ABSTRACT
Literacy is one of the five agreed global goals of UNESCO’s Education for All programme and statistics on youth literacy are an outcome indicator for the Millennium Development Goal of Universal Primary Education. Literacy is the only skill that can be measured in an internationally comparable manner, and one of the only indicators for the level of education amongst the adult population. UNESCO Institute for Statistics is the official international body responsible for the collection of literacy data, which are used in all the major international development reports.

This paper sets out the changing conception of literacy which had moved from a dichotomous literate/illiterate distinction to understanding literacy skills as a continuum relating to a performance in a wide variety of everyday tasks.

The paper looks at new international measures of literacy especially UIS LAMP programme, which has been specially adapted to measure literacy in low literacy environments. It stresses the link between libraries and literacy especially in relation to adult literacy and the sustainability of skills learnt in school.

INTRODUCTION
From 2005 to 2008 UNESCO Institute for Statistics (UIS) worked closely with IFLA and the ISO library statistics committees to develop a new international survey of library statistics. The survey was piloted in Latin America and the Caribbean. The results are discussed in more detail elsewhere in this publication. UIS staff worked closely with many experts on library statistics, and have sought to find ways to encourage the further development of statistics amongst professional librarians. The results of the survey and these discussions have suggested that on the one hand librarians use statistics more to maintain their library stock and administration than to understand their users, and on the other that library statistics in developing countries, which are UNESCO’s main concern, are often minimal and do not address their particular circumstances in running library networks, including for example where to site libraries in countries with high illiteracy. This paper aims to place library statistics within a context of the changing role of libraries and their particular functions in developing countries.

1 This paper follows ‘Indicators on ‘information literacy’ and the Information for All programme; a challenge for libraries’ which I presented at the IFLA 2008 Conference in Quebec, but has been expanded to cover issues discussed at the subsequent Montreal satellite conference on library statistics.
One major aspect of the broader cultural and informational role of libraries is information literacy. On April 3rd 2008 UNESCO’s Intergovernmental Council of the Information for All Programme adopted a new framework concerned with measuring people’s access to information, including measures of information literacy. If Information for All is to be achieved citizens and residents in all countries must be able to have access to, and be able to make use of public information that will allow them to address their needs in terms of health, education, work, and many other services. It will be impossible to achieve the Millennium Development Goals unless people can find out what they need to know to give themselves new opportunities to lift themselves out of poverty. UNESCO’s CI Sector and Institute for Statistics have been working with the International Federation of Library Associations and other expert partners in response to a request from the IFAP Working Group on Measurement for Knowledge Societies to produce guidance to member states. This new framework has been presented in a publication entitled ‘Towards Information Literacy Indicators’.2

Information literacy has emerged out of frameworks developed in the US and Australia for teaching university students how to access information. In this sense it began first and foremost as a libraries initiative. I will however argue that it has been reborn as a more general initiative to give all citizens in all countries the skills they need to address their concerns of everyday knowledge of education, health, work and other issues. In this new form it needs to be re-ingested into the library system as public libraries find a new public information and education role in the ‘promotion of knowledge societies’. This role is one that many libraries find uncomfortable, but it is one that I would suggest they must adopt, especially in the face of the rapid expansion of digital information exchange by mobile phone and other devices.

**POLICY FRAMEWORK**

The overarching goal of the UNESCO Communication and Information Sector’s Information for All programme for 2008–13 is

“to help Member States develop and implement national information policies and knowledge strategies in a world increasingly driven by digital technologies”.3

This goal reflects a broader interest in access to information and availability of the media, as well as UNESCO’s joint leading responsibility for the follow-up to the 2003/5 World Summit on the Information Society. UNESCO’s World Report ‘To-

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2 UNESCO (2008). The main paper was written by Ralph Catts of University of Stirling, with Jesus Lau of IFLA and University of Veracruz. UNESCO Institute for Statistics added an appendix with an indicator framework.

wards Knowledge Societies’ in November 2005 at the time of WSIS concluded that knowledge societies would be built on three ‘poles’; narrowing the knowledge divide, ‘a more participatory approach to access to knowledge, and a better integration of knowledge policies.’ It’s recommendations included the need for the development of knowledge society indicators.\(^4\) The publication of the World Report and subsequent follow-up of WSIS recommendations has seen a shift of interest towards content rather than technology, as one might say ‘knowledge societies not technology societies’. Technology is indeed a means to achieve an end, and that end is to allow more people to use the information they can obtain to solve their own problems, to raise themselves from poverty, to improve their health, to access government services and to find jobs.

