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Towards Media and Information Literacy Indicators



Background Document of the Expert Meeting
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Towards Media and Information Literacy Indicators

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1. Introduction

Developing a Global Framework for a topic as broad and complex as Information Literacy-Media Literacy or, to use UNESCO's appellation, Media and Information Literacy (MIL) Indicators is a daunting task. To address this challenge, a brief overview of the history, background, and global context is needed.

It is fundamental to ensure that all people have the competencies – knowledge, skills, and attitudes – to succeed throughout all stages of the life cycle of both ‘information’ and ‘media,’ and to help people meet their needs, thrive, and improve the quality of their lives.

Media and information literacy begins with the creation of content, based on a collection of raw data. The data may be gleaned from a diverse array of sources, such as written documents, an oral expression of indigenous knowledge, a live news report, a work of art, observations of a live giraffe, or a digital readout from a satellite or medical device. The content produced can take on one form or many.

Many types of content are subsequently managed and organized, perhaps using a formal indexing system or tags determined by individuals (often referred to as folksonomies). For example, photographs and videos of an event may be posted on a website along with identifying information. An individual, upon seeing the site, may add personal information (such as the name of an individual in the video and historical information about the location), thereby enhancing the content. Metadata systems may be used to link to different types of content (e.g., reported news articles and broadcasts or opinion pieces, such as editorials and blogs).

The term ‘content’ can be understood differently, depending on one’s relationship to its production and dissemination. For a producer of information, content may an expression of explicit knowledge, the integrity of which can be protected (e.g. by copyright). For a recipient, content may be the information to answer to a question, a work of art that inspires creative thought, or a map to help find the way to a destination.

Access to, dissemination of, and, most importantly, the capacity for critical evaluation of content are essential to help people select reliable information/data. Providing access to content, such as posting it on a website, is more passive than actively disseminating it in the form of an email, a Tweet, or even a printed flyer. Active dissemination may be needed in cases of emergencies, such as an impending hurricane or a defective children’s product. The process of evaluating information, though complex, is essential to effective decision-making, whether in voting, selecting the best medication, or identifying the best course of action.

Throughout the life cycle, values, ethical reasoning, and critical thinking must be brought into each stage, recognizing that values vary among cultures.

Within the global, multicultural context, the complete set of competencies needed for all stages of the life cycle comprise MIL, including other relevant literacies. This background document provides a framework for the development of concepts (variables) and their corresponding measurements (indicators) to assess MIL competencies within a global context.

This document draws upon extensive previous work, the perspectives of many experts around the world, and numerous discussions at workshops and conferences. Its purpose is threefold. First, it provides key, related, and common elements in defining media and information literacy (MIL) and its learning outcomes. Second, it provides a rationale for a conception of MIL as a collective set of interrelated competencies (knowledge, skills, and abilities) necessary for education today. Finally, it identifies and describes some of the challenges in developing measurable variables and ideas for evaluating the trade-offs in selecting indicators.

The importance of understanding cultural and other important differences must be stressed throughout. Different categories of MIL variables are provided in two tiers: MIL Initiatives within Society and MIL within Formal Education Systems. Supplementary material, including major definitions of media and information literacy and key competencies, along with the tables of the variables are included in the appendices.

The goal of this document is to provide background and an overview of previous work on MIL and to propose a series of variables that can be used in the future to develop specific and measurable indicators*. UNESCO and the authors also hope that this document will encourage further discussion and investigation into this complex and important topic.

* In the recognition of the fact that more work needs to be done in order to elaborate specific and measurable MIL indicators, a term “variables/indicators” is used throughout the document.

1.1. Information, Media, and Citizenship

Information and knowledge have always been critical resources for the survival of human beings and for ensuring sustainable development. Since the dawn of human civilization, in every sphere of human activity, the access to information, the creation and application of new knowledge, and the communication of such knowledge to others have contributed to the evolution of societies and the economic welfare of people. Knowledge about how to do things, how to communicate, and how to work with other people has therefore been regarded, since ancient times, as the most precious ‘wealth’ that humans possess.

In the backdrop of major societal trends and their implications for the future, knowledge and how it is communicated to others will play a central role in shaping economic growth, social development, cultural enrichment, political empowerment, and the consolidation of democratic systems. Information and means of communication (including the Internet) are integral to engaging in democratic processes, building communities, and strengthening civil society. Individuals have access to content and people to meet their fundamental needs, to communicate with others, and to improve the quality of their lives. Media and information are needed for lifelong learning, community development, economic productivity, healthcare, and all aspects of social life.

Independent media and information-sharing across platforms play a vital role in the creation and development of a democratic culture and an active civil society. The mainstream news media in particular have traditionally performed a central function in the working of democracies through the creation of a ‘public sphere’ where issues of importance to the community are discussed and debated, and where information essential to citizen participation in community life is exchanged.

Today, media and information are omnipresent, if not always omnipotent or omniscient. No longer restricted to print and broadcast delivery, news and information are now accessible anywhere, at any time, to billions of people around the globe. Media of all kinds, across all platforms, have become so integrated into modern life that their presence and influence are not always noticeable.

Wielding political, economic, social and cultural power, media and information constitute a powerful force in societies across the world. They are increasingly usurping roles once played by family, community, religion and formal education: not only disseminating information and knowledge, but also shaping values and norms, moulding attitudes and behaviour, and influencing the very process of living. As the late American academic, George Gerbner (1999), pointed out time and again, the stories the media tell – now virtually around the clock and through multiple channels of communication – ‘weave the seamless web of the cultural environment that cultivates most of what we think, what we do, and how we conduct our affairs.’

In addition to mainstream media, information and communication technologies (ICTs) have helped to bring about the growth in blogs, YouTube, Twitter, social networking sites, and other types of content and delivery systems, allowing anyone with access to the Internet to create and disseminate content in many formats. The sharing of news and content by individuals without professional training or expertise in journalism or media – through photographs or videos from a cell phone posted on the Internet, for example – has greatly increased the amount of content in the ‘public sphere,’ making it even more difficult for individuals to sift through and evaluate what they see, hear and read.

On one level, both the mainstream media and these ‘new media’ provide people with information that helps shape their opinions and attitudes and influences their decisions, including political choices. On another, they create forums through which people can exchange ideas, and communicate experiences, opinions, needs and aspirations to other members of society, including political leaders.

The question of whether the mainstream media and informal media, such as blogs, perform all these functions satisfactorily is another issue addressed in the development of MIL indicators, as described below.

1.2. Information and Knowledge Societies

UNESCO promotes the concept of knowledge societies, which are inclusive, pluralistic, equitable and participatory. The concept is based on four major principles: equal access to quality education for all; universal access to information; cultural and linguistic diversity; and freedom of expression.

The information society is an essential building block for the creation of knowledge societies that includes dimensions of social, cultural, economical, political and institutional transformation. It also represents a more pluralistic and developmental perspective. Knowledge is important as a resource not only for economic growth but also for empowering and developing all sectors of society.

The digital revolution in information and communication technologies has created more opportunities for the unrestricted flow of information, ideas, and knowledge, while protecting privacy and intellectual property, than has ever been possible. The proliferation of new technologies, including mobile platforms, together with the Internet, has opened up vast global resources, catalyzing and accelerating economic, political, social, and educational development.

Building on the United Nations Universal Declaration of Human Rights (1948) and in recognition of the fundamental human right to information and communication, during the World Summit on the Information Society, world leaders declared their

Common desire and commitment to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilise and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life...

Yet, while information, knowledge, and the means of communication are now accessible to a magnitude that could not have been imagined just a few decades ago, development across these arenas has varied across nations, regions, and cultures. It is important to recognize the diverse ways knowledge is created and shared in different contexts. For example, in some cultures, indigenous knowledge is often acquired without the presence of media or in the absence of information systems. Information, media, and digital divides are significant and accelerating, and all stakeholders must be included.

Major constraints in many parts of the world and among many sectors of the earth's population are: exclusion from access to information and knowledge available in various formats; limited infrastructure; linguistic divides; and inadequate competencies to participate in the new public sphere. Defining and measuring MIL competencies should be key components of national information policies.

If today's information society, as it moves towards a knowledge societies, is to be people-centred and inclusive, and if it is to help pursue the widely accepted international goals of democracy, equality, equity, sustainable development, and peace, then it must be understood that information can be both traditional and modern, and delivery of information can through person-to-person contact, traditional media, and digital means.

1.3. MIL and Literacies

Literacy has traditionally been described as the ability to read and write, with arithmetical literacy often added to the mix. Those who are 'literate' have a practical command of the alphabet and of the signs and symbols of reading and writing. They also know how to perform simple numeracy tasks. However, broader concepts and aspects of literacy have evolved in response to changing patterns of communication and the demands of the times, especially in the workplace.

For example, a UNESCO Expert Group meeting on Literacy Assessment in 2003 defined literacy in these terms:

Literacy is the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve his or her goals, develop his or her knowledge and potential and participate fully in community and wider society.

Literacy is at present recognized to be a plural and dynamic concept; increasingly literate individuals are those who have the competencies – knowledge, skills and aptitudes – that allow them to both understand and relate to their surroundings in ways more subtle than simply comprehending words or numbers strung together.

Today, literate individuals need to have a critical comprehension of messages, including 'media texts.' They, in effect, must be familiar with what academics recognize as the semantics and semiotics of psycholinguistics.

This 'renewed vision for literacy,' as articulated in the United Nations Literacy Decade (2003–2012) (UNESCO, 2004a), emphasizes the importance of individuals working within their own social contexts and being able to use literacy skills to navigate social change. As UNESCO has noted, the plural notion of literacy underscores the fact that

Literacy is not uniform, but is instead culturally and linguistically and even temporally diverse. It is shaped by social as well as educational institutions: family, community, workplace, religious establishments and the state. Constraints on its acquisition and application lie not simply in the individual, but also in relations and patterns of communication structured by society (UNESCO, 2004b).

Literacy, in effect, is not only dynamic, it is performe situational.

Accordingly, social contexts profoundly shape the evolving understanding and importance of the concept of 'literacy.' As new information and communication technologies proliferate, opening up new possibilities for communication and information, new competencies are required to make effective use of their potential.

However, the state of being literate – no matter what 'genre' of literacy is considered – is not binary: rarely can it be said that one is entirely illiterate or entirely literate. Rather, it is important to consider all literacies on a continuum: individuals are variously literate, demonstrating differing levels and uses of literacy according to their environments and needs.

As the authors of the Global Literacy Challenge (UNESCO, 2008b) have noted:

There is no single notion of literacy as a skill which people possess or not, but multiple literacies. We all engage in both oral and written practices and in learning new literacies at different stages of our lives, for example, the literacy demands of digital technologies. The concept of 'situated literacies' draws attention to how the social, cultural and political context shapes the ways in which people acquire and use literacy.

