

---

Title	The construct of media and information literacy in Singapore education system: Global trends and local policies
Author(s)	Tzu-Bin Lin, Intan Azura Mokhtar and Li Yi Wang
Source	<i>Asia Pacific Journal of Education</i> , 2013, 1-15
Published by	Taylor & Francis

---

This document may be used for private study or research purpose only. This document or any part of it may not be duplicated and/or distributed without permission of the copyright owner.

The Singapore Copyright Act applies to the use of this document.

This is an Accepted Manuscript of an article published by Taylor & Francis Group in *Asia Pacific Journal of Education* on 20/12/2013, available online:  
<http://www.tandfonline.com/10.1080/02188791.2013.860012>

**Notice:** Changes introduced as a result of publishing processes such as copy-editing and formatting may not be reflected in this document. For a definitive version of this work, please refer to the published source.

## **Authors:**

1<sup>st</sup> author:

Dr. Lin, Tzu-Bin

Department of Education,

National Taiwan Normal University.

email: [tzubin.lin@ntnu.edu.tw](mailto:tzubin.lin@ntnu.edu.tw)

2<sup>nd</sup> author:

Dr. Intan Azura Mokhtar

Policy and Leadership Studies Academic Group, National Institute of Education, Singapore

Email: [Intanazura.mokhtar@nie.edu.sg](mailto:Intanazura.mokhtar@nie.edu.sg)

3<sup>rd</sup> author:

Dr. Wang, Li Yi

Office of Education Research, National Institute of Education, Singapore

Email: [liyi.wang@nie.edu.sg](mailto:liyi.wang@nie.edu.sg)

## **Corresponding author:**

Dr. Lin, Tzu-Bin

Address: 17F-11, No. 292, Sec. 4, Meichuan West Road, Taichung City, Taiwan

Tel: +886-921021163

Email: [odin.london@gmail.com](mailto:odin.london@gmail.com)

# **The construct of media and information literacy in Singapore education system: global trends and local policies**

## **Abstract**

This paper discusses the representation of information literacy and media literacy in the Singapore education discourse as part of its 21st century competencies framework. Through examining the conceptual definitions, purposes/aims, and means of these two significant 21<sup>st</sup> century competencies in the global context and the Singapore education policy, the authors argue that despite both information literacy and media literacy have been widely recognized as crucial skills in the knowledge-based economy, they are perceived as separate concepts, given differentiated emphasis, and implemented using similar approaches by various governmental and educational agencies in Singapore. To facilitate the acquisition of these critical competencies, this paper argues that an overarching framework featuring the seamless integration of information and media literacy in school curricula and public education needs to be in place to clarify conceptual concerns and guide its practical implementation.

**Keywords: information literacy, media literacy, 21<sup>st</sup> century skills, education policy, Singapore**

## **1. Introduction**

At the beginning of the 21<sup>st</sup> century, various countries started crafting the required and essential skills for their citizens to survive in the new knowledge-based economy. Singapore is no exception and its first wave of preparation for the 21<sup>st</sup> century began in late 20<sup>th</sup> century. To equip citizens with these 21<sup>st</sup> century skills, a major means is through education. The new

education reform agenda, “Thinking Schools, Learning Nation”, was announced by the former Prime Minister Goh Chok Tong in 1997 (Ng, 2008). In the same year, the Ministry of education (MOE) Singapore crafted the *Information Literacy Guidelines* (MOE, 1997a) as well as the Masterplan for ICT in Education (MOE, 1997b). In addition, interest in media literacy and 21<sup>st</sup> century competencies brewed in the education sector, with more research studies being carried out in the area. The 21<sup>st</sup> Century Competencies Framework, which was introduced in 2010 (MOE, 2010), detailed the desired outcomes of the education system for the 21<sup>st</sup> century. Among the competencies listed down was the ability for a student to be both information and media literate.

This paper aims at exploring how information literacy and media literacy is represented in the Singapore education discourse as part of its 21<sup>st</sup> century competencies framework. Currently, information literacy and media literacy co-exist in Singapore’s education discourse but there is little related work attempting to clarify these two concepts in Singapore or to bridge them to propose an overarching framework that has been proposed globally. In what way are these two terminologies identical or different in the Singapore educational context? This paper attempts to answer this question through the review of related official documents. This paper starts with a review of the literature on the global scale regarding information literacy and media literacy, which then, moves on to the focus on the Singapore context to explore how various governmental agencies in the country define information literacy and media literacy. By reviewing the international literature and relevant official documents in Singapore, readers are provided with an overview of how information literacy and media literacy are defined, understood and implemented in the Singapore education system.

The Singapore education system has been identified as an exceptional one with commendable student outcomes, not just in Asia, but in the world, by various researchers (Stewart, 2012)

and organisations such as McKinsey (Mourshed, Chijioke, & Barber, 2010). How Singapore's Ministry of Education plans and introduces information literacy and media literacy in the school curriculum, and how they are promoted in schools can be a meaningful case study to those who are interested in information and media literacy in an education system which has been consistently recognised as one of the more exceptional ones globally.

## **2. Information literacy and media literacy: A review of literature**

We start with the discussion on information literacy first in this section and move to media literacy. For each concept, we introduce it by answering the three questions: What is the context of advocating this literacy concept and what is the current trend? How do researchers define the concept? What are the key purposes and means of this literacy practice?