Phrased in this way the links with other major international policies become clear. The UN Millennium Development Goals seek above all to address poverty issues yet how can poverty be addressed when people do not have access to, or do not know how to access key services such as education and health? For UNESCO the role of education in relation to information access has been identified as a priority by the 2006 Education for All Global Monitoring Report.\(^5\) The report highlighted the importance of the literate environment in achieving UNESCO’s paramount objectives of Education for All. It is well known that illiterate people are much more successful in acquiring sustainable literacy skills when they are taught in relation to tasks that students are seeking to accomplish in their everyday lives. Even in developed countries, like Canada, it is becoming clear that students who are successful at school but who then live the rest of their lives in remote communities risk losing the literacy skills they picked up in their childhood. A literate environment, access to newspapers, books, radio, TV and the Internet is thus a key to overall participation in society including social and economic opportunities.

Before I worked for UNESCO I led London Skills Forecasting Unit\(^6\) which was responsible for identifying the skills needs of Londoners; we spent a lot of time discussing the skills needed to obtain a job in London, concluding that in a big metropolis it needed special skills to know where to look for a job (word of mouth not newspapers), and how to sell yourself (travel a lot and present yourself in peoples offices, don’t just send a cv). Today I would see these skills as part of information literacy.

Information literacy was, and still is, a library based programme. Libraries are seeking a broader role in ‘information societies’ and often directly in education and information literacy, something that they already know, can give them this role. Everyone’s favourite librarian is the one who can find documentation on anything – the person who really has top rate information literacy skills. In develop-

ing countries the library has a unique position. It is the only community institution the role of which is clearly understood, and which has a neutral response to requests; not especially a response of the government or even the local administration but simply a response to help people to tackle their own problems. The public information role of a library therefore sits closely alongside its educational role. Indeed education and public information roles can be brought together in a library that explicitly sets out to create the space in which people interact, sharing information and helping each other, forming a zone for social networking and community discussion.

MEASURES OF ACCESS TO PUBLIC INFORMATION – PROVISION

Information literacy is seen as a set of skills and thus measured at the individual level. However access to public information requires measurement of at least two aspects of media and information before thought is given to measuring skills. Provision; a person may have excellent information literacy skills, but if there is no public information on which to exercise them the objective of a knowledge society will not be achieved. Availability and access; there may be very good public web sites in a country, but if people do not have access to computers then they will not be able to exercise information literacy skills. In summary a public broadcast service may reach every corner of a country, but if people do not have receivers they cannot take advantage of the service. Equally there is no point in people tuning their receivers to try and find public service information if there is no public broadcast service, and it is will no use them hearing such information if they do not have the skills to know what to do about what they have heard.

Statistics on media provision to the population allow countries to measure whether newspapers, radio and TV reach all parts of the country. Data from the UIS newspaper survey indicates that Malaysia, the non-OECD country with the highest newspaper circulation in relation to its literate population had an average circulation of 165 daily papers per 1,000 literate inhabitants. This contrasts with an equivalent figure of 650 papers in Norway (the highest in the world), and less than 2 daily newspapers per 1,000 literate inhabitants in Niger, Benin, and Kyrgyzstan (the lowest figures amongst countries which responded).7 To these traditional media we can add Internet radio and ‘bloggers’. The barriers to provision in the form of telecoms infrastructure and distribution networks mostly relate to cost and geography. Large dispersed rural populations can be very difficult to reach. It is in this area that the advent of the mobile phone has had such an impact, reducing the need for costly and complex installation of fixed cables, and allowing easy exchange of person to person information even in areas with low literacy. The lat-