1.4. Media and Information Literacy (MIL)

Media literacy and information literacy have always been linked, but the greater accessibility of content via the Internet and mobile platforms has meant that those literacies are increasingly intertwined.

Information literacy emphasizes the importance of access to information and the evaluation and use of such information. While for some time information literacy was considered to focus on peer-reviewed and evaluated publications, this is no longer true. The scope of information literacy has been broadened to incorporate all types of information and content. Media literacy emphasizes the ability to understand, evaluate and use media as a leading purveyor and processor, if not producer, of information. It is appropriate, therefore, that in the process of elaboration of the MIL indicators, UNESCO considers information literacy and media literacy together as Information Literacy–Media Literacy or Media Information Literacy (MIL). By doing so, it should be recognized, however, that the challenges in terms of the conceptualisation and definition of MIL are considerable.

Media development (i.e., the development of media-related infrastructure and human resources) supports and sustains a media and information literate society. It builds and maintains a media environment supportive of traditional and new media, open information systems and freedom of expression – all prerequisites for good governance and responsible development.

Media and information systems development, media literacy, and information literacy are, therefore, interdependent and interrelated, and it has become increasingly difficult to distinguish among them. Media and information literacy are essential to empower people with critical knowledge about media functions, information systems, and the content they provide.

2. Rationale and Definitions

Since the development of the media, the Internet, and ICTs, questions have arisen concerning the competencies needed to deal with these rapidly changing phenomena and the rationale behind identifying and teaching these competencies. The approaches have often been fragmentary and isolated from one another.

Some attempts focused on the technologies themselves; others addressed questions of access to content. A smaller, but very important group concentrated on ethical, governance, and developmental issues related to information in the Information Society. Introducing the concept of Information Ethics will require further discussions within the MIL indicators context.

Over the years, in part as a result of UNESCO's programmes and support, these approaches have been linked together, with groups in different specializations working more closely together. A goal of this project is to provide an overarching framework by integrating the thinking of experts from different specializations and disciplines (See Appendix A. Major Definitions). UNESCO's strategy seeks to move from the meaning of the individual terminologies to a unified notion embodying elements of both information literacy and media literacy and conveying the aims, objectives, related elements and learning outcomes of MIL.

2.1. Rationale for MIL

Media and information literacy (MIL) endows individuals with knowledge about the functions of the media and information systems, the conditions under which these functions can be performed, and the ways citizens can both evaluate the quality of content and contribute to it.

Article 19 of the Universal Declaration of Human Rights states that, 'Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers (United Nations, 1948).' MIL equips citizens with the necessary competencies to seek and enjoy the full benefits of this fundamental human right.

MIL also equips individuals and communities of the twenty-first century with the essential competencies required to engage effectively with information and media systems as well as ICT. It also helps them develop critical thinking and lifelong learning skills with which they can become active citizens and participate in society while reflecting ethically throughout the process.

The goal of MIL is to give people the power to use their rights of free expression, to defend their access to information, to evaluate content, to secure their participation in the process of governing, and to help all voices be heard. At its best, MIL teaches the global public to evaluate available information—including that provided by both formal and informal media—about the world's needs; to make sense of the solutions that are on offer; and to be able to communicate and engage with others proportionately and responsibly. MIL, in other words, is a bottom-up idea.

Locally generated projects that focus on education and training to develop people's capacities to create and use both traditional media and new digital resources are especially effective.

Information and media literacy, in short, is a tool that should be seen as an essential part of the individual, community, organizational, social and economic development process. MIL empowers individuals and expands communities that had previously been restricted to governments, companies, and other formal institutions.

Numerous studies, conferences and workshops over the past thirty years have sought to define the scope of MIL. This report provides a brief summary of what many in the field currently understand about information literacy (now considered to incorporate digital literacy) and media literacy. It also sets out a baseline definition of media.

In brief, these definitions are used in the current document:

- Media includes mass media of all kinds, interactive media (e.g., the Internet), different forms of advertising and informal media, such as Twitter, blogs, etc.
- Media literacy is extremely difficult to define and usually includes all stages of the lifecycle of communications using these forms of media.
- Information literacy includes the competencies to be effective in all stages of the lifecycle of documents of all kinds; the capacity to understand the ethical implications of these documents; and the ability to behave in an ethical way throughout the stages.
- Digital literacy, which is an essential and complementary capacity to media and information literacy, refers to the abilities to use ICT effectively and efficiently throughout the communications life-cycle.

Additional, more detailed, definitions are included in Appendix A.

UNESCO's use of the term 'MIL' reflects an attempt to address the different but related conceptions of literacy in the fields of information, media and ICT. In this document, several categories of MIL variables/indicators are introduced. The two major categories of MIL variables/indicators are:

1. Tier 1 variables/indicators to gauge the availability of institutions that nurture and promote MIL in society, and
2. Tier 2 variables/indicators for MIL among teacher-trainers, teachers in training/service, and students (primary and secondary). Both of these tiers are divided into sub-categories as discussed later in this document

UNESCO considers MIL to be a key means of verification for 'Media as a platform for democratic discourse' of UNESCO's Media Development Indicators:

The media, within a prevailing climate of self-regulation and respect for the journalistic profession, reflects and represents the diversity of views and interests in society, including those of marginalized groups. There is a high level of information and media literacy (UNESCO, 2008a).

According to UNESCO's Media and Information Literacy Curriculum for Teachers, multiple – and related – literacies are included in the concept of MIL. They are:

- Computer Literacy
- Digital Literacy

- Freedom of Expression - Freedom of Information Literacy
- Information Literacy
- Internet Literacy
- Library Literacy
- Media Literacy
- News Literacy

The MIL Curriculum for Teachers identifies key elements/outcomes of MIL as below:

Information Literacy¹

Define and articulate information needs	Locate and access information	Assess Information	Organize Information	Ethical use of Information	Communicate information	Use ICTs skills for Information processing
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Media Literacy

Understand the role and functions of media in democratic societies	Understand the conditions under which media can fulfil their functions	Critically evaluate media content in the light of media functions	Engage with media for self-expression and democratic participation,	Skills needed to produce user-generated content	Use of ICTs in this process
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2.2. Definition of MIL

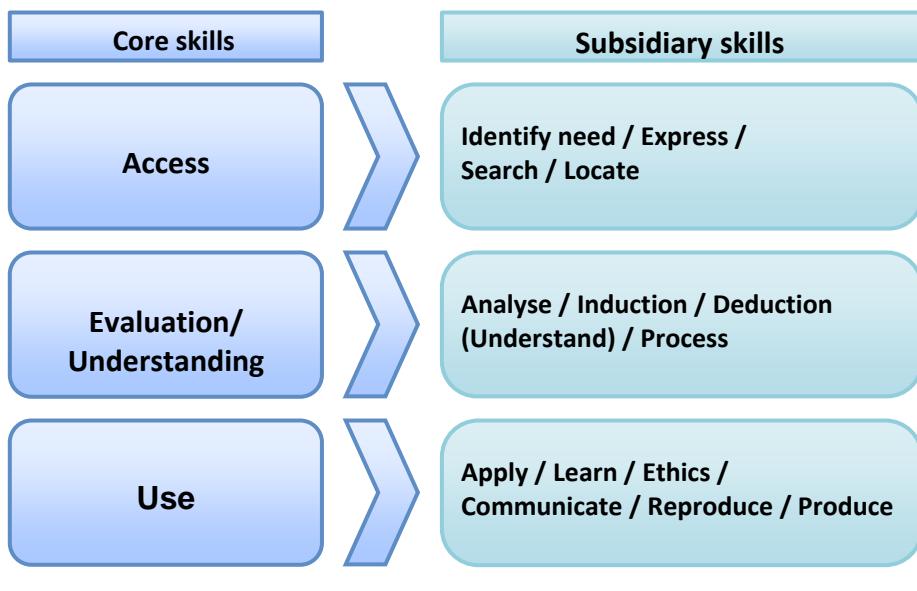
As indicated in the discussions above (and in Appendix A), there is currently no universally accepted definition of media literacy, information literacy, digital literacy, or even of “media” itself. Yet while there are no standard definitions, a number of national and international organisations have posited definitions for each of these three literacies.

In most cases these definitions describe a media-literate person, a digital-literate person or an information-literate person in terms of individual-citizen competencies. This results from the fact that each of these three literacies emerged as “fields” at a distinct moment in time when motivated institutions recognized the need for their publics to gain certain knowledge and skills.

In his draft paper, ‘Conceptual relationships of information literacy and media literacy,’ Jesús Lau (2010) provides background on the conceptual convergence of information and media literacy. Mr Lau states:

¹ Adapted from Ralph Catts and Jesus Lau, 2008.

Figure 1. MIL Competencies (Knowledge, Skills and Attitudes)



Lau, Jesus (2010) *Conceptual Relationship of Information Literacy and Media Literacy*

All aspects of MIL include the concept of information within their definitions, the first more literally than the other. ‘Information literacy empowers people from all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals.’ This definition was crafted by an international group of experts that represented different regions of the world at an IL summit (UNESCO / National Forum on Information Literacy / IFLA (2006). Alexandria Proclamation on Information Literacy and Lifelong Learning).

The term media literacy is, in turn, generally conceptualized as the knowledge and skills individuals need to analyze, evaluate, or produce media messages, according to Martens (2010), who recently completed a fine state of the art review of English language scholarly (peer-reviewed) literature (165 papers) with the terms media literacy and media education. Although it is limited to Anglo-Saxon publications, the review is useful because it outlines evolution of the ML concept and trends.

From these two definitions, one can deduce that media messages, as media expressions, are part of the broader term of information that includes media constructs as well as any other encapsulated knowledge or data in any format, including printed, electronic, digital, images, sound, or realia.

A media-literate or information-literate person is not simply someone who has gained a certain level of knowledge about information content and media, or someone who is able to apply critical thinking skills to the information content and/or media messages. Those elements are components of the broader MIL. But the desired outcome of teaching information and media literacy is to allow individuals who are more knowledgeable to be

empowered to make their own decisions and to be more engaged in civic and economic life: citizens who have moved beyond dependence on ‘knowledge brokers,’ to become ‘knowledge builders,’ according to OECD’s Global Project on Measuring the Progress of Societies (2007).

Some definitions of media, media literacy, information literacy, and digital literacy are provided in Appendix A for background and context. For this framework, the emphasis is on bringing together these different, yet interrelated literacies, into a holistic concept of MIL.