### ***2.1 Information literacy in the global context***

The concept of information literacy, emerging with the advent of information technologies in the early 1970s, has grown, taken shape, and strengthened to become recognized as the critical foundation for learning in the 21st century (Bruce, 2004). With information being increasingly digitized, organizations and countries becoming more networked, and information and communication technologies rapidly developing, transforming, and penetrating, the information environment becomes increasingly complex. Because of the escalating complexity of this environment, individuals are faced with diverse and abundant information choices in their studies, in the workplace, and in their personal lives (ACRL, 2000). To respond to an ever-changing environment, individuals need more than just a knowledge base, they also need techniques for exploring it, connecting it to other knowledge

bases, and making practical use of it (ALA, 1989). Information literacy is thus recognized as not only a necessary personal competency in order to navigate through the deluge of information that each individual faces (Mokhtar et al., 2009), but also a decisive factor to lead to a nation's economic success in the information age (Doyle, 1994).

### *2.1.1 Various definitions*

The initial use of the term “information literacy” can be attributed to Zurkowski (1974), who described information literate individuals as those who are trained in the application of information resources to their work. Other descriptions of information literacy in the area of education have been largely derived from the one provided by the American Library Association (ALA), in which information literacy is defined as a set of abilities requiring individuals to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (ALA, 1989). In the ALA's description, information literacy is a means of personal empowerment that allows individuals to verify or refute expert opinion and to become independent seekers of truth. It provides individuals with the ability to build their own arguments and prepares them for lifelong learning. It also deepens individuals' capacities to understand and position themselves within larger communities of time and place. On the basis of the ALA definition, the Association of College and Research Libraries (ACRL) further defined that “Information Literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and needed to find, retrieve, analyze, and use information” (ACRL, 2000). When the American Association of School Librarians (AASL) and Association for Educational Communications and Technology (AECT) produced their landmark publication “Information Power: Building Partnerships for Learning” in 1998 (AASL & AECT, 1998), it subsequently became the basis for information literacy standards and guidelines framework

in numerous educational institutions across several countries, such as the ACRL “Information Literacy Standards for Higher Education” and Council of Australian University Librarians (CAUL) “Information Literacy Standards” (CAUL, 2001). Information literacy has also been interpreted as “the ability to access, evaluate, and use information from a variety of sources” (Doyle, 1992). An information literate person is someone who has acquired the skills to retrieve information from a variety of sources to meet his/her needs, and is able to make informed decisions and solve problems effectively. He or she is able to go through a defined process of information seeking, evaluation and use for fulfilling an information need or purpose.

### *2.1.2 Purposes/Aims*

The complex and evolving information environment challenges educators to prepare students to cope with complex and unforeseeable changes. Educators recognize the need for students to engage in the information environment as part of their learning process and attempt to provide students with the attitudes, knowledge and skills they require as active members of an information society. It is by being information literate that students can learn to become dynamic and independent learners and thinkers (Mokhtar, Foo, & Majid, 2007). Information literacy has been seen as an indispensable asset for students in the pursuit of lifelong learning, personal empowerment, and professional development. For educational systems pursuing exceptional student outcomes, information literacy has become one of the essential educational goals to assess and evaluate a student’s aptitude for critical thinking, decision making, and problem solving in this ever-changing competitive world (Li & Lester, 2009).

### *2.1.3 Means*

The increasingly greater attention paid to information literacy education spawned the development of models and standards for the integration of information literacy skills into school curricula, by which these skills can be imparted to students effectively. Among the established models and standards, five have been proven to be particularly helpful to educators across the world to develop localized models and standards of information literacy to meet the needs of specific educational contexts (see Bruce, 2004). These five mainstream information literacy models and standards have different interpretations with regard to the competencies of information literacy in the educational setting (Table 1 & Table 2).

[Insert Table 1 and Table 2 here]

In addition, it is also interesting to observe how the emphasis on information literacy has somewhat evolved into 21<sup>st</sup> century competencies. The American Association of School Librarians (AASL) published its “Standards for the 21<sup>st</sup> Century Learner” in 2007 (AASL, 2007), which gave recognition to how information literacy has evolved from the ability to use reference resources to the ability to find information through various platforms and modes. This, in turn, requires the development of various skills such as digital, visual, textual and technological literacies, in addition to information literacy. A couple of years later, the Partnership for 21<sup>st</sup> Century Skills, a US-based national organisation that advocates for 21<sup>st</sup> century readiness for every student, introduced their “Framework for 21<sup>st</sup> Century Learning” (Partnership for 21<sup>st</sup> Century Skills, 2009). The Framework describes the “skills, knowledge and expertise students must master to succeed in work and life”, which they further describe as a blend of content knowledge, specific skills, expertise and literacies.





*Figure 1: 21<sup>st</sup> Century Student Outcomes and Supporting Systems (Partnership for 21<sup>st</sup> Century Skills, 2009)*

In the P21 framework, it is seen that information, media and technology skills or literacies are inextricably intertwined and complement the slew of other skills and expertise that a student in the 21<sup>st</sup> century ought to possess.

## ***2.2 Media literacy in the global context***

The earliest notion of a preliminary concept on media literacy can be traced back to the discrimination approach proposed by F. R. Leavis and Denys Thompson in 1933 in the UK (Buckingham, 2003) due to the uneasy atmosphere brought by the growth of popular cultural forms. The aim of media literacy education is to strengthen the influence of high culture to fight against the increasing growth of popular culture in printing media at that time (Lin, 2010). Therefore, there is a strong cultural value flavour in its origin.