7 UIS Newspaper Survey 2005.
Knowing your Readers and your Community

The report on progress towards the Millennium Development Goals indicates that between 1990 and 2005 the number of mobile telephone subscriptions worldwide rose from 11 million to 2.2 billion, while fixed telephone line subscriptions grew from 520 million to 1.2 billion in the same period. Thus land phones were almost 50 times more popular than wireless in 1990, while in 2005 the wireless phone is almost twice as popular as the land line.8

Data on provision of information are relatively easy to come by at national level. Press authorities and newspapers themselves generally have data on circulation. Radio/TV regulators, broadcasters or ministries have data on listeners/viewers. The UIS 2006 broadcast survey found that some 60 countries could provide data on geographical coverage of radio and TV, while 27 countries could provide data on the number of hours devoted to education and scientific programmes.

MEASURES OF ACCESS TO PUBLIC INFORMATION – AVAILABILITY AND ACCESS

Given a good level of provision of public information the next question for statistics is whether such provision can be accessed easily by local people. Do households have radio and TV, a fixed or mobile telephone? They may have a computer with Internet access in the house, or they may have access to the Internet through a public facility such as a library or a private Internet café. Radio and TV are the most ubiquitous channels for public information in developing countries. They are relatively cheap and unlike printed media they do not require reading a written text for comprehension. Availability is often increased by using mixed technology. For example newsheets can be distributed by Internet and then printed out for local circulation. The success of the IPod has also led to several programmes in developing countries in which educational material is downloaded like music! Barriers to the availability of information can be more complex and more difficult to surmount that those of provision. They include a wide range of factors such as living simply too far away from a public information point, or being unable to enter a café because access is restricted to men or adults.UIS estimates that there were 775 million illiterate adults in the world in 2007 of which 64% are women.9

A key basic barrier at this level is language. Lack of knowledge of European languages, especially English, presents a major issue with regard to accessing the Internet or even knowing how to use technology. Lack of knowledge of official languages or having a mother tongue which has no written text creates even more difficulty.10 Under such circumstances local people often have to seek the aid of a ‘middleman’ or ‘information broker’ who may charge for their services, and who

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may have a vested interest in pointing his customer towards a particular shop or service. The UIS Broadcast Survey 2006 indicated that some 61 countries could provide data on community radio stations, and some 54 countries reported devoting broadcasting time to issues of concern to indigenous and tribal people.\textsuperscript{11}

Data on availability and access is normally collected either through subscription data or through household surveys, each of which suffers from a key technical problem. Subscription data – number of mobile phone subscriptions – does not reflect actual availability. For example a male head of household may have several mobile line subscriptions, but his wife and children may not be able to access any of them. Several international and national household surveys collect data on the availability of old and new media technology; radio, TV, PCs (with and without Internet), mobile phones. It is commonplace in such surveys to ask the head of the household to answer on behalf of all household members, but the head may well over-emphasise availability to other members of the household. In some countries upwards of 30\% of responses to household surveys are obtained in this way presenting important worries about data quality.

\section*{LIBRARY STATISTICS}

Since 2005 UIS has been working with the IFLA library statistics group to see whether the UNESCO global library statistics survey can be revived. As has already been suggested the library is perhaps the most identifiable institution, outside government, at community level across the world. It also has several advantages in relation to statistics. The function of a library is well understood – it is likely that everyone would understand a library as a community facility that lent books and other reading material, even if that facility was a donkey or a spot under a tree. A library is also a good place to collect statistics as there should be staff who maintain some registers of books on loan as well as interest in housing local statistical publications about the community. Data from the National Census should be housed in local libraries, and are generally the source of information on the number of literates in any locality. Indeed it could be argued that census data on literacy should be the starting point for any plan to consider the siting of new libraries; either placed where there is a demand from literate people or where high illiteracy levels may require a school and library to address the problem.

