are made based on performativity. Lyotard further asserted that, “scientists, technicians, and instruments are purchased not to find truth, but to augment power” (p. 46). In a global community, IOs are the only organizations able to afford the purchase of educational ‘truths.’ Therefore, they use this power to augment their influence over world affairs. But as in any game or complex story there are never clear power positions. In the milieu of educational indicators, the same appears to be the case.

Through educational indicators a set of ‘truths’ are arguably produced. However, these ‘truths’ are very open to interpretation. As explained in this paper, educational indicators are based in economic theory’s attempt to understand economic phenomenon through a set of definite factors. Therefore, these educational truths are founded upon the economic dogma of utility and rationality. In a policy sense, indicators work under the presumption that human behavior can be modeled through a set of quantifiable factors given that humans are rational and predictable creatures. Rational assumptions allow for efficient models of social behavior furthering the ease of explaining educational systems as a means of benefiting society. However, what is placed into these models is sanctioned by considerations of what can be measured as well as who possesses the resources to measure such things. Select IOs seem well aware that educational policies depend on the information they provide; therefore, the information is key to influencing policy or what Lyotard refers to as ‘knowledge and government.’

Indicators have become the center point of most educational policy debates. They dictate what questions can be asked simply because educational policy knowledge at the global level, and to a large extent at the national and local level, has become synonymous with quantifiable data. In this paper I have used NCLB, MDGs, and EFA as examples; however, any other major educational policy would show similar results. We have approached the point where the legitimacy of a policy question is dictated by the data available to answer it. One cannot simply form a question concerning global educational policy and collect the data from all countries. The capacity and financial resources to complete such a task is out of reach of nearly all policy makers and educational researchers. Therefore, the research and policy community is left with the policy knowledge produced by a select set of organizations who often have a well-defined agenda. The goal of this paper was to assist in setting the framework to understand how

IOs' work in indicators represents collaboration among IOs, why an indicator projects exist, and how IOs' work with indicators reflect a broader movement towards a dominant global policy knowledge.

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