In 1950s, media literacy was introduced to the USA as a concept with the acknowledgement of the increasing impact of mass media such as radio and television on people's daily life and schooling (Schwarz, 2005). Up to now, media literacy has not been fully integrated into school curriculum in the USA. Each time there is a new media technology that causes collective anxiety in the society, the importance of media literacy is brought back to the educational agenda (see Lin, 2010). Take East Asia as an example, where the growing interests in media literacy in various countries such as China (including Hong Kong), Taiwan, Japan and Korea since late 1990s (Cheung, 2009) comes from the emerging new media technologies, including the Internet, that cause cyber cafe phenomenon. In Taiwan, media literacy education is viewed as a practice with potential to liberate and empower (Ministry of Education Taiwan, 2002). As Cappello, Felini and Hobbs (2011) point out, the current media literacy education strikes a balance between discrimination/protection and empowerment approaches (Leaning, 2009; Lin, 2010) and the recognition of media as an aspect of social environment is a driving force for the recent development of media literacy in the world.

Three terms, including media education, media literacy, and media literacy education, are widely used in the discussion of media literacy. Some may consider that these terms are interchangeable, but a common understanding is that media (literacy) education refers to the process of learning about the media and media literacy is the outcome (Buckingham, 2003).

Media literacy is recommended as an essential part of modern citizenship in the Grunwald Declaration on media education (UNESCO, 1982). However, besides citizenship education (Burroughs, Brocato, Hopper, & Sanders, 2009; Lavender, 2003), media literacy in different countries may be associated with various educational practices such as civic engagement (Goodman, 2003), English/Mother Tongue education (Buckingham & Domaille, 2009), multicultural education (Cortés, 2000) and media/film studies.

### *2.2.1 Various definitions*

Like other concepts in social science, there are various definitions of media literacy. Among them, the definitions from the Office of Communications (Ofcom) UK and the National Association for Media Literacy Education (NAMLE) USA are popular ones. Ofcom (2004) defines media literacy as “the ability to access, understand and create communications in a variety of contexts”. The basic definition of media literacy by NAMLE (n.d.-a) is: “seen to consist of a series of communication competencies, including the ability to access, analyze, evaluate, and communicate information in a variety of forms, including print and non-print messages”. Based on these two definitions, media literacy refers to a set of competencies that enable individuals to access, analyse, evaluate, and create communications in different media platforms. It is crucial to point out, as NAMLE defines, that media here covers printing and non-printing ones.

The concept of media literacy is an expanded version of the traditional literacy practice (Burn & Durran, 2007; Cappello, et al., 2011). In the era of the great presence of printing media, such as books, magazines and newspapers, a literate individual needs to know how to read as well as how to write. Then, the mutual communication is possible. With the advent of new and social media such as Internet, digital TV and smart phones, the media messages are no longer in written forms. Instead, they are in “a combination of various languages” such as visual images, audio and written language (Buckingham, 2003). Therefore, individuals need different competences to make mutual communication possible. Media literacy is the collective title for these competences. Two major components are identified in the discussion of media literacy: one is reading the media message, and the other is writing or producing media content (see Chen, Wu, & Wang, 2011). Across different mediums, the component of reading media messages is related to accessing, understanding/analysing and evaluating

media information, while the component of producing media content is about creating and communicating information.

### *2.2.2 Purposes/Aims*

NAMLE sums up the purposes of media literacy education in one sentence as “the purpose of media literacy education is to help individuals of all ages develop the habits of inquiry and skills of expression that they need to be critical thinkers, effective communicators and active citizens in today’s world” (NAMLE, n.d.-b). Livingstone, Van Couvering and Thumim (2004) offer a more detail set of purposes of media literacy which we summarize it as following three points. The first one is on democracy, participation and active citizenship. It refers to a media-literate individual is someone who can make informed decision and actively participate in various forms of discussion in public domain. The second one is on knowledge economy, competitiveness and choice. To elaborate further, this point is to indicate that, in the era of knowledge economy, a media-literate individual and society will be more innovative and competitive. Moreover, the society is able to offer richer choices to its citizens regarding the sources of information. The last point is about lifelong learning, cultural expression and personal fulfilment. Living in a world full of mediated messages and various channels of media, a media-literate individual is able to apply critical and expressive skills to achieve a meaningful life and to collectively create an informed, creative and ethical society.

As we indicated above, media literacy has a close link to citizenship education and is considered as a key competence of contemporary citizen for a better engagement in the democratic process (Burroughs, et al., 2009; Goodman, 2003; Hobbs, 1998). Moreover, one key aim of media literacy is to help individuals become creative and innovative citizens who are able to respond to the need of knowledge economy in contemporary society. Living in a

knowledge-based society, lifelong learning is crucial to all members within the society (Livingstone et al., 2004).

### 2.2.3 Means

As it is stated by Ofcom (2004, p. 5), “formal education plays a vital role in laying the foundations of media literacy”. The major means of cultivating media literacy is through school curriculum. Media literacy is taught as an independent subject such as media studies or as a cross-curricular theme integrated in various subjects like mother tongue, social studies, and citizenship. However, in recent years, some researchers (Dennis, 2004; Livingstone, et al., 2004) have noticed that most research and literature on media literacy are focusing on the youths and children rather than adults. However, the dominant discourse in this field is still on how to teach the youths and children media literacy through schooling.