Initial enquiries by IFLA ascertained that the best opportunity for a more complete data return was Latin America and the Caribbean. A survey was drawn up compatible with the latest 2006 ISO standard. In 2007 the questionnaire was sent to national bodies responsible for university and public libraries. Responses were received from 25 out of 41 countries or 61\%.\textsuperscript{12} The majority of responses covered

\begin{footnotesize}
\textsuperscript{11} UIS Broadcast Survey 2006
\textsuperscript{12} UIS/IFLA/ISO Libraries Survey of Latin America and the Caribbean 2007
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public libraries and not university libraries. This is not a particularly low rate of response for an initial international survey.

Further discussions have followed. It would seem that many librarians see statistical indicators as something they are obliged to collect by governments, or which are used to maintain an administrative system for regulating their own collections. While both these functions may be necessary I find it startling that so few libraries

- look at external survey data to see what their customers like to read
- use Census data to look at the demographic distribution of potential readership, as well as to plan where best to locate new library branches
- outside OECD countries have even basic management systems to compare numbers of readers with numbers of loans

There is interest in both UNESCO and IFLA to change this picture through their regional structures of offices and committees. We desperately need activists in the regions to work for library statistics that help librarians to improve services for their users!

In the future libraries are likely to play a key role as centres for education and information access. In the UIS/IFLA Latin American survey 16 countries or 39% were able to say how many ‘events’ they held and slightly less (12–14 countries) were able to say whether libraries provided user training sessions. It is of course at these training sessions that users would normally be shown how to access the collections, and these are the courses in Universities in the US and Australia that have formed the basis for the information literacy skills we are considering here.

MEASURES OF LITERACY AND INFORMATION LITERACY SKILLS

The measurement of literacy is obviously of keen interest to librarians. UNESCO traditionally defined as literate someone who can with ease ‘read and write a simple sentence’, but this conception is changing as will become evident later. Based on this definition the global number of illiterates is expected to fall from 692 million in 2005 to 657 million in 2015. Half of these illiterates will be in south and west Asia. However although the literacy rate in Sub Saharan Africa is expected to decrease the number of illiterates is expected to rise by over 13 million adults between 2005 and 2015. This contrast is explained by rising populations and the ‘patchy’ quality of the education system. These statements indicate the two major issues for literacy education. Firstly very high numbers of illiterates are concen-
trated in a very few, usually large, countries. Secondly, especially in Africa literacy provision has to be significantly increased in illiteracy is to be ‘halved by 2015’ as agreed by countries under the UNESCO Education for All goals.14

There are nevertheless a number of reasons why statisticians are not satisfied with current literacy measures. Literacy as measured in this way is usually collected through household surveys, such as the Census or Labour Force Surveys. The interviewer will often simply ask whether everyone in the house is literate. At best all the household members may be asked to read a sentence. Often, when household members are absent, one person is asked to reply on behalf of all members in the household. Under these circumstances literacy rates and skills are often reported in exaggerated numbers. Modern approaches to literacy stress that there are many different ‘literacies’ depending on the context in which a person is operating. For example literacy is adding together prices in a shopping list, filling in a government form, reading a newspaper, reading a street sign etc. Language is a key dimension. Indigenous languages may not have a written script. A written language may not be the ‘official’ language used in education or in printed books and papers. Coding of languages for use on computers and the Internet has added another dimension to this complexity. Such ideas have led to increasing development of tests to measures different dimensions of literacy skills to which I now turn. I will first describe the measurement of skills associated with information location, retrieval and reprocessing, in other words information literacy, and then I will show how such skills have been integrated into UIS new measure of literacy LAMP.

The provision of information as well as access and availability. We have discussed libraries role as centres for information provision in this, and highlighted the fact that despite their perfect positioning for such a role few libraries have taken it up, neither do libraries in developing countries have the basic statistics need to manage their own functions and planning. Nevertheless we have returned to the observation that certain key libraries, especially in the US and Australia were the origin of the information literacy debate.

The US Association of College and Research Libraries were the first to draw up a standard framework for information literacy in 2000.15 The framework includes five skills.