Given that various definitions, including those outlined above, illustrate that the two concepts are compatible in terms of generic concepts, and that contextual focus is the main difference among them, the authors propose that MIL be defined by a set of three primary elements (categories) related to media and information: ACCESS, EVALUATION/UNDERSTANDING and USE.

3. Towards MIL Indicators

With a similar objective to the UNESCO goal of creating media and information policy indicators, the European Association for Viewers’ Interests (EAVI) study on Assessment Criteria for Media Literacy Levels in Europe (EAVI, 2009), commissioned by the European Commission, aspired ‘to clarify and elucidate the conceptual nexus of media [and information] literacy whilst formulating a tool for its measurement.’ For the purpose of the study, indicators were defined as ‘a unit of measurement (drawn from, and informed by, research materials) for the evaluation of data, and the subsequent conceptualization of media [and information] literacy from a holistic perspective.’

According to the EAVI report (2009),

...an indicator is an instrument which provides information about the status and progress of a specific situation, process or condition. They enable simple, straightforward and accessible knowledge regarding specific phenomenon. They may be simple or complex, depending on whether they are a set of specific and precise data or the result of a number of simple indicators gathered together.

The consortium of organizations and experts involved in the study agreed that:

Because some properties appeared to lend themselves better than others to measurement and statistical modelling, any resulting mathematical model would be unsuitable for the reliable analysis of media [and information] literacy. This is because media [and information] literacy is (and needs to be approached as) a dynamic phenomenon, as a process of communicative interaction between different agents in a rapidly developing environment driven by user experience and technological ambition (EAVI, 2009).

It was therefore decided that in addition to the application of a tool for measuring media [and information] literacy across the continent,

a subjective and qualitative element should be introduced, requiring national experts to measure levels of media [and information] literacy nationwide (EAVI, 2009).

Furthermore, according to the consortium (EAVI, 2009),

It is (and will be) through their critical assessment in the application of the tool that this expert knowledge and insight in each territory is (and will be) able to measure appropriately media literacy levels.

It is important to note that if this is true for one (relatively small) continent it is all the more likely to be true across the globe.

The consortium proposed a diverse array of indicators. Some comprise quantitative data obtained from various sources (questionnaires, statistics, etc.), while others are based on the judgment of experts who qualitatively analysed the data. (The consortium has also proposed indicators resulting from combining simple indicators in accordance with mathematical algorithms, which attach a quantitative value to simple indicators.)

3.1. Major Challenges

The challenges are not limited to the previous lack of interest of various stakeholders in tracking such citizen competencies. While the problems of measuring MIL may have initially stemmed from those institutions' un-familiarity with the concepts of media literacy and information literacy – what they are, why they should pay attention to them – this is no longer a major issue.

Now that the value of media literacy, information literacy, other related literacies, and thereby, MIL, has been generally accepted by most policymakers, international organizations, NGOs, the education sector, donors and other stakeholders, the problems of measuring MIL are more firmly related to the cost and difficulty of measuring citizen competencies at all, much less across nations and regions with significantly different governance systems, media development, IT infrastructures, levels of GDP and education.

These measurement problems do not mean, however, that the development of indicators does not have value. Measurement, we believe, will make the concept of MIL more valuable.

In a competitive, performance-driven international environment, measurable indicators will increase the investment of policymakers and other key actors in MIL. Without such guides, resources will be allocated elsewhere; with them, organizations can demonstrate progress toward goals.

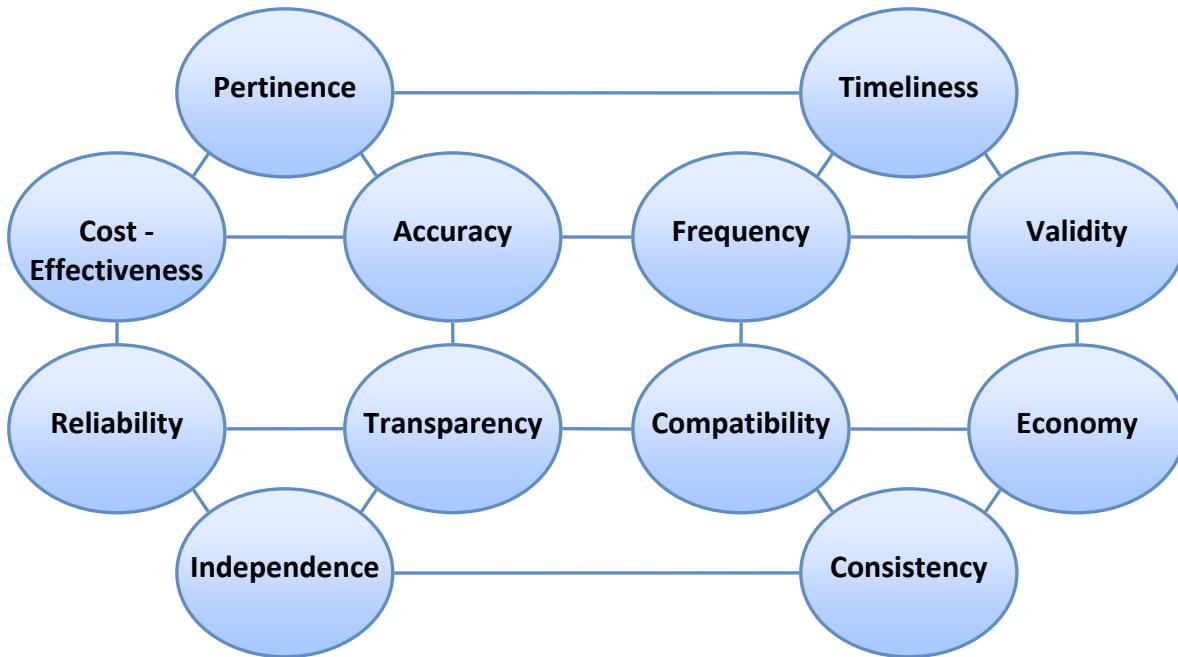
In fact, we have come to believe that precisely because there are such significant measurement problems, the international community needs to better track media and information literacy within countries and across regions. The process of formulating MIL indicators involves the following four major challenges: (i) creating; (ii) applying; (iii) financing; and (iv) constraints of cost and time.

3.1.1. Challenges for Creating Indicators

The quality of potential MIL indicators needs to be assessed according to their validity, reliability, and costs. Among the quality factors that any approach needs to take into account are the twelve listed below, as developed by S. Ellis *et al.* (Catts and Lau, 2008):

- **Pertinence:** the data are relevant to decision-making and the issue to be measured.
- **Timeliness:** the data are made available quickly before they become out-of-date.
- **Accuracy:** the data are correctly calculated and not subject to error.
- **Frequency:** the data collection can be repeated on a regular cycle to measure trends.
- **Cost-Effectiveness:** data collection is not too expensive (few developing countries can afford dedicated surveys of more than top policy priorities).
- **Validity:** the data measure what they are intended to measure.
- **Reliability:** the data are stable, not changing too quickly to be captured.
- **Consistency:** indicators or individual responses do not contradict each other.
- **Economy:** it is preferable to pick the minimum number of indicators necessary in order to cover the maximum extent of the topic. This minimizes the burden of collection on countries.
- **Independence:** indicators should measure different aspects of a topic; they should not be intercorrelated, though some indicators may be related.
- **Transparency:** the sources of data and the construction of indices should be as clear as possible to the ‘reader’.
- **Comparability:** data should be comparable across different cultures and economies.

Figure 2: Twelve principles of indicator development



Based on S. Ellis et al. *International Indicators for the supply access and reception of information, and of ICT skills*. In Towards Information Literacy Indicators, UNESCO: Paris, 2008.

As Catts (2010) notes in UNESCO's Information Literacy Validation Report, the designation of a sufficient or "satisfactory" level of MIL will vary across communities and regions.

Current methods being used for schools and household surveys include:

- Background questionnaires (e.g., LAMP, developed by UIS, UNESCO Institute for Statistics);
- Self-reports of behaviours (e.g., OECD ICT survey; Indonesian version of DHS); and
- Pencil-and-paper tests of competence (e.g., Canadian version of the OECD ALL survey).

While these various forms of household survey contain items that imply information literacy, the items are not content valid as information literacy indicators. In the case of both the background survey and the self-reported behaviours, the items cannot be adequately levelled and there are additional concerns about the consistency of responses between individuals both within and between communities. In the case of the pencil-and-paper competency survey the items do not encompass the information literacy construct because the items do not require respondents to identify the need for information, nor to locate, evaluate and store information.

The measure of what constitutes a sufficient or 'satisfactory' level of MIL will change over time. A change in technological infrastructure, for example, may require a new MIL capacity

from a population. Therefore, the scope of the indicators needs to be defined, whether they will be country-specific, and if so, whether there can be any valid MIL comparisons across countries. This is a concern for strategic planning for resource allocation.

3.1.2. Challenges for Applying Indicators

Not all indicators are equally relevant across populations, which creates challenges for using them in comprehensive analyses. For example, indicators that work well for children may not be appropriate for adults. MIL experts have raised other concerns concerning the application of indicators, including:

- Indicators should track the acquisition of MIL in the formal education system as well as in informal learning environments.
- Indicators may be difficult to apply consistently, not only across regions and countries, but also within countries when there are multiple language groupings, when some populations are mono- or multilingual, or when populations are literate in one language, but not another.
- Indicators may be difficult to apply reliably across varying economic, social, cultural, ethnic, and religious environments. The standards for “sufficient” literacy competence may well differ among those populations due, for example, to the availability of resources and ICT infrastructure (e.g., locations served by community radio may have different literacy needs than those served primarily by print media).
- Indicators may be difficult to apply to mobile populations (e.g., urban-rural migrants) and marginalised groups such as persons with disabilities. A person who demonstrates MIL competence in a rural environment, might exhibit a lower level of competency in an urban community with a more demanding media and information environment.

Policymakers all the way up to the ministerial level may find the tracking of national MIL a useful tool to improve their governance, especially of the education sector.

3.1.3. Challenges Related to Costs and Time Constraints

There are significant cost and administrative advantages to using indicators developed for existing surveys as MIL indicators. But there are concerns (i.e., see UNESCO’s Information Literacy Validation Report, 2010, pp. 13, 26) that these existing indicators may not have content validity for secondary analysis as MIL (or IL or ML, etc.) indicators (See Appendix B). For example, according to the UNESCO report, a 2009 European initiative (EAVI, 2009) to develop a national media literacy survey relies on national statistics to infer individual media

literacy ‘... [and] conflates access and use of ITC with the capacity to evaluate, interpret and transform information into personal knowledge.’ (p. 26).