## 3. 21<sup>st</sup> Century Competencies in the Singapore Education System

In March 2010, the Singapore Ministry of Education (MOE) introduced a new framework to “enhance the development of 21<sup>st</sup> century competencies” in students (MOE, 2010). This was timely, considering that the P21 framework was introduced a year earlier. The framework revolved around the four desired student outcomes mentioned of *confident person*, *self-directed learner*, *active contributor*, and *concerned citizen*. The *21<sup>st</sup> Century Competencies (21CC) Framework* identified three core skills that students ought to have in order to fulfil the four desired student outcomes: (i) information and communication skills; (ii) civic literacy, global awareness, and cross-cultural skills; and (iii) critical and inventive thinking (Figure 1). Embedded within these outcomes and skills are social and emotional competencies of *self-awareness*, *self-management*, *social awareness*, *relationship*

management, and responsible decision-making. At the very the core of this framework were values of respect, responsibility, integrity, care, resilience, and harmony, which are the values embedded in the Singapore school curricula.



Figure 2: 21<sup>st</sup> Century Competencies Framework (MOE, Singapore, 2010)

The framework seeks to instil values and skills to complement knowledge acquisition and creation, where these, once again, include independent learning, creative and critical thinking, information evaluation, communication, and in addition, civic consciousness and cross-cultural awareness and sensitivity. However, how exactly the framework is to be implemented in the school curriculum is still not quite clear. According to MOE, the specific expectations and learning outcomes are to be articulated across the various school levels in the upcoming curriculum review that is slated to take place between 2012 and 2014. Since information and communication skills are recognised to be one of the three core skills that a

student in the 21<sup>st</sup> century is expected to possess, the seamless integration of information and communication skills in the school curriculum is necessary.

#### **4. Information literacy and media literacy in Singapore: An analysis of policy discourse**

##### ***4.1 Information literacy in the Singapore context***

By the next century, students will live in a world characterized by changes that will require individuals to be able to continuously improve themselves through learning. A new set of basic learning skills will be needed to equip students to live in this changing world with dynamic learning requirements. Education must encourage creativity, independent learning and self-responsibilities for learning. An important facet of this goal is helping pupils to learn how to find the information needed to make sound decisions and to solve problems (MOE, 1997a). This shift in paradigm has been the driving force behind the new focus of the Singapore education system, aiming to nurture students into active learners with critical thinking skills while developing a creative and critical thinking culture (Tan & Theng, 2006). To achieve this goal, the School Libraries Unit (SLU) of the Curriculum Planning and Development Division (CPDD) of the MOE published the Information Literacy Guidelines (ILG) (MOE, 1997a) and the Information Literacy Supplementary Materials (MOE, 1997b) as the framework on teaching “learning how to learn and clear thinking”.

These two documents provide practical instructions and specific directions for information literacy education in Singapore. The Information Literacy Guidelines cover recommendations on how the program could be implemented within the school curriculum, rubrics for standards on performance information literacy, sample lesson plans, and pupil performance

standards for information literacy skills under specific themes for specific grade levels of students. The Information Literacy Supplementary Materials contain six sample lesson plans for different subjects specifically for the use of secondary school students, together with some recommended activities of how information literacy skills can be integrated into various subjects. Another relevant publication on information literacy by the MOE is the Extensive Reading and Information Literacy (ERIL) Programme, of which the focus is on the incorporation of information literacy skills in the English language curriculum in secondary school with the emphasis on reading (MOE, 1997c).

Using the guidelines, the MOE also proposed the Information Literacy Curriculum. The curriculum interprets information literacy as a conception comprising two major domains: Skills Domain and Attitudes Domain. Under each domain there are a number of competency areas. In each area the MOE lists certain skills and knowledge to be obtained by students. The guidelines also outline 11 expected learner outcomes:

- Able to recognize the need for information and define the information needed for problem-solving and decision-making;
- Able to identify potential resources of conventional and electronic formats from the school library and from other sources outside the library;
- Apply different search strategies to retrieve information using conventional aids and current technologies;
- Review, select, interpret and evaluate relevant information critically and make meaning of this information;
- Organize and present information effectively and creatively;
- Appraise the process and product of an information research;
- Read for information and pleasure, seeing it as enriching their learning experience;
- Demonstrate initiative information problem-solving and openness to learning;
- Continually improve and update their knowledge;



- Collaborate with others for information problem-solving; and
- Practise responsible and ethical behaviour.

The comparison of the five commonly used models and standards and the MOE Singapore's information literacy guidelines shows that the MOE Singapore's understanding about and interpretation of the main areas of information literacy competencies are highly similar but not identical from the ones described in the five models and standards (Table 3). In the Skills Domain, for example, the MOE Singapore' guidelines do not specify the process of integrating the selected new information into the established knowledge base before the needed information is used, organized, and synthesized to solve a specific problem.

[Insert Table 3 here]

Other than the ILG that was published in 1997, there has been no other set of similar guidelines or framework that has been planned for or implemented in the education sector for the decade that followed. It was only in 2008 that a major review of the English Language (EL) syllabus for primary and secondary school levels was carried out, and in which information literacy was introduced in the revamped syllabus. As part of the revamped EL syllabus, it was recognised that resource-based learning and the development of information, media and visual literacy skills are essential in the development of literacy, language and literary skills (MOE, 2008).