The information literate student:

1. determines the nature and extent of the information needed.
2. accesses needed information effectively and efficiently.
3. evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

14 This section on literacy skills derives from International Literacy Statistics: a review of concepts, methodology, and current data, UIS 2008.
4. individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Each skill is associated with several defined levels of competence and indicators of competent behaviour. The skills are normally tested through a questionnaire and thus they may represent more what students know about the subject than their actual behaviour in looking for information.16

Australia and New Zealand have a joint framework for information literacy including six standards.17

The information literate person:

1. recognises the need for information and determines the nature and extent of the information needed
2. finds needed information effectively and efficiently
3. critically evaluates information and the information seeking process
4. manages information collected or generated
5. applies prior and new information to construct new concepts or create new understandings
6. uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information

Standards 1, 2, and 6 are very much the same as in the US version. Standard 3 seems slightly more limited in definition than the US. Standards 4 and 5 seem more elaborate than the US framework in specifying how the information gained is used. The standard recommends using assessment techniques to test whether students actually use these skills in practice.18 Whereas the American framework is specifically designed for college graduates the Australian and New Zealand one aims at all people19 even though it subsequently concentrates on a curriculum and formal assessment in an educational context.

In their report to UNESCO Catts and Lau20 recommend the following information literacy skills:

1. Recognise information needs
2. Locate and evaluate the quality of information
3. Store and retrieve information

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17 A. Bundy ed. Australian and New Zealand Information Literacy Framework principles, standards and practice, Australian and New Zealand Institute for Information Literacy (2004).
18 Ibid pp.26-7
19 Ibid p.4
20 Towards Information Literacy Indicators, UNESCO (2008).
4. Make effective use of information
5. Apply information to create and communicate knowledge

They discuss the different techniques to judge whether people have acquired these skills differentiating between self-reporting of skills through a questionnaire and active testing of performance during problem solving. The approach they favour is to measure information literacy skills through UIS LAMP literacy assessment.

LAMP is UIS’s literacy assessment for developing countries. It is derived from the methodologies used for OECD’s International Adult Literacy Survey (IALS). LAMP is based on a sample survey of adults (aged 15 years or more) to identify the full range of literacy – from the most basic reading and writing to the skills needed to participate fully in a learning society. The target population is the whole population of adults currently living in the country. The background questionnaire collects information such as family background and characteristics (parental education and language), individual attributes (age, gender, language, educational attainment and employment status), participation in education and training, and literacy activities including the use of information and communication technology and other literacy practices. In addition, variables on human and social capital, quality of life and a series of questions specific to the domains being measured by the assessment may be incorporated.

A ‘filter-test’, based on a selected subset of items drawn from IALS and from LAMP common items, is used to assign individuals to a low skilled or a high skilled group. Low skilled individuals will be administered a small number of low difficulty items selected from the IALS/LAMP common item pools. These items will allow individuals to be placed on the LAMP proficiency scales and the component results to be linked to these scales. Higher skilled individuals will receive these items and an additional set relevant to the national socio-economic situation.

For lower skilled respondents:

**Level 1** indicates persons with very poor skills, where the individual may, for example, be unable to determine the correct amount of medicine to give a child from information printed on a package.

**Level 2** respondents can deal only with material that is simple, clearly laid out, and in which the tasks involved are not too complex. It denotes a weak level of skill, which is often not apparent in everyday activity. It identifies people who can read, but test poorly. They may have developed coping skills to manage everyday literacy demands, but their low level of proficiency makes it difficult for them to face novel demands, such as learning new job skills.

**Level 3** is considered a suitable minimum for coping with the demands of everyday life and work in a complex, advanced society. It denotes roughly the skill level required for successful secondary school completion and college entry. Like higher levels, it requires the ability to integrate several sources of information and solve more complex problems.
Levels 4 and 5 describe respondents who demonstrate command of higher-order information processing skills.

The component skill measures that make up reader profiles are measured by:

1. **Alphanumeric perceptual knowledge and familiarity:** Recognise the letters of the alphabet and recognise single digit numbers; some of the items are very simple.

2. **Word recognition:** Recognise common words that appear frequently in print. These common words are expected to be in the listening/speaking lexicon/vocabulary of an individual who is a speaker of the target language.

3. **Decoding and sight recognition:** Produce plausible pronunciations of novel or pseudo words by applying knowledge of the sight-to-sound correspondences of the writing system, and do this accurately, rapidly and with ease.