Current analysis of existing surveys conducted by national, international and multilateral organizations suggests that MIL will be most reliably measured by creating a dedicated household-level survey across UNESCO’s Member Countries (i.e., see UNESCO’s Information Literacy Validation Report, 2010, p. 24). But those experts have noted: ‘The main limitations to this approach are the costs of development and administration. If the costs of development can be achieved there is still the impact of administration costs which are likely to limit the frequency of administration.’

4. Methodology

The purpose of this document is to develop an inclusive list of potential indicators, without eschewing those that may not be best suited for measurement and statistical representations of MIL. The original approach in the draft paper was to include only the indicators that have secondary sources such as statistics or indicators created by other studies. However, after the UNESCO Bangkok Experts’ Meeting, the list was expanded to include more variables for which we have not yet identified appropriate indicators and may prove difficult to measure.

The original list was created by reviewing MIL-relevant documents, surveys, and data collected by local, national, and international organizations. The authors of this report also conducted extensive literature reviews and consulted international experts to obtain their recommended approaches and priorities. The recommendation in this draft is to use indicators that align with and inform desired outcomes. An effort was made to focus on the MIL indicators related to those competencies that are believed to be the most critical, rather than include in the indicator set all possible MIL competencies.

A small set of MIL indicators, based on the suggested variables, would be practical since indicators should be monitored in a cost-effective and timely fashion. This study proposes tracking MIL with a simple set of three main categories that align with OFCOM’s (2010) definition of media literacy: ‘The ability to 1) **ACCESS**, 2) **EVALUATE/UNDERSTAND** and 3) **USE** media and information in a variety of contexts.’¹

¹ In its first 2006 audit of media literacy in the UK, Ofcom looked at eight key elements of media literacy:

1. interest in digital features (TV, radio, internet, mobile phones)
2. awareness of features of interest for those interested in features
3. volume of usage per week
4. breadth of usage
5. competence for tasks of interest
6. level of concern
7. knowledge of industry funding/regulation
8. trust in various platforms as source of news.

Michael Delli Carpini and Scott Keeter, in their 1993 seminal article in the field of measuring knowledge, noted ‘the strong performance of short indices.’ However, the MIL experts’ meeting in Bangkok suggested a holistic and ideal listing of variables, many of which are complex and cannot be measured directly using available data.

A broad array of directly measurable indicators would be necessary for the construction of indices that capture the underlying concept of the variable. Therefore, the variables proposed in the appendices—some of which have clear indicators, others of which do not yet—have to be evaluated with regard to the following considerations:

- Can the concept help illuminate a national capacity and lead toward policy development?
- Can a nation take ownership of this competency?
- Can there be regional (e.g., South-South) policy solutions to enhance MIL acquisition?
- Can this indicator promote progress towards gender equality, socio-economic empowerment, respectful pluralism, etc.?
- Can this indicator be advanced by bilateral and multilateral partnerships, including those across sectors of society (e.g., government, citizen/NGO, international, corporate, etc.)?

Using MIL indicators, one can measure the progress of a specific country toward desired MIL outcomes in order to advise and support policymakers. One can also help governmental and nongovernmental organizations determine where to place their training and educational resources relative to maximize their impact.

5. MIL Indicators Options

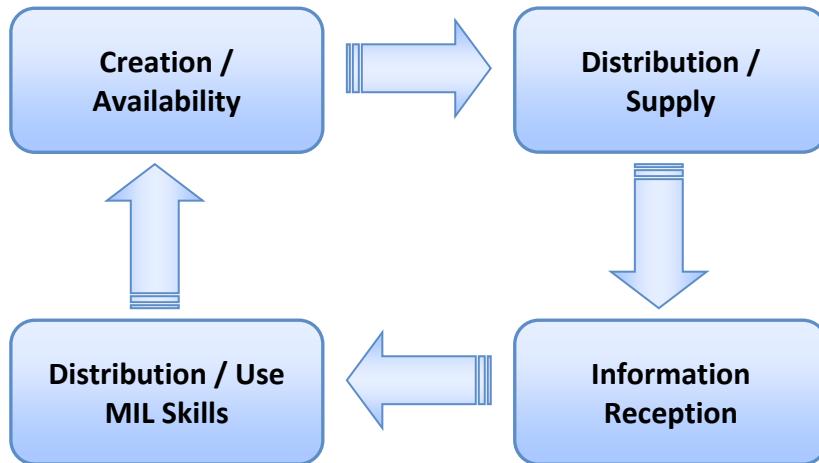
In conclusion, the proposal to develop media and information literacy indicators is to work on two tiers of indicators for the variables recommended in this paper (see Appendix B). The first, Tier 1, is a set of macrostatistical variables that measures MIL activity, according to the information cycle, at the national level. The second, Tier 2, includes a group of variables/indicators measuring individual MIL competencies, where four study alternatives are suggested to UNESCO.

5.1. Tier 1 Set of Variables/Indicators - MIL Initiatives within Society

The Tier 1 set of variables/indicators – MIL initiatives within society—are general items that gauge preparedness at both the policy- and institutional-level for promotion of MIL in society, education and work.

Based on a similar strategy as the Right to Information (RTI) Legislation Rating Methodology (2010), this set includes macrostatistical indicators to measure three of the elements of the media and information cycle in the education sector: creation, distribution and reception (see Figure 3).

Figure 3: Media and Information Cycle



5.2. Tier 2 Set of Variables/Indicators - MIL within Formal Education System

The Tier 2 set of variables/indicators – MIL within the formal education system—measure individual competencies among teacher-trainers; teachers in training/service; and students at primary, secondary and tertiary/university levels. This tier is focused on MIL skills that fall within the Information Use element of the media and information cycle and includes four options to develop MIL indicators (See Figure 3):

1. **Survey.** An independent survey created by UNESCO (See Figure 4) would have the advantage of being tailored to the area of interest—Media and Information Literacy—but it would be costly to create and administer for UNESCO itself and the countries involved. The experiences of four standardized information literacy surveys developed for use in higher education are good examples to evaluate. First, the Project Information Literacy Progress Report: “Truth Be Told” (Eisenberg, 2010), surveys the information-seeking strategies and research difficulties of 8,353 college students from 25 campuses across the United States. A second study on MIL behaviour, “International Information and Media Literacy Survey” that aims to study university MIL behaviour (Horton, 2010), has been proposed for Asia. A third, perhaps the most widely known, is the computer and outcomes-based assessment developed by the Education Testing Service (ETS), the *iCritical Thinking*. This test evolved from the original ICTskills (ETS, 2008), then later changed and named *iSkills™*. The *iCritical Thinking* features real-time, scenario-based tasks that measure an individual's ability to navigate, critically evaluate and understand the wealth of information available through digital technology. Another information literacy instrument developed in the United States by a consortium of library scientists based on the ACRL standards is the Standardized Assessment of Information Literacy Skills (SAILS) (Rumble and Noe, 2009).

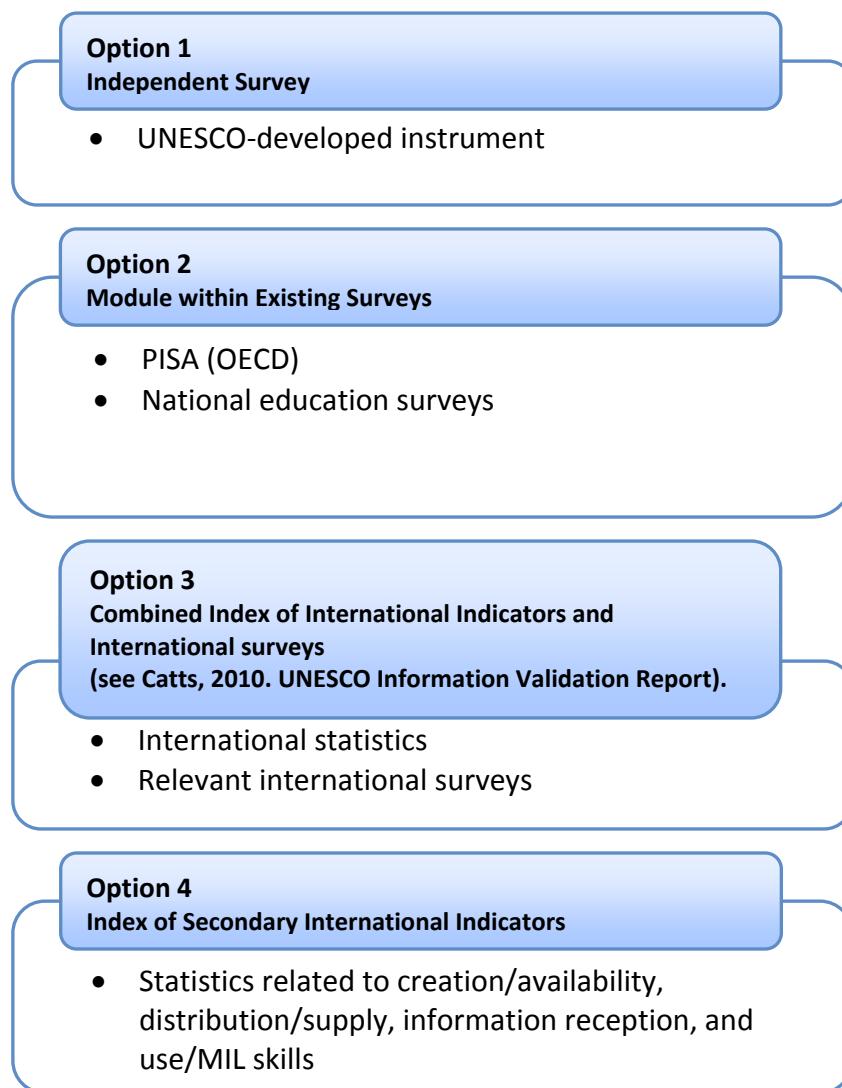
A similar survey, the Information Skills Survey (ISS), was developed in Australia and published by Catts (2005). There is a need to identify similar survey experiences around the world for elementary and secondary levels, where there is even more experience than at the higher education level. The restriction of the MIL indicators to the sphere of education makes the task easier, because this field has been extensively researched.

2. **Module.** The second option is to join forces with other international surveys—such as PISA—or national education assessments. The primary advantage of this strategy is that administering the survey would cost less. The major challenge is that the parent surveys are developed by independent organizations.

National education surveys and assessments done by different countries could also accommodate a MIL module. Examples include the surveys administered by Mexico's CENEVAL, the National Centre of Evaluation for Higher Education (that includes the high school level). CENEVAL's main objective is the design and administration of

assessment instruments for abilities and competencies, as well as the analysis of the results and dissemination of the findings. CENEVAL, a nonprofit organization, administers the National Admission Tests for High School and College (EXANI) and the General Examination Test for Graduates of Higher Education (EGEL), which are given to more than a million students every year. However, the number of countries with such organizations needs to be determined.