In addition, it must also be recognised that when the ILG was published in 1997, it was conceived at the same time as the *Information-Communication Technology (ICT) Masterplan I*. It is interesting to note that although there were substantial initiatives in promoting and infusing information literacy skills in the school curriculum, there was still lack of awareness of and apathy towards the importance of information literacy in teaching and learning

(Mokhtar, Foo & Majid, 2007), until lately. However, IT initiatives and skills have been more widely accepted and adopted into the education system because of their more apparent utility and immediate applications in this technology-driven era. This disparity is despite both the MOE-based information literacy and the IT initiatives were introduced around the same time in 1997.

It is only in the past two to three years has information literacy been more widely recognized to be necessary to be included not just in the school curriculum, but in public education as well. This initiative has largely been spearheaded by the National Library Board with professional inputs by academics from Nanyang Technological University's Wee Kim Wee School of Communication and Information.

#### ***4.2 Media literacy in the Singapore context***

In the Singapore context, media literacy appears as one of the initiatives to make Singapore “a global media city” by the Media Development Authority (MDA) of Singapore (MDA, 2003). MDA (n.d.) views media literacy as “a life skill that is essential for work, learning and play”. In the Singapore education system, unlike information literacy which has been in the education policy since 1997, media literacy has less supported from the MOE. There is no single guideline for media literacy although media literacy is mentioned as one of the literacy skills to enhance the teaching of various language competences in the English Language Syllabus 2010 Primary & Secondary (Express/ Normal Academic) (MOE, 2008).

Meanwhile, media literacy is represented in a document mapping out the 21<sup>st</sup> century teacher education in Singapore as a component of the 21<sup>st</sup> century skill sets and key development areas for students. Because of its importance to students, it becomes a main consideration in

the model of the 21<sup>st</sup> century teachers' training proposed by the National Institute of Education (NIE, 2009). NIE is the only teaching preparation higher education institute working closely with the MOE and schools in Singapore. Thus, its teacher training model has been a collaborative effort between the Ministry of Education Singapore, NIE and schools. Therefore, it can be argued that the importance of media literacy is recognised in the education system in Singapore.

Media literacy is defined in Singapore by MDA (n.d.), MOE (2010, p. 128) and NIE (2009, p. 31) as follows:

MDA:

Media literacy refers to the ability to critically assess information that is received daily via different media platforms. When a person is media literate, he would be able to read, analyse and interpret messages, regardless of whether he is using media to gain information, for entertainment or for educational purposes.

MOE:

The ability to access, analyse, evaluate and create information in a variety of forms and media.

NIE:

Teachers should be adept in using multiple media, such as text, video, audio, and animation to facilitate effective teaching and learning. Advances in digital technologies have integrated multiple media using graphical and interactive interfaces. This necessitates new literacies to decipher, interpret and communicate using visual imagery such as icons, as well as new man-machine interactive modes such as the technology used in touch-screen handphones and interactive whiteboards.

MDA's definition on media literacy focusing solely on reading, analyzing and interpreting media messages only represents the "reading" part of media literacy. Following MDA's definition, a media literate person is an individual who can critically read, analyse and interpret media message for various purposes. This definition, compared to those by NAMLE

and Ofcom, makes a two-way communication process with reading and writing in the field of media literacy to one-way which is on reading only. Meanwhile, MOE's definition of media literacy not only includes the access and analysis of media but also move to "create" information. This feature is also captured by NIE's definition of media literacy while describing one of key functions of media literacy is to "communicate" through various media. In order to communicate, an individual needs to be able to read and produce. It can be viewed as implying media production which leads to a two-way process and moving beyond MDA's definition. Moreover, in the definition by NIE, a key feature of media literacy is the multimodality of contemporary media, i.e., the various modes in modern communication. Text, video, audio and animation are mentioned although it is necessary to point out that animation is not in the same conceptual category as the rest three. Compared to MDA's definition, NIE's interpretation of media literacy includes more details in terms of modality. As to the implementing plan, some key learning points related to media literacy are stated in the English syllabus. They are as follows (MOE, 2010):

- teachers will facilitate students to "construct meaning from visual texts (e.g., pictures, diagrams, charts, icons, maps, graphs, tables)" and "identify and analyse media techniques" (p. 33).
- teachers will "provide opportunities for pupils to plan, organise and deliver appropriately their ideas in a variety of media and forms, such as through the use of posters and planned multimedia and spontaneous presentations" (p. 46).

These learning points identified by MOE capture the most significant aspects of media literacy education, i.e. reading and producing. After reviewing definitions and learning points on media literacy from MDA, MOE and NIE, we argue that they collectively are able to represent what media literacy is although each definition is not complete. Therefore, there is still a need to consolidate various definitions of media literacy into one in the local Singapore context.

On the 1<sup>st</sup> August 2012, MDA announced the launch of Media Literacy Council (MLC) that is going to promote media literacy and cyber wellness based on the previous work done by MDA (2012). It is a milestone in terms of the development of media literacy education in Singapore. This council has 21 members representing various interest groups including education. The creation of MLC proves the determination of Singapore government in implementing media literacy extensively – both in schools and the general public.