4. **Sentence processing:** Process simple written sentences and apply language skills to comprehend – accurately, rapidly and with ease.

5. **Passage reading:** Process simple written passages and apply language skills to comprehend – accurately, rapidly and with ease.

Data obtained in the components assessment cannot be compared between countries or groups with different languages as the language learning process may also differ.

High-skilled individuals are given a set of common items (IALS and LAMP) that will be used to relate national literacy and numeracy proficiency to LAMP scales for the purposes of international comparison, and a set of nationally-specific items.

The assessment is generally being conducted in more than one language to reflect official and majority languages. The test questions relate to routine tasks such as reading a medicine bottle or a government circular, asking respondents to read or interpret a text and say what action they would take as a result. For the purposes of information literacy LAMP includes both a detailed assessment of literacy and numeracy skills, and data on the potential access to information in the home through media and technology as well as the availability of books and participation in education. In particular LAMP considers information literacy as an active skill – an area which is often missing from tests which adopt a more passive approach to measuring literacy. Thus LAMP considers whether respondees can write personal letters or emails, produce maps, charts or diagrams, write letters to officials, and write messages at work.

LAMP is currently being piloted in El Salvador, Mongolia, Morocco, Niger, and Palestine, with Jordan, Vietnam, and Peru to follow in a second wave. It is ultimately expected that LAMP data along with that from IALS and other literacy assessments will form the official UNESCO and UN data for monitoring progress to the Millennium Development Goals and Education for All. This will position information literacy and its measurement at the heart of the international agenda for education and poverty alleviation.
BACK TO LIBRARIES AGAIN!

In rural or small urban communities teachers and librarians are most likely to have a sense of what people like to read, whether they can read, and what might be available for them. It has been suggested here that, when an illiterate person requires the services of an ‘information broker’ to help him read or understand a document, a librarian is one of the most neutral; brokers he can find. Librarians thus may be amongst the best placed to understand what literacy and information literacy mean as well as the skills levels in their communities. They should also, as has been argued above have the statistics to know how many people in their community are literate and to what degree. If libraries are to develop their services; knowing their readership, assuming a role in access to information, or assuming a role in education, they need this information.

Information literacy began as a library initiative in the US and assessment has found a role in many universities in many countries. Higher Education institutions and national authorities in many countries surely have an interest in promoting information literacy skills along the lines set out in this paper. If libraries do not feel they have the capacity to work on information literacy they should certainly be asking for the information from National Statistics Offices, Ministries of Education or other agencies.

CONCLUSIONS

I began by establishing the key role of information literacy in relation international development goals. In the latter half of this article I have also show how information literacy indicators are central to UNESCO statistics for monitoring these international goals and as part of LAMP they are part of UNESCO Institute for Statistics most important single strategic project. Information literacy is thus central to both international policy and international statistics.

I have highlighted the difficulties that UIS and IFLA have found in collecting international library statistics, which extends to doubts as to whether many developing countries have the bare minimum figures needed to run national library services. UIS would use global library statistics to emphasise the role that libraries play in poverty reduction through addressing peoples education needs, helping them to identify employment opportunities, or to evaluate various health treatments. If UIS was able to produce international statistics showing what libraries already do in these areas, as well as simply how many people use libraries for different reasons then libraries would be seen by all international agencies as playing a central role in national and community development. Being seen to contribute to development and poverty alleviation means that libraries in all countries would be able to access more funding to support their work, and librarians’ achievements in supporting their communities would be recognised.
Of course such statistics would also allow comparisons to be made between different countries. People in national and international agencies would begin to discuss the optimal number of libraries per head of population or the appropriate number of books per head of population able to access them. Naturally such figures would be gross generalisations, but out of this would emerge concern that libraries should have enough books and should reach all communities. This again means more resources and more highlighting of good practice.

In launching the UIS/IFLA pilot survey on libraries UNESCO Institute for Statistics has thus signalled its willingness indeed its belief in libraries as part of the future of the information society, but we can only work to argue and demonstrate their contribution if libraries, throughout the whole world, provide us with the statistics in the first place.