Figure 4: Education MIL Indicators – Options



3. **Combined index of secondary international statistics and international surveys.** If resources and time are limited, one can select from the first tier's listed indicators,— i.e., national macro statistics related to the creation, distribution, reception and use of media and information—that are available in most countries. These can be combined with results of international education related surveys, such as PISA instruments.

The use of secondary statistics has the disadvantage of camouflaging country detail that may be necessary to interpret achievements at the national level, especially in countries with less statistical infrastructure. If, as we expect, some nations do not have data for all selected indicators, these measures will have to be dropped.

Macro statistics provide a snapshot of national level activity, and if countries report weak data or fail to report any, it is a strong indicator of their lack of MIL development (Lau, 2007). The option of using related international surveys items, as discussed by Catts (2010), who relied on an expert evaluation panel exercise, is of limited utility, because most surveys do not provide content-valid indicators of information literacy skills, and some ‘conflate access and use of ICT with the capacity to evaluate’ and use information (Catts, 2010).

However, the combination of indicator sources, international statistics and international education related survey results provide an ‘indication’ of what is going on with regard to information literacy across countries.

4. **Index of international secondary statistics.** This option, the last of the four, is a simplistic solution that entails creating an index from international statistics, the same sources that are discussed for Tier 1 and listed in Appendix B. This is a quick- and-easy index that can provide a broad idea of information literacy skills at the international level (Lau, 2006), but it has the same shortcomings as option 3.

6. Proposed Categories of MIL Indicators

The two major categories of MIL indicators proposed in this document are: (i) Tier 1 variables/indicators to gauge availability of institutions that nurture and promote MIL in society, policy-makers, education and work; (ii) Tier 2 variables/indicators for MIL among teacher-trainers, teachers in training/service, and students (primary and secondary) within the educational system.

6.1. Tier 1 Variables/Indicators: Society, Policymakers, Education and Work

Tier 1 proposed variables/indicators gauge the availability of institutions that nurture and promote MIL in society, among policymakers, in education and at workplaces. They are grouped in Category 1: Media and information enabling factors, and Category 2: Media and information availability. The second category is also divided in three subcategories: A. Creation and Availability; B. Distribution and Supply; and C. Information Reception.

The categories were based in part on the work of Ellis *et al.* (Catts and Lau, 2008) and several additional identified variables/indicators (see Appendix B). MIL competencies are included in the ‘Distribution and Use’ phase of the information cycle and are therefore covered in Tier 2.

Category 1	Media and Information Enabling Factors Media and Information Literacy Context	Table 1
Category 2	Media and Information Availability <p>A. Creation and Availability This category includes the things that create media and information, such as newspapers, books, online media, and journals.</p> <p>B. Distribution and Supply This category is defined as the physical infrastructure of a country to deliver media and information to its population, such as radio and television channels and sets, and computer and Internet access.</p> <p>C. Information Reception This category covers the capability of people to receive media and information -- examples include rates of newspaper readership, social networking, television viewing, Internet usage, and library use.</p>	Table 2 Table 3 Table 4

The suggested variables/indicators are a wish list, i.e., the product of a brainstorming exercise. In other words, some of the variables/indicators may not yet have any data sources, especially for Category 1 (MIL Context).

It may also be difficult to identify statistical sources for the combined MIL approach variables/indicators. The number of variables/indicators is not balanced, and there is a need, as stated, to select core ones, according to the availability for most countries, and their reliability (how good they are). Finally, the variables/indicators in Category 2 (MIL Availability) are grouped according to the media and information cycle elements described earlier.

6.2. Tier 2 Variables/Indicators: Teacher-Trainers, Teachers and Students

The Tier 2 variables/indicators for MIL, the fourth phase of the media and information cycle (see figure 3) are proposed for teacher-trainers, teachers in training/service, and

students within the educational (primary, secondary, and tertiary) system. The proposal for Tier 2 is to develop the content of a survey or a module (see Appendix C).

Skills component 1	Access / Retrieval of Media and Information The user accesses media and information effectively and efficiently	Table 5
Skills component 2	Evaluation / Understanding of Media and Information The user evaluates information and critically and competently	Table 6
Skills component 3	Use / Communicate Media and Information This skills component 3 covers three skills components of access and retrieval; evaluation and understanding, and use and communication of media and information literacy	Table 7

Each of these skills components includes a set of variables/indicators, the number of them differ according to the component (See Tables 5, 6, 7). The skills components have been adapted from the Guidelines for Information Literacy for Lifelong Learning of the International Federation of Library Associations and Institutions (IFLA) (Lau, 2007a) that were created with the participation of international experts in the field.

The results of the proposed survey can be combined with secondary international statistics to complement or interpret the results. The elements of the survey could be based on a further review of education media and information literacy related studies.

7. Conclusion and Recommendations

The UK Government published a White Paper titled *A New Future for Communications* 2000 that set out its vision for the future of communications in the digital age and created a new unified regulator, Ofcom (2010). In that White Paper, the British government 'highlighted the importance of creating a media literate population and moved the issue from a purely academic and educational context, into a public policy debate.'

We are now living in the midst of that debate. As the EAVI (2009) report bluntly wrote, 'It may be said that it is no longer an advantage to be media literate; rather it is a debilitating disadvantage not to be.' Indeed, people over the world are appreciably empowered when they are media and information literate.

The measurement of MIL is a must for any country that wishes to promote and develop the knowledge societies of its citizens. UNESCO, as a leading international organization, aims to undertake a MIL study to measure media and information literacy at the international level and create a methodology countries can use to carry out national-level studies themselves.

This Global Framework on MIL indicators, with the feedback of the Bangkok Experts' Meeting that included library, information, ICT and media experts, agreed on the set of MIL competences; an ideal list of variables/indicators to be assessed to learn about MIL national background developments; and the variables for the actual measurement of the MIL competencies.

The group's final recommendation to UNESCO was to create its own survey. However, the decision on the study approach will depend on available resources. The next stage is to develop the indicators for whatever option UNESCO chooses to study MIL.

Appendix A. Major Definitions

This section provides an overview of some of the key definitions related to MIL and competencies, as well as some of the complexities of defining these concepts. It also highlights some concepts related to understanding the importance of broadening perspectives beyond skills to include knowledge and attitudes.

Definition of Media

The definition of ‘media’ has been under debate, with some adopting a very catholic understanding of what media encompasses, and others implying a far narrower subset of actors, often meaning ‘news media.’ This document applies a broad definition of media, such as the one articulated by Nordicom:

Media...are defined as mass media of all kinds, that is, print media (newspapers, journals, books, etc.), audio media (radio, CD, mp3, etc.), audiovisual media (film, television, video/DVD) and so-called interactive or digital media (the Internet, video and computer games, i-pods, etc.). Different forms of advertising are also included in the media (Merlo Flores and Feilitzen, 2007).

As Nordicom (2005) and other researchers have noted, it is also important for researchers to be cognizant of the changing media landscape when they draft indicators. Nordicom’s 2005 Proposal for an International Research Project on Children and Media to Create Indicators for a Media Social Responsibility Index noted:

The rapidly changing media landscape also means an ongoing convergence of the media, e.g., that newspapers, radio, television programmes, electronic games, etc., to an increasing extent are available on-line and that also cell phones are a way into the Internet, ‘the mobile internet.’ Not only are media technologies converging but even to a certain extent the relations between formerly ‘producers’ and ‘users’ (listeners, viewers, readers) who now, at least via different digital platforms, have the possibility to be more interactive, and active, in certain contexts of the media processes. Traditional genre borders of media texts are becoming disintegrated and fluid in many aspects, as well.

Many might argue that electronic games are not really media like newspapers or radio. What is clear is that the distinction between content and carrier is becoming less discernible, as the technologies continue to converge. The introduction of Google TV is just one example of the changing landscape. What is also becoming increasingly evident is the enormous growth of informal media, with the increasing number of blogs, videos on YouTube, Twitter ‘tweets,’ and Facebook posts. It is difficult to distinguish between ‘mainstream’ and other types of media. Now that anyone with access to ICT can produce and disseminate content, even without the education and training of a journalist, for example, the media landscape is becoming increasingly diverse and complex.

Definition of Media Literacy

Across Europe, Asia and the Americas, media literacy has been gaining favour as an academic discipline for over a decade—so much so that governments and schools worldwide are not only actively discussing media literacy as an essential component for the education of today's students, but they are also mandating media literacy courses for primary, secondary and even university-level students. Donor organizations and agencies, both public and private, have also increasingly come to believe in the value of media literacy.

As Alison Bernstein, Vice President of the Ford Foundation, noted:

Given both the opportunities and challenges across the globe, the need for media literacy programs has never been greater.

According to the final report of the Study Assessment Criteria for Media Literacy Levels,

A conclusive universal definition (of media literacy) proved unworkable – as it has done for more than 20 years.

While that is the case, a large consortium of international actors now subscribe to a one-sentence definition similar to those adopted by the British regulatory agency, Ofcom, and by the European Commission. Ofcom's definition of ML, created in response to 'a wide-ranging stakeholder consultation in 2004,' is

the ability to access, understand and create communications in a variety of contexts.

The European Commission's definition of ML, articulated in its Communication on a European approach to media literacy in the digital environment, reads:

Media literacy is generally defined as the ability to access the media, to understand and to critically evaluate different aspects of the media and media contents and to create communications in a variety of contexts.

Equally simply, UNESCO's MIL Curriculum for Teachers outlines the components of ML as follows:

Media Literacy

- Understand the role and functions of media
- Understand the conditions under which media and fulfil their functions
- Critically analyze and evaluate media content
- Use of media for democratic participation, intercultural dialogue and learning
- Produce user-generated content
- ICT and other media skills

Definition of Information Literacy

In 1974, Paul Zurkowski, then president of the Information Industry Association, first introduced the concept of information literacy, saying:

... people trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for using the wide range of information tools as well as primary sources in molding information solutions to their problems.

In the USA, the first White House Conference on Library and Information Services in 1979 identified information literacy as one of its major themes. In the years following this conference, the American Library Association (ALA), developed information literacy competencies for librarians working in school libraries and for those working in institutions of higher education. Also in the USA, activities of the National Commission on Libraries and Information Science (NCLIS), the American Library Association, and others led to a study conducted for the National Forum on Information Literacy (NFIL), a group of representatives from forty-six organizations in the U.S. This study created a comprehensive definition of information literacy as 'the ability to access, evaluate and use information from a variety of sources' and developed a series of outcome measures.

The study expands this definition with a listing of discrete attributes of an information literate person. Using the U.S. National Education Goals of 1990 as a framework, the study developed forty-five outcome measures, such as 'teachers will implement resource based learning in their classrooms' and "the library/media specialist will be an integral part of the instructional program..."'

Several others have developed definitions within a broader context of lifelong learning. For example, the Information Literacy Group at the University of Calgary has created a model incorporating abilities to recognize the need for information and knowing how to access, evaluate, synthesize, and communicate it. Numerous web sites have been created providing tutorials, such as those at Johns Hopkins for medical students or the Teaching Library at the University of California, Berkeley.

At the First International Congress on Ethical, Legal and Societal Aspects of Digital Information," sponsored by UNESCO and held in Monaco, 10-13 March 1997, two papers addressed what they referred to as "Mediacy" in an attempt to bring together the many types of information, media and digital literacies. In one paper, the author (Carbo, 1997) noted that she used the term, Mediacy, as an umbrella for the competencies many of the documents describe, emphasizing the particular importance of

understanding the ethical implications of all of these and ideally, behaving in an ethical way in doing all of these. New knowledge should come out of all of these. This ongoing process is very much dependent on and related to context, culture and tradition and to each individual uniquely... There is no single set of knowledge and

skills for everyone – no common answer or single ideal interface, whether human, print, or electronic... Each medium, and the many new multimedia resources require different knowledge and skills.

The authors of this document, including the author of the 1997 paper cited above, do NOT recommend using the term “Mediacy”. We all agree that we should continue to use UNESCO’s terms. What is important is to understand the important inter-relationships among the types of literacies, and the fact that competencies vary according to the types of content, media, ICT, culture, and context.

In 2005 Markku Niskala, Secretary General of the International Federation of Red Cross and Red Crescent Societies, noted that

People need information as much as water, food, medicine or shelter. Information can save lives, livelihoods and resources. Information bestows power.

Information literacy has been championed at the highest levels over the last decade. As Abdul Waheed Khan, Assistant Director-General for Communication and Information, UNESCO, wrote in his Foreword to UNESCO’s 2008 paper, *Towards Information Literacy Indicators* (p. 5):

The Alexandria Proclamation of 2005 recognizes information literacy as ‘a basic human right in the digital world’ as it empowers individuals ‘in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals’. In a digital world, people require new skills and training in order to participate. The digital divide is much more than a ‘technology access’ divide; without the skills to use the technologies an even greater divide emerges – the information literacy divide. Interestingly this is not a ‘north-south, developed-developing’ issue; it applies to all countries and is more a reflection on the extent to which education systems are – or are not – keeping up with the new information societies.

Historically, at UNESCO, as elsewhere, ‘information literacy’ and ‘digital literacy’ (or, as it has variously been called, ‘digital media literacy’) have been distinct, if overlapping concepts, and their definitions have often been artefacts of the originating institutional sectors that birthed them. Information literacy, of course, predates the use of the phrase, digital literacy, and has been a concept of value not just to international organizations such as UNESCO, or national ministries of education, but consortiums of librarians, such as the ENSIL (European Network for School Libraries and Information Literacy), based in the Netherlands, or the American Association of School Librarians.

According to *Towards Information Literacy Indicators* (p. 7), in UNESCO’s 2008 Information for All Programme (IFAP) adopted the following definition of IL:

Information Literacy is the capacity of people to:

- Recognise their information needs;
- Locate and evaluate the quality of information;
- Store and retrieve information;
- Make effective and ethical use of information, and
- Apply information to create and communicate knowledge.

It is noteworthy that this definition of IL closely parallels the definitions of ML in use by Ofcom and the European Charter – definitions that emphasize the ability to access information, to analyze and evaluate information, and to express and communicate ideas, information and opinions.

Definition of Digital Literacy

The Australian Communications and Media Authority (ACMA) has observed that:

Different definitions of media literacy and digital literacy reflect different policy and educational agendas. For example, advocates of media literacy in educational contexts have tended to underline the importance of critical interpretive skills needed to decipher media content and media messages, whereas contemporary regulatory concern with digital media literacy places relatively more importance on the technical competencies needed to make effective use of digital media services across a range of communications platforms.

Digital literacy (sometimes referred to as computer or ICT literacy) has become an increasingly common catchphrase in the public policy lexicon of in the twenty-first century and gained global recognition in the past several years across regions and governments.

The creation of the Ushahidi platform by Kenyan citizens following the post-election violence in December 2007 and the use of social networks – including Twitter, YouTube and Facebook – by Iranian citizens and ex-patriots following the country's June 2009 elections have heightened interest in and highlighted the potential of digital literacy. The margin of victory that took United States President Barack Obama to the White House in 2008 has also been attributed to the digital literacy of large numbers of U.S. citizens: as the 'YouTube' candidate, Obama created an open-source campaign that prompted millions of citizens to engage in a discussion about their values and views and, eventually, to turn out to vote.

People who are media literate understand how crucial news and information are to creating pluralistic and accountable societies. However, as the 2009 Ofcom-sponsored Report of the Digital Britain Media Literacy Working Group notes, if people are not digitally literate they risk 'being left behind' in terms of 'ownership of new technologies, awareness of and access to new content and services; and confidence and competence in using digital media.' Nevertheless, digital literacy should probably be viewed as a subset of the larger concept of media and information literacy (MIL). As Eric Newton, vice president of the Knight Foundation

has noted, ‘People who are digitally literate understand how they can use the new digital tools to engage with the news and information ecosystem, to become part of it.’ In other words, digital literacy – and for that matter, information literacy – includes within its definition the competencies.

Key Competencies

A competency is more than just knowledge and skills. It involves the ability to meet complex demands by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context.

In recent years, there has been an increased interest on the part of donor organizations in measuring citizens’ knowledge, skills and competencies. For example, new indicators of education outcomes beyond traditional yardsticks (such as number of years of education or highest degree earned) attempt to quantify not only what individuals know and can do in school or college subjects but also their capacity to respond to economic, political and social demands.

According to the OECD’s DeSeCo Project (2001), the drafting of key competencies must consider how that set of skills and attitudes:

- Contributes to valued outcomes for societies and individuals;
- Helps individuals meet important demands in a wide variety of contexts; and
- Are important not just for specialists but for all individuals.

The Project also identified four conceptual elements of key competencies:

1. Key Competencies are multifunctional
2. Key Competencies are transversal across social fields
3. Key Competencies refer to a higher order of mental complexity
4. Key Competencies are multidimensional

The DeSeCo Project further refined these generic key competencies (or competency categories) based on key competencies identified by experts from a range of different disciplines – philosophy, anthropology, psychology, sociology and economics. The project identified three broad categories of learned competencies, highlighted why those categories are important and enumerated specific competencies within each category.

Key Competencies for ML, IL and MIL

DeSeCo’s approach appears relevant to the challenge of assessing MIL levels. Individuals across societies need a wide range of competencies in order to meet the complex challenges of today’s information society.

All three of the DeSeCo competency categories are pertinent to the challenge of generating competencies for media and information literacy, as are five key questions that educators have articulated that ask users to assess and evaluate information in practical, replicable, consistent and attainable ways.

The table of indicators identified in “Towards Information Literacy Indicators,” pages 17-20 prepared by Ralph Catts and Jesus Lau (2008).

The 2009 EAVI Study identified two dimensions within media literacy: one flowing from an individual’s ability to utilize the media, the other informed by contextual and environmental factors. It found that ‘there is a broad correlation between individual media literacy competence and environmental factors.’ It also ‘demonstrated a clear correlation between media literacy levels in individuals and the media literacy policy implemented institutionally.’ The study suggested that ‘individual competence is a significant determining factor only when a certain threshold of environmental support has been met. If there is no formal strategy for the fostering of a media literate population, then that population is unlikely to be media literate.’

The report pointed out that ‘policy alone does not increase media literacy ... and many initiatives promoting media literacy are the result of grassroots efforts.’ It also recognised that many individuals respond well to the challenges posed by an increasingly ubiquitous media. However, one of the conclusions of the study was that ‘a public policy drive towards the improvement of media literacy levels across the population will impact inevitably on those individuals who need it most.’

According to the EAVI study, in order to define media literacy levels, individual abilities and environmental factors should be sorted into three levels of development: basic, medium and advanced.

These definitions have been provided to serve as background for understanding the changes in thinking and understanding the different types of literacies and how they are related to one another. In addition, they provide a framework within which the broader concepts of the competencies needed for active civic participation and success in the Information Society. Continued development and human empowerment depend on understanding these competencies and the related key variables so that specific and measurable indicators can be developed in the future.

Appendix B. Tier 1 Variables/Indicators for MIL

Tier 1 variables/indicators are intended to be input and process-related. They measure 'enabling factors' that affect individuals' acquiring of media and information literacy skills.

The variables and future derived indicators are intended to measure how well public and private institutions promote media and information literacy, including governmental ministries, NGOs and civil society organizations, media outlets, citizen media groups, educational institutions (at the primary, secondary and tertiary/university levels), telecoms and other public and private utilities and corporations.

The construction of the Tier 1 variables/indicators, Category 1 was taken in part from:

- Study Assessment Criteria for Media Literacy Levels, Final Report edited by EAVI for the European Commission, Annex L – List of Indicators, Components and Criteria (Oct. 2009), p. 2/2.

Some variables/indicators in Category 2 were also taken from:

- S. Ellis (2008). "International Indicators for the Supply, Access and Reception of Information and of ICT Skills. In: Catts, R. and Lau, J. (2008). Towards Information Literacy Indicators. Paris: UNESCO.

Both tiers, as mentioned, were corrected and complemented with variables/indicators suggested by participants of the Experts Group Meeting of UNESCO, held in Bangkok, Thailand, November 4-6, 2010. The variables/indicators proposed during the meeting were assessed, taking into account the following criteria:

1. New variables/indicators that were not included in the tables,
2. Relevance to the objectives of the topic

If the brainstormed variables/indicators met such criteria, they were then included in the tables. The new variables/indicators suggested by the Bangkok participants reflect the wish to have this statistical information more than the feasibility of finding it. The perception that prevailed in the meeting was that UNESCO and participants a holistic and comprehensive set of actual MIL indicators. Most of the suggestions aimed for a precise picture of media and information literacy. Therefore, the title of the lists had to be changed from 'indicators' to 'Towards indicators (variables)'.

Both tiers have many items. Once it is decided to create a composite index, several of the variables/indicators, if not most, will have to be discarded because of data overlap or because of the need to simplify the index to make it operational and economically feasible to countries or institutions who may decide to use it.

Category 1. Media and Information Enabling Factors

**Table 1: Category 1.
Media and Information Literacy Context**

Category 1. Media and Information Literacy Context			
Topic	Towards indicators (variables)		Score Range
a. MIL Education	1.	MIL presence in primary school	
	2.	MIL presence in secondary school	
	3.	MIL presence in vocational training curriculum	
	4.	Degree program in MIL offered at tertiary level of education	
	5.	Training of teachers (primary, secondary and tertiary level) in MIL	
	6.	MIL educational activities in schools	
	7.	MIL educational activities in libraries and library community outreach	
	8.	MIL teaching and learning resources	
	9.	MIL conferences / Congresses	
b. MIL Policy	10.	National MIL committee or related body	
	11.	National MIL committee relation to civil society and public organizations or related body set up and linked to civil society and/or ministry of education	
	12.	Media regulation and policy ownership	
	13.	Parental control of media	
	14.	Media control	
	15.	Existence of regulatory authorities	
	16.	Regulators attention to MIL	
	17.	Existence of Freedom of Information Act (FOIA)-type laws	
	18.	Enforcement of FOIA-type laws	
	19.	Existence of freedom of expression laws	
	20.	Enforcement of freedom of expression laws	

	21.	Promotion of MIL and use of user-generated content by print outlets: newspapers and magazines (paid and free)	
	22.	Promotion of MIL and use of user-generated content by television networks/stations	
	23.	Promotion of MIL and use of user-generated content by radio channels/stations (public, private and community)	
c. User-Generated Content	24.	Promotion of MIL and use of user-generated content by cable/satellite companies	
	25.	Promotion of MIL and use of user-generated content by telecoms	
	26.	Promotion of MIL and use of user-generated content by mobile phone providers/sellers	
	27.	Promotion of MIL and use of user-generated content by Internet providers	
	28.	Promotion of MIL and use of user-generated content by cinemas and film festivals	
	29.	Media and multimedia festivals	
d. Civil Society	30.	Organizations that are active in MIL	
	31.	MIL initiatives promoted for employees in the work place and/or online	
	32.	Activities of MIL developed by civil society organizations (NGOs)	
	33.	Coordination/cooperation among civil society organizations (NGOs)	
e. Research	34.	Number of researchers	
	35.	Number of MIL researchers	
	36.	In-country research on MIL by government, civil society, media and/or educational institutions	
	37.	Number of registered patents	
	Total Score		

Category 2. Media and Information Availability

**Table 2: Category 2.
Media and Information Availability – Creation and Availability**

Category 2. Media and Information A. Creation / Availability			
Topic	Towards indicators (variables)		Score Range
a. Journals	1.	Paper titles per 1,000,000 inhabitants	
	2.	Online titles per 1,000,000 inhabitants	
	3.	Circulation total; circulation per 1,000 inhabitants	
	4.	Circulation of magazines per 1,000 inhabitants	
	5.	% of magazines accessible to the average citizen	
	6.	% of serials (numbered series publications)	
b. Broadcast content	7.	% of annual radio broadcasting time devoted to news and information, education, or science	
	8.	% of annual television broadcasting time devoted to news and information, education, or science	
c. On-line media	9.	Number of local on-line newspapers per 1,000 inhabitants	
	10.	Number of Internet radio stations per 1,000 inhabitants	
d. Libraries	11.	Number of volumes in national library(ies)	
	12.	% of book volumes of academic libraries per 1,000 students	
	13.	% of academic library book volumes per 1,000 students	
	14.	Number of school libraries per 1,000 students	
	15.	% of school library book volumes	
	16.	Number of public library service points	
	17.	Public libraries - volumes of books (UIS libraries survey)	
e. Book production	18.	Titles per 1,000 inhabitants	
	19.	% bookstores/bookshops per 1,000 inhabitants	

f. Language	20.	International languages, national-official, minority	
g. Film	21.	% of films nationally produced	
	22.	% of distributed films	
	23.	% of cinema attendance	
Total Score			

**Table 3: Category 2.
Media and Information Availability – Distribution and Supply**

Category 2. Media and Information Availability			
B. Distribution / Supply			
Topic	Towards indicators (variables)		Score Range
a. Radio	24.	Channels per 1,000 inhabitants	
	25.	Radio sets per 100 or 1,000 inhabitants	
	26.	% of households with a radio	
b. TV	27.	Channels per 1,000 inhabitants	
	28.	Television sets per 100 or 1000 inhabitants	
	29.	% households with a television set (TV)	
c. Journalists	30.	Print journalists per 1,000 inhabitants	
	31.	E-journalists per 1,000 inhabitants	
	32.	Broadcast journalists per 1,000,000 inhabitants	
	33.	Graduates of (and enrolment) in journalism and information studies programmes	
d. Internet	34.	% of localities with Public Internet Access Centres (PIAC) by the number of inhabitants	
	35.	% of households with Internet access	
	36.	Internet subscribers per 1,000 inhabitants	
	37.	% of schools with an Internet connection	
	38.	Broadband penetration rate	

	39.	Commercial and public servers available in the country	
e. Social media	40.	% of population with Facebook accounts	
	41.	% of population with Twitter accounts	
	42.	% of blogs	
	43.	Number of visitors per country to YouTube	
f. Websites	44.	Websites in their language (national-official, minority)	
	45.	% of e-commerce websites per 1,000 inhabitants relative to the total number of websites	
	46.	% of .edu websites relative to the total number of websites	
	47.	% of .gov websites relative to the total number of websites	
	48.	% of Internet Protocol (IP) addresses in the country	
g. PCs	49.	Number of Personal Computers (PCs) per 100 or 1,000 inhabitants	
	50.	Use of computers for state (or % of government offices)	
	51.	Online presence of governmental organizations	
	52.	Use of computers for commerce (or % of businesses)	
	53.	Use of computers for education (or % of schools)	
	54.	Computers locally (within classroom) networked (e.g. XO laptop)	
	55.	Hardwire network of computers	
h. Libraries	56.	Library employees (all types) per 1,000,000 inhabitants (UIS libraries survey)	
	57.	Number of PCs in libraries	
	58.	% public PC access to the Internet in Libraries	
i. Mobile Phones	59.	Mobile phones per 1,000 inhabitants	
	60.	Number of mobile phone providers per 1,000 inhabitants	
	61.	Number of mobile phone retailers	
	62.	Text-enabled phones (non smart) per 1,000 inhabitants	
	63.	Smart phones (able to browse the Internet) per 1,000 inhabitants	

	64.	Mobile money (M-Sente) use of phones (and other uses)	
Total Score			

Table 4: Category 2.
Media and Information Availability – Information Reception

Category 2. Media and Information Availability			
C. Information reception			
Topic	Towards indicators (variables)		Score Range
a. Newspapers	65.	% of households/ persons reporting they read a newspaper	
	66.	% of persons reporting they read online newspaper(s)	
	67.	% online reading of major national newspapers	
b. Radio	68.	% of households/ persons reporting they listen to radio	
c. TV	69.	% of households/ persons reporting they watch TV	
d. On-line media	70.	% of households/ persons reporting they use on-line media	
	71.	% of households/ persons reporting they use the Internet	
e. Broadcast content	72.	% of persons reporting they watch different content types	
f. Use of libraries	73.	% of households/ persons reporting they borrow books	
	74.	% of households/ persons reporting they use e-mail	
	75.	E-mail messages per 1,000 inhabitants	
	76.	% of persons reporting they buy books	
Total Score			

Appendix C. Tier 2 – variables/indicators for MIL

These variables/indicators measure individual competencies among librarians, teacher-trainers, teachers in training and in service, and students.

These variables/indicators, like the Tier 1 indicators before them, are intended to be adapted to local realities before use. They may also be adapted across countries and regions to measure competencies at the primary, secondary and/or tertiary (university) level within a nation's formal education system.

The intent of these variables/indicators is to help governments measure and monitor their own progress towards MIL and to better inform their own policymakers and potential international partners, such as UNESCO, about their needs. The original skills components were adapted from Lau (2006b) and IFLA Guidelines for Information Literacy for Lifelong Learning (Lau, 2007).

The final version also includes competencies suggested by the Bangkok Group of Experts, it was evaluated to incorporate competencies when new skills or enhanced definitions were given. The original set of components was even in terms of number of competencies, but with the addition of the Bangkok suggestions the list does not have this balance. However, the components cover media competencies more completely.

Table 5: Competencies Component 1
Access / Retrieval of Media and Information

Component 1 Access / Retrieval of information The user accesses information effectively and efficiently			
Subcomponents	Core Competencies		Score Range
a. Definition and articulation of media and information need	1	Recognizes the need for media and information	
	2	Defines the need for media and information	
	3	Recognizes that a variety of media and information serve a variety of purposes	
	4	Recognizes a problem and looks for solution/media and information	
	5	Develops search strategies search process to find media and information	
	6	Identifies the media and information for a particular purpose and define the necessary content	
	7	Evaluates potential sources to look for media and information	
b. Location and retrieval of media and information	8	Chooses appropriate media and information sources	
	9	Accesses the selected media and information sources	
	10	Selects and retrieves the located media and information	
Total Score			

Table 6: Competencies Component 2.
Evaluation / Understanding of Media and Information

Component 2 Evaluation / Understanding information <i>The user evaluates information critically and competently</i>			
Subcomponents	Core Competencies		Score Range
a. Assessment of media and information	1	Analyzes, examines, and extracts relevant media and information	
	2	Distinguishes editorial from commercial content / factual and fictional content of media and information	
	3	Recognizes that media try to attract different audiences for different purposes	
	4	Interprets media and information	
	5	Understands and evaluates the functions of media and information in society	
	6	Understands and questions context, ownership, regulation, audiences, economic, legal, privacy and security issues of media and information	
	7	Evaluates how people, places, issues, ideas and concepts are represented in media and information, with an appreciation of the importance of diversity in the media and information	
	8	Evaluates currency, relevance, accuracy and quality of the retrieved media and information	
	9	Recognizes that media and information have social and political implications and that the media and information often have an agenda setting function	
	10	Selects and synthesizes media and information	
b. Organization of media and information	11	Identifies the best and most useful media and information	
	12	Determines appropriate and relevant use of media and information	
	13	Groups and organizes the retrieved media and information	
	14	Arranges/Saves/Stores/Preserves/Deletes media and information	
Total Score			