## **5. Conclusion**

This paper aims at exploring the representation of information literacy and media literacy in the Singapore education discourse as part of its 21st century competencies framework implementation in the education system. In the global context, information literacy and media literacy (education) have been interpreted, presented, and implemented in various ways. Although there is backlash in the UK calling for ‘back to basics’ to refocus on traditional academic subjects such as English literature, Maths and sciences rather than teaching information or media literacy (Laughey, 2011), this phenomenon does not exist in Singapore because, compared to the UK and the USA, Singapore is a late-comer in the field of teaching information and media literacy. In the era of information society, Singapore only starts to realize the need to teach their students with new competencies in 1990s. Information and media literacy are identified as important but still in its infancy in Singapore education system.

In Singapore, the MOE has provided conceptual guidelines, modelling programs, and instructional materials as part of its effort to embed information literacy education into school

curricula for students of different grades since a decade ago, and further into public education in more recent years. Comparatively, media literacy has drawn less attention from the local authority, as indicated by the absence of prescribed conceptual guidelines and supplementing materials. Regardless of its presence in the recent policy discourse and the emphasis given to the 21<sup>st</sup> century teacher education in NIE, media literacy is still an unclear concept given the various operating interpretations in the local educational setting. There is a need to consolidate these interpretations of media literacy into one to fit the specific educational context before detailing the strategies in practice. While acknowledging the increasingly significant roles information and media literacy are playing in the Singapore education system, it must be noted that an overarching framework featuring the seamless integration of both information and media literacy in the school curriculum needs to be in place to clarify conceptual concerns and guide its practical implementation. We conclude that a good integration of both media and information literacy will make this local initiative work out more efficiently among the already packed Singapore curriculum.

## References:

- American Association of School Librarians (AASL) and Association for Educational Communications and Technology (AECT) (1998). *Information power: Building partnerships for learning*. Chicago, Illinois: American Library Association (ALA).
- American Association of School Librarians (2007). *Standards for the 21<sup>st</sup> century learner*. Chicago, IL: American Association of School Librarians.
- American Library Association. (1989). *Presidential committee on information literacy: Final report*. Washington, D. C. Retrieved from <http://www.ala.org/acrl/publications/whitepapers/presidential>.
- Association of College & Research Libraries. (2000). *Information literacy competence standards for higher education*. Chicago, Illinois: Association of College & Research Libraries.
- Bruce, C. (2004). Information literacy as a catalyst for educational change: a background paper. In P. A. Danaher (Ed.), *Lifelong Learning: Whose Responsibility and what is Your Contribution?* Refereed Papers from the 3rd International Lifelong Learning Conference, Yeppoon, Central Queensland, Australia, 13 - 16 June 2004.
- Buckingham, D. (2003). *Media education: literacy, learning and contemporary culture*. Cambridge: Polity.
- Buckingham, D., & Domaille, K. (2009). Making media education happen: a global view. In C. K. Cheung (Ed.), *Media education in Asia* (pp. 19-30). Dordrecht: Springer.
- Burn, A., & Durran, J. (2007). *Media literacy in schools: practice, production and progression*. London: Paul Champman Publishing Ltd.
- Burroughs, S., Brocato, K., Hopper, P. F., & Sanders, A. (2009). Media literacy: a central component of democratic citizenship. *The Educational Forum*, 73(2), 154 - 167.
- Cappello, G., Felini, D., & Hobbs, R. (2011). Reflections on Global Developments in Media Literacy Education: Bridging Theory and Practice. *Journal of Media Literacy Education*, 3(2), 66-73.
- Chen, V., Wu, J., & Wang, Y. (2011). Unpacking new media literacy. *Journal of systemics, cybernetics and informatics*, 9(2), 84-88.
- Cheung, C. K. (2009). Introduction. In C. K. Cheung (Ed.), *Media education in Asia* (pp. 1-12). Dordrecht: Springer.
- Council of Australian University Librarians (2001). *Information literacy standards*. Canberra, Australia: Australian National University.
- Cortés, C. E. (2000). *The children are watching: how media teach about diversity*. New York: Teachers College Press.
- Dennis, E. E. (2004). Out of sight and out of mind : the media literacy needs of grown-ups. *American Behavioral Scientist*, 48(2), 202-211.
- Doyle, C. (1992). *Outcome measures for information literacy within the national education goal of 1990: Final report to national forum on information literacy*. Springfield, VA: ERIC Document Reproduction services.
- Doyle, C. (1994). *Information literacy in an information society*. Eric Digests. Retrieved from the ERIC database.
- Goodman, S. (2003). *Teaching youth media: a critical guide to literacy, video production, and social change*. New York: Teachers College Press.

