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Alice Lee & Clement So
Hong Kong (China)

**Media Literacy and Information Literacy:
Similarities and Differences**
**Alfabetización mediática y alfabetización informacional:
similitudes y diferencias**

Abstract

In knowledge society, there is currently a call for cultivating a combination of media literacy and information literacy. This, however, requires cooperation from these two separate fields of study, and uncertainty regarding their boundaries hinders a smooth merger. It is unclear whether they are subsets of each other or separate entities. In this study, we have explored the relationship between these two fields by empirically mapping out their territories and discussing their similarities and differences. We have made use of the Web of Science database to delineate the content and boundary of these two fields. Our findings from 1956 to 2012 show that the two fields have different authors, university affiliations, and journals; they also differ in terms of academic origin, scope, and social concern. Information literacy has a closer tie to library science, while media literacy is more related to media content, media industry, and social effects. Due to their different academic orientations, the two fields adopt different analytical approaches. We have found that media literacy is not a subset of information literacy as some scholars have suggested, although the two fields have similarities. They share the same goal, and their publications overlap in terms of subject areas, countries of origin, and titles. The two fields could find common ground by cooperating together to contribute to the promotion of new literacy in knowledge societies.

Resumen

En la sociedad del conocimiento presenciamos la necesidad de plantear una combinación de alfabetización mediática e informativa que requiere, sin embargo, cooperación entre estas dos áreas de estudio independientes. La incertidumbre que rodea estos vínculos dificulta una fusión homogénea, y no resulta fácil determinar si, cuando hablamos de estas alfabetizaciones, nos referimos a subcategorías o entidades independientes. En este estudio hemos explorado la relación existente entre estas dos áreas de estudio determinando empíricamente sus territorios atendiendo a sus similitudes y diferencias. Para ello, hemos empleado la base de datos bibliográfica Web of Science, con el objetivo de delinear el contenido y los nexos comunes a ambos campos. Los hallazgos realizados entre 1956 y 2012 muestran cómo en cada ámbito se desarrollan distintos autores, afiliaciones universitarias y revistas; asimismo, también difieren en términos de origen académico, alcance e interés social. Mientras que la alfabetización informacional tiene una relación más estrecha con la biblioteconomía, la alfabetización mediática está más conectada con el contenido mediático, la industria de los medios y los efectos sociales que éstos causan. Debido a estas diferencias de orientación académica, ambos campos adoptan enfoques analíticos diferen-

tes. En contra de lo sugerido por algunos expertos, hemos podido determinar que la alfabetización mediática no es una simple categoría de la alfabetización informacional, a pesar de que ambos campos muestran similitudes: comparten el mismo objetivo, y sus publicaciones se solapan en áreas temáticas, países de origen y títulos. Ambas disciplinas podrían identificar contextos comunes cooperando conjuntamente para contribuir a la promoción de nuevas alfabetizaciones en las sociedades del conocimiento.

Keywords / Palabras clave

Media literacy, information literacy, communication technology skills, knowledge society, Web of Science, boundary work.

Alfabetización mediática, alfabetización informacional, destrezas informativas, Web of Science, delimitación.

Dr. Alice Y.L. Lee is Associate Professor at the Department of Journalism at the Hong Kong Baptist University (Hong Kong) (China) (alicelee@hkbu.edu.hk).

Dr. Clement Y.K. So is Professor at the School of Journalism and Communication at The Chinese University of Hong Kong (Hong Kong) (China) (clementso@cuhk.edu.hk).

1. Introduction

The 21st century has so far been a time of rapid change. Many countries are gradually shifting from industrial societies to knowledge societies, and this transition brings with it significant social transformations. In this new era, people need nontraditional competencies and skills to cope with the changing social and technological environments. Led by UNESCO, a new literacy movement to promote media and information literacy (MIL) has been launched. The purpose of the movement is to bring the fields of information literacy and media literacy together as a combined set of competencies necessary for life and work today (UNESCO, 2012). However, an ambiguous understanding of the boundaries and territories of these two fields makes cooperation somewhat challenging. It seems that the professionals in both fields do not have a full understanding of each other and have failed to establish a commonality. As a consequence, they have not been satisfactorily merged (Badke, 2009).

Media literacy has a long history, but its rapid development has only been noted in the past two decades. Over time, it has been framed in different ways (Brown, 1998; Potter, 2010). In Canada, media education is defined as «the process through which individuals become media literate – able to critically understand the nature, techniques and impacts of media messages and productions» (Media Literacy Week, 2010: 1). In the United Kingdom, media literacy is defined by Ofcom (2010: 1) as «the ability to access, understand and create communications in a variety of context». Media literacy is considered to be a series of communication competencies, including the ability to access, analyze, evaluate, and communicate information in a variety of forms (Lee, 2010; NAMLE, 2010). Although these definitions look different, they address similar purposes, including critically engaging with media messages and increasing the ability to access, understand, analyze, use, and create media products.

Different definitions of information literacy have also been proposed. For example, a study group for the National Forum on Information Literacy defines information

literacy as the ability to access, evaluate, and use information from a variety of sources; this group has also developed a series of outcome measures. The Information Literacy Group at the University of Calgary describes information literacy as «the ability to recognize the need for information and knowing how to access, evaluate, synthesize and communicate it» (Moeller & al., 2011: 32). In UNESCO's «Towards Information Literacy Indicators», Catts and Lau (2008) conclude that information literacy is the ability of an individual to 1) recognize their information needs; 2) locate and evaluate the quality of information; 3) store and retrieve information; 4) make effective and ethical use of information; 5) apply information to create and communicate knowledge.

Although media literacy and information literacy look like two separate fields, both concepts share the common goal of cultivating people's ability to access, understand, use, and create media messages or information. In the literacy family, they have always been seen as being closely linked. When the world entered the Internet age, the boundary between them became further blurred by digital technologies. Literacy actually has a symbiotic relationship with communication technology. When computer technology converged with media technology in the 1990s, which was referred to by Koelsch (1995) as the infomedia revolution, there was already a call for expanding the concept of media literacy to encompass infomedia literacy (Lee, 1999). As the Internet further advances, people need to acquire the skills and competencies of multiple literacies (Buckingham, 2007; Westby, 2010). Various concepts, such as multiliteracies (New London Group, 1996) and multimodality (Kress, 2003), have been proposed to address this need.

2. Different views on the relationship between the two fields

The development of digital technology is a key factor for combining media literacy and information literacy. In the Internet age, it is no longer adequate for librarians to offer a static set of indices and search tools. They need to be able to competently use the latest information technologies and to adopt a critical approach in handling information in libraries and beyond (Mitrano & Peterson, 2012). Therefore, information literacy experts are aware of the need to reach out to the media world and to pay more attention to the critical analytical skills of media literacy. On the media literacy side, while facing the vast amount of information in the digital age, these practitioners also recognize the importance of utilizing information literacy skills for searching, evaluating, and organizing information. Many academics and educators around the world are making efforts to draw media literacy and information literacy together. However, in order to successfully integrate the two concepts, people from the two sides need to understand each other well and know how to complement each other. However, to date, different views of their relationship have hindered substantial cooperation between the two fields. Two contrasting perspectives about their relationship have frequently been mentioned: «On the one hand, information literacy sees media education as a subset of its broader tenets. On the other hand, media literacy conceptualizes information as a subcategory of its broader spectrum of concerns» (Grizzle, 2010; Gutierrez & Tyner, 2012: 34).

In fact, many academics from the library science field regard information literacy as an umbrella concept that encompasses media literacy (Boekhorst, 2012; Kurbanoglu 2012). While Abid (2004) and McClure (1994) point out that media literacy is a major element of information literacy, some others propose that media messages are part of the broader term of information. While conducting a detailed review of the concept of information literacy and media literacy, Bawden (2001: 6-47) found that many authors in the field of information literacy «prefer to see media literacy as a component of information literacy». Badke has described three movements (media literacy, information and communication technologies, and information literacy) as moving toward a point of convergence; he states, «I see the information literacy movement as the best contender to draw together the other literacy movement into a single emphasis».

In Ofcom's adult media literacy report, Livingstone, Couvering and Thumim (2005: 16-23) state that «media literacy sees media as a lens through which to view the world and express oneself, while information literacy sees information as a tool with which to act on the world» and that «both perspectives are relevant for developing media literacy policy». In the report, information literacy was brought to be discussed under the domain of media literacy. With regard to meeting the challenges of the Internet age, Hobbs proposes the concept of digital and media literacy and includes «using information search and evaluation strategies» in her proposed curriculum outline. These scholars consider information literacy to be a useful tool of media literacy, and some experts just do not agree that media literacy is a subset of information literacy. To them, although a media message is a kind of information, media literacy does not only deal with media content, but also encompasses a large number of media institutions and the whole communication industry, which are not covered by information literacy.

Apparently, a consensus has not been reached regarding the boundaries and territories of these two fields, although both sides recognize the need for convergence. Badke (2009: 48) warned about «the danger of living in silos», saying that separation is a hurdle that these literacies must overcome so that they can play a foundational role in today's education. Koltay (2011) also comments that media literacy has to find its essential role in education as one aspect of some kind of multiple or multimodal literacy.

While UNESCO is seeking to promote media and information literacy around the world, a few studies have tried to address the dichotomy between the separate fields of information literacy and media literacy. Lau (2013) argues that both concepts aim at facilitating the development of information skills. The difference between them is in the information objects that they focus on, as one concentrates on mass media messages, while the other focuses on information in general. Carbo (2013: 97-99) proposes the use of «metaliteracy» as a bigger umbrella to bring together the many different competencies needed in the new society. Information literacy is central to this theoretical construct, which includes media and other literacies as components. While these two articles adopt a qualitative approach and information science perspective to discuss the specifications of the two concepts, Gendina (2013: 117-119) found that in Russia and the Commonwealth of Independent States «information literacy and media education develop in silos,

hardly interacting with one another». The boundary dispute between two fields remains unsettled.

The objective of this study is to investigate the relationship between information literacy and media literacy. In sum, there are three competing views: 1) Media literacy and information literacy are basically different; 2) media literacy and information literacy are not the same but do have some overlaps; 3) and media literacy is just a subset of information literacy. Through investigating empirical data, we have sought to determine which of these views is closest to reality.

3. Research method

In the academic world, there are established criteria for evaluating a discipline or a field of study. Heckhausen (1972) distinguishes between disciplines by applying seven different criteria: its set of objectives, subject matter, level of theoretical integration, methods, analytical tools, applications, and historical contingencies. So (1995) has delineated a particular discipline according to its constituting members, institutions, theoretical approaches, stock of knowledge, subject matter, and group identity. A field of study is usually defined by the presence of certain subject matter but not by the existence of certain theoretical elements. By adopting these criteria for evaluating a discipline/field of study, we have compared media literacy and information literacy by empirically examining several aspects, including their patterns of development, academic origins, journals, constituting members, institutions, and subject matter.

In this study, we have made use of the Web of Science database, which includes about 12,000 journals, 150,000 conference proceedings, and more than 47 million documents from 250 fields. It is