Table 7. Competencies Component 3.
Use / Communicate Media and Information

Component 3 Use / Create / Communicate information <i>The user applies/uses information accurately and creatively</i>			
Subcomponents	Core Competencies		Score Range
a. Creation of knowledge	1	Learns or internalizes media and information as personal knowledge	
	2	Applies media and information in contextually-relevant settings to target audience	
	3	Evaluates knowledge for usefulness	
b. Communication and ethical use and media and information	6	Communicates in media and information formats for a particular message for a particular audience	
	7	Demonstrates ethical use of information	
	8	Protects personal data	
	9	Identifies and interacts with bodies that regulate media and information	
	10	Communicates the learning product with acknowledgement of intellectual property	
	11	Uses the relevant acknowledgement style standards	
Total Score			

Appendix D. List of Participants

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References

- Briet, S. 1951. *Qu'est-ce que la documentation*. Paris: EDIT. (As quoted in Buckland).
- Carbo, T. 1997. "Mediacy: Knowledge and Skills to Navigate the Information Highway," Presented at the First UNESCO Conference on Information Ethics, Monaco 1997. Published in *International Information & Library Review* (IILR), Volume 29 (3-4), pp. 393-401.
- Catts, R. and Lau, J. 2008. *Towards Information Literacy Indicators*. Paris: UNESCO.
- Catts, R. 2005. *Information Skills Survey; Technical Manual*. CAUL, Canberra. Retrieved on July 10, 2010. From <http://www.caul.edu.au/info-literacy/ISSTechnicalManual2005.pdf>
- Catts, R. 2010. *Information Literacy Validation Report*. Paris: UNESCO. Manuscript submitted for publication (Internal document).
- Centre for Law and Democracy. 2010. *RTI Legislation Rating Methodology*. Retrieved on July 10, 2010. From http://www.law-democracy.org/wp-content/uploads/2010/09/Indicators.final_.pdf.
- CENEVAL - Centro Nacional de Evaluación para la Educación Superior, A.C. 2010. *Numeralia*. Retrieved on October 10, 2010. From <http://www.ceneval.edu.mx/ceneval-web/content.do?page=1711>.
- Certiport. 2010. *iCritical Thinking™ powered by ETS*. Retrieved on October 10th, 2010. From <http://www.certiport.com/Portal/desktopdefault.aspx?p>.
- Commission of the European Communities. 2009 Commission Recommendation on media [and information] literacy in the digital environment for a more competitive audiovisual and content industry and an inclusive knowledge society. Retrieved on July 12, 2010. From <http://www.epractice.eu/files/Commission%20Recommendation%20on%20Media%20Literacy.pdf>
- Declaration of Principles, Building the Information Society: A Global Challenge in the New Millennium. 2003. Geneva, ITU. Retrieved on July 12, 2010. From http://www.itu.int/dms_pub/itu-s/md/03/wsiscpc3/td/030915/S03-WSISPC3-030915-TD-GEN-0006!R1!PDF-E.pdf
- Delli Carpini, M. X. And, Keeter, S. 1993. Measuring Political Knowledge: Putting First Things First, *American Journal of Political Science*. p. 1203.
- EAVI - European Association for Viewers Interest. 2009. *Study on Assessment Criteria for Media Literacy Levels*. Retrieved on July 20, 2010. From http://ec.europa.eu/culture/media/literacy/docs/studies/eavi_study_assess_crit_media_lit_levels_europe_finrep.pdf
- Educational Testing Service. 2008. Retrieved on October 2, 2010. From <http://www.ets.org/>
- Elearnspace. 2009. *The (changed) information cycle*. Retrieved on October 2, 2010. From <http://www.elearnspace.org/blog/2009/04/17/the-changed-information-cycle/>.

Exam English. 2010. *Exam English. Free practice tests for learners of English*. Retrieved on October 3, 2010. From <http://www.examenglish.com/>.

Gerbner, G. 1999. Foreword: What do we know? In J. Shanaha and M. Morgan (Eds.), *Television and its Viewers: Cultivation Theory and Research*, Cambridge: Cambridge University Press, and elsewhere.

Head, A., and Eisenbergh, M. B. 2010. Truth be told: How college students evaluate and use information in the digital age. Project Information in the Digital Age. The Information School, University of Washington, Seattle, Washington

Horton, F.W. Jr. 1983. Information Literacy vs. Computer Literacy. *American Society for Information Science Bulletin* 9(4), pp: 14-16.

Horton, F. W. Jr. 2009. Understanding Information Literacy: A Primer. Paris: UNESCO.

Izquierdo Arroyo, J. M. 1995. *La organizacion documental del conocimiento*. Madrid: Tecnidoc. (As quoted in Buckland)

Kuklinski, J. H. and Quirk, P. 2001. Conceptual Foundations of Citizen Competence, *Political Behavior*, September, p. 1203.

Lau, J. (2007). Guidelines for Information Literacy for Lifelong Learning. The Hague: IFLA. Retrieved on October 3, 2010.
From www.ifla.org/VII/s42/pub/IL-Guidelines2006.pdf

Lau, J. 2006. The Impact of Information Competencies on Socio-Economic Development in Southern Hemisphere Economies. In Martin, A. and Madigan, D. *Digital Literacies for Learning*. London: Facet.

Lau, J. 2010. Conceptual relationships of information literacy and media literacy. A document prepared for UNESCO IFAP (Not published yet). Paris: UNESCO.

Lau, J. & Cortés, J. 2009. Information Skills: Conceptual Convergence between Information and Communication Sciences. *Comunicar* 32; 21-30.

Merlo Flores, T. and Feilitzen C. 2007. *Proposal for an International Research Project on Children and Media to Create Indicators for a Media Social Responsibility Index*. Retrieved on July 5, 2010. From <http://www.nordicom.gu.se/cl/publ/electronic/MSRI.pdf>

Martens, H. 2010. Evaluating Media Literacy Education: Concepts, Theories and Future Directions. *The Journal of Media Literacy*. Vol. 2, Issue 1. Retrieved on September 14th From www.jmle.org/index.php/JMLE/article/view/71.

Mondragón Pérez Angélica Rocío. 2002. *¿Qué son los indicadores?*. Mexico; INEGI. Retrieved on September 29, 2010.
From http://www.inegi.org.mx/prod_serv/contenidos/espanol/bvinegi/productos/integracion/especiales/notas/notas19.pdf.

Nordicom, 2005. *Proposal for an International Research Project on Children and Media*

to Create Indicators for a Media Social Responsibility Index. Tataina Merlo Flores and Cecilia von Feilitzen with support of Karl-Gunnar Lidström. Retrieved on June 15, 2011. From <http://www.nordicom.gu.se/cl/publ/electronic/MSRI.pdf>

OECD. 2001. *DeSeCo Background Paper. Definition and Selection of Competencies: Theoretical and Conceptual Foundations (DeSeCo)*. Retrieved on June 15, 2011. From <http://www.oecd.org/dataoecd/48/22/41529556.pdf>

OECD. 2007. Global Project on Measuring the Progress of Societies. Paris: OECD. Retrieved on July 10, 2010. From http://www.oecd.org/document/51/0,3746,en_21571361_31938349_37115187_1_1_1,00.html

Ofcom. 2010. Office of Communications, United Kingdom. *Communication Reform*. Retrieved on July 11, 2010. From <http://www.ofcom.org.uk/static/archive/ra/topics/ofcom/ofcom-index.htm>

Otlet, P. 1934 [1989]. *Traité de documentation*. Brussels: Editiones Mundaneum. Reprinted 1989, Liège: Centre de Lecture Publique de la Communauté Française
(As quoted in Buckland).

Otlet, P. 1990. *International Organization and Dissemination of Knowledge: Selected Essays*. (FID 684). Amsterdam: Elsevier. (As quoted in Buckland).

Right to Information Legislation Rating Methodology. 2010. Retrieved on October 3, 2010. From <http://www.access-info.org/en/advancing-the-right-to-know/111-rti-rating-methodology>

Rumble, J. and Noe, N. 2009. Project SAILS: Launching Information Literacy Assessment Across University Waters. *Technical Services Quarterly*, 1555-3337, 26, (4), Pages 287 – 298

Singh, J. , et al. 2010. "International Information and Media Literacy Survey" (IILMS). UNESCO IFAP project template, Washington, DC.

Towards Information Literacy Indicators. 2008. Retrieved on July 5, 2010. From <http://www.uis.unesco.org/template/pdf/cscl/InfoLit.pdf>

UNESCO. 1997. *International Information & Library Review (IILR)*, Volume 29 (3-4).

UNESCO. 2004a. The United Nations Decade on Literacy (2003-2012). The Literacy Decade: Getting Started 2003-2004. Paris: UNESCO. Retrieved on 5 April 2011. From <http://unesdoc.unesco.org/images/0013/001354/135400e.pdf>

UNESCO. 2004b. The Plurality of Literacy and its Implications for Policies and Programmes. Position Paper. Paris : UNESCO. Retrieved on August 4, 2010. From <http://unesdoc.unesco.org/images/0013/001362/136246e.pdf>

UNESCO. 2005. Expert Group meeting on Literacy Assessment in 2003. Topics and Issues for the UNESCO expert meeting. <http://unesdoc.unesco.org/images/0014/001401/140125eo.pdf>

UNESCO / National Forum on Information Literacy / IFLA. Alexandria Proclamation on InformationLiteracy and Lifelong Learning (2006). Retrieved on July 3, 2010. From

http://portal.unesco.org/ci/en/ev.php-URL_ID=20891&URL_DO=DO_TOPIC&URL_SECTION=201.html /
<http://archive.ifla.org/III/wsis/BeaconInfSoc.html>

UNESCO. 2008a. Media Development Indicators. Paris: UNESCO. ¹ Media development indicators: a Framework for Assessing Media Development. UNESCO. Retrieved on July 6, 2010. From <http://unesdoc.unesco.org/images/0016/001631/163102e.pdf>

UNESCO. 2008b. The Global Literacy Challenge: A profile of youth and adult literacy at the mid-point of the United Nations Literacy Decade 2003 – 2012. Paris : UNESCO. Retrieved on September 28, 2010. From <http://unesdoc.unesco.org/images/0016/001631/163170e.pdf>

UNESCO. 2010. Information Literacy Validation Report, p. 1, and on the issue of validity, cf., pp.13, 15.

UNESCO. 2011. MIL Curriculum for Teacher Education. Paris: UNESCO.

United Nations. 1948. Universal Declaration of Human Rights. NY: United Nations.

White Paper “A New Future for Communications” (2000). UK Government. Retrieved on August 10, 2010. From: <http://www.legislation.gov.uk/ukpga/2003/21/contents>

Zurkowski, P. 1974. The Information Service Environment Relationship and Priorities. U.S. National Commission on Libraries and Information Science. Washington. D.C. Government Printing Office. 1973.