- Hobbs, R. (1998). Building citizenship skills through media literacy education. In M. Salvador & P. Sias (Eds.), *The Public Voice in a Democracy at Risk* (pp. 57 -76). Westport, CT: Praeger Press,.
- Laughey, Dan. (2011). Media Studies 1.0: Back to Basics. *Media education research journal*, 2(2), 57-64.
- Lavender, T. (2003). Curriculum and teacher training in Scotland. In T. Lavender & B. Tufte (Eds.), *Global trends in media education: policies and practices* (pp. 11-36). Cresskill, New Jersey: Hampton Press, INC.
- Leaning, M. (2009). Theories and models of media literacy. In M. Leaning (Ed.), *Issues in information and media literacy: criticism, history and policy* (pp. 1-18). Santa Rosa, CA: Informing Science Press.
- Li, L., & Lester, L. (2009). Rethinking information literacy instructions in the digital age. *The International Journal of Learning*, 16 (11), 569-577.
- Lin, T. (2010). Conceptualising media literacy: discourses of media education. *Media education research journal*, 1(1), 29-42.
- Livingstone, S., Van Couvering, E., & Thumim, N. (2004). *Adult Media Literacy - A review of the research literature on behalf of Ofcom*. London, UK: London School of Economics and Political Science. Retrieved from <http://dera.ioe.ac.uk/5283/1/aml.pdf>
- Media Development Authority, Singapore. (2012). *New council to oversee cyber wellness, media literacy initiatives*. Retrieved from <http://www.mda.gov.sg/NewsAndEvents/PressRelease/2012/Pages/31072012.aspx>
- Media Development Authority, Singapore. (n.d.). *Media literacy*. Retrieved from <http://www.mda.gov.sg/Public/PublicEducation/Pages/MediaLiteracy.aspx>
- Media Development Authority, Singapore. (2003). *Media 21: transforming Singapore into a global media city*. Singapore: Media development Authority of Singapore.
- Ministry of Education, Singapore. (1997a). *Information literacy guidelines*. Languages and Library Branch, Curriculum Planning and Development Division. Singapore: Ministry of Education.
- Ministry of Education, Singapore. (1997b). *Information literacy supplementary materials*. Languages and Library Branch, Curriculum Planning and Development Division. Singapore: Ministry of Education.
- Ministry of Education, Singapore. (1997c). *The extensive reading and information literacy (ERIL) programme*. Languages and Library Branch, Curriculum Planning and Development Division. Singapore: Ministry of Education.
- Ministry of Education, Singapore. (2008). *English Language Syllabus 2010: Primary and Secondary (Express/Normal Academic)*. Singapore: Curriculum Planning and Development Division, Ministry of Education. Retrieved from <http://www.moe.edu.sg/education/syllabuses/languages-and-literature/files/english-primary-secondary-express-normal-academic.pdf>
- Ministry of Education, Singapore. (2010). *MOE to Enhance Learning of 21st Century Competencies and Strengthen Art, Music and Physical Education*. Retrieved from <http://www.moe.gov.sg/media/press/2010/03/moe-to-enhance-learning-of-21s.php>
- Ministry of Education, Taiwan. (2002). *The White Paper on Media Literacy Education*. Ministry of Education, Taiwan.
- Mokhtar, I. A., Foo, S., Majid, S., Theng, Y. L., Luyt, B., & Chang, Y. K. (2009). Proposing a 6+3 model for developing information literacy standards for schools: a case for Singapore. *Education for Information*, 27, 81-101.
- Mokhtar, I. A., Foo, S., & Majid, S. (2007). Bridging between information literacy and information technology in Singapore schools: an exploratory study. *Education, Knowledge & Economy*, 1 (2), 185-197.



- Mourshed, M., Chijioke, C., & Barber, M. (2010). *How the world's most improved school systems keep getting better*. Retrieved from [http://www.learningteacher.eu/sites/learningteacher.eu/files/how-the-worlds-most-improved-school-systems-keep-getting-better\\_download-version\\_final.pdf](http://www.learningteacher.eu/sites/learningteacher.eu/files/how-the-worlds-most-improved-school-systems-keep-getting-better_download-version_final.pdf)
- NAMLE. (n.d.-a). *Media literacy defined*. Retrieved from <http://namle.net/publications/media-literacy-definitions/>
- NAMLE. (n.d.-b). *Core principles of media literacy education*. Retrieved from <http://namle.net/wp-content/uploads/2009/09/NAMLECorePrinciplesOneSheet2.pdf>
- National Institute of Education, Singapore. (2009). *TE21: a teacher education model for the 21st century: a report by the National Institute of Education, Singapore*. Singapore: The National Institute of Education.
- Ng, P. T. (2008). Thinking Schools, Learning Nation. In J. Tan & P. T. Ng (Eds.), *Thinking Schools, Learning Nation: contemporary issues and challenges* (pp. 1-6). Singapore: Pearson.
- Ofcom. (2004). *Ofcom's strategy and priorities for the promotion of media literacy*. London, UK: Office of Communications. Retrieved March, 20, 2008 from [http://stakeholders.ofcom.org.uk/binaries/consultations/strategymedialit/summary/strat\\_prior\\_statement.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/strategymedialit/summary/strat_prior_statement.pdf)
- Partnership for 21<sup>st</sup> Century Skills (2009). *Framework for 21<sup>st</sup> Century Learning*. Washington, DC: Partnership for 21<sup>st</sup> Century Skills. Retrieved January 15, 2013, from <http://www.p21.org/overview/skills-framework>
- Schwarz, G. (2005). Overview: what is media literacy, who cares, and why? In G. Schwarz & P. Brown (Eds.), *Media literacy: transforming curriculum and teaching* (pp. 5-17). Malden, Massachusetts: Blackwell Publishing.
- Stewart, V. (2012). *A world-class education: learning from international models of excellence and innovation*. Alexandria, VA: Association for Supervision & Curriculum Development.
- Tan, H. M., & Theng, Y. L. (2006). Building information literacy through project work: a case study in Singapore. In C. Khoo, D. Singh & A. S. Chaudhry (Eds.), *Proceedings of the Asia-Pacific Conference on Library & Information Education & Practice 2006*, Singapore, 3-6 April 2006 (pp. 198-206).
- UNESCO. (1982). *Grunwald Declaration on media education*. Grunwald, Germany: UNESCO. Retrieved from [www.unesco.org/education/pdf/MEDIA\\_E.PDF](http://www.unesco.org/education/pdf/MEDIA_E.PDF)
- Zurkowski, P. G. (1974). *The Information Service Environment Relationships and Priorities*. Related Paper 5. National Commission on Libraries and Information Science. Washington, DC: National Program for Library and Information Services.

**Table 1:** The key competencies in the three commonly used information literacy models

Name of IL model	Characteristics
Big 6 information skills (Eisenberg & Berkowitz, 1990)	<p>Learning to be information literate requires practicing the use of the following steps:</p> <ol style="list-style-type: none"> <li>1. Task definition and analysis (Identifying the information needed)</li> <li>2. Creating information seeking strategies (brainstorming possible sources and selecting best sources)</li> <li>3. Locating and accessing information</li> <li>4. Using information</li> <li>5. Synthesizing information (organizing information from all sources)</li> <li>6. Evaluating information (judging the outcome and the process)</li> </ol>
Attributes of an information literate person (Doyle, 1992)	<p>Information literate individuals must acquire and demonstrate the following attributes:</p> <ol style="list-style-type: none"> <li>1. Recognizing accurate information</li> <li>2. Recognizing the need for information</li> <li>3. Formulating questions based on information</li> <li>4. Identifying potential sources of information</li> <li>5. Developing search strategies</li> <li>6. Accessing sources of information</li> <li>7. Evaluating information</li> <li>8. Organizing information</li> <li>9. Integrating new information into existing knowledge</li> <li>10. Using information in critical thinking and problem solving</li> </ol>
Seven faces of information literacy (Bruce, 1997)	<p>The model frames information literacy in terms of seven different ways of seeing and experiencing information use. Learning to be information literate involves becoming aware of the seven ways of experiencing information use:</p> <ol style="list-style-type: none"> <li>1. Information technology experience</li> <li>2. Information sources experience</li> <li>3. Information process experience</li> <li>4. Information control experience</li> <li>5. Knowledge construction experience</li> <li>6. Knowledge extension experience</li> <li>7. Wisdom experience</li> </ol>

**Table 2:** The key competencies in the two commonly used information literacy standards

Name of IL standard	Characteristics
<p>The information literacy standards for student learning (ALA &amp; AECT, 1998)</p>	<p>The nine information literacy standards for student learning are divided into three categories: information literacy, independent learning, and social responsibility.</p> <p>Information literacy:</p> <ol style="list-style-type: none"> <li>1. Accessing information efficiently</li> <li>2. Evaluating information critically and competently</li> <li>3. Using information accurately and creatively</li> </ol> <p>Independent learning:</p> <ol style="list-style-type: none"> <li>4. Pursuing information related to personal interests</li> <li>5. Appreciating literature and other creative expressions of information</li> <li>6. Striving for excellence in information seeking and knowledge generation</li> </ol> <p>Social responsibility:</p> <ol style="list-style-type: none"> <li>7. Recognizing the importance of information to a society</li> <li>8. Practicing ethical behavior in regard to information and information technology</li> <li>9. Participating effectively in groups to pursue and generate information</li> </ol>
<p>The ALA information literacy competency standards for higher education (ACRL, 2000)</p>	<p>Information literate individuals are assessed by twenty-two performance indicators under the following five standards:</p> <ol style="list-style-type: none"> <li>1. Defining and articulating the need for information</li> <li>2. Accessing needed information effectively and efficiently</li> <li>3. Evaluating information and its sources critically and incorporating selected information into his or her knowledge base and value system</li> <li>4. Using information effectively to accomplish a specific purpose</li> <li>5. Understanding many of the economic, legal, and social issues surrounding the use of information and accessing and using information ethically and legally</li> </ol>

**Table 3:** The main areas of information literacy competencies in the Five commonly used Models and Standards and Singapore’s Information Literacy Guidelines

	<b>The Five commonly used Models and Standards</b>	<b>Singapore’s Information Literacy Guidelines</b>
Skills-related Domain	<ol style="list-style-type: none"> <li>1. Define the information that is needed</li> <li>2. Identify the relevant information sources</li> <li>3. Create/ Develop information seeking strategies</li> <li>4. Locate and access information</li> <li>5. Evaluate information</li> <li>6. Integrate selected information into existing knowledge</li> <li>7. Organize/ Use/ Synthesize information to accomplish the initial information task or purpose</li> <li>8. Reflect on the information process and outcome</li> <li>9. Extend/ exploit the newly formed knowledge</li> </ol>	<ol style="list-style-type: none"> <li>1. Define the task (including recognizing the needed information and planning search strategy)</li> <li>2. Locate and retrieve information</li> <li>3. Interpret and evaluate information</li> <li>4. Organize and present information (including developing the end product )</li> <li>5. Evaluate the information research process and product</li> </ol>
Attitudes-related Domain	<ol style="list-style-type: none"> <li>1. Appreciate creative expression of information</li> <li>2. Strive for excellence in information seeking and knowledge generation</li> <li>3. Understand the economic, legal, and social issues surrounding the use of information</li> </ol>	<ol style="list-style-type: none"> <li>1. Appreciation of the value of reading</li> <li>2. Activeness in problem-solving and openness to learning</li> <li>3. Continual improvement of information problem-solving skills</li> <li>4. Collaboration and team work</li> <li>5. Sense of responsibilities as information users</li> </ol>

Word count: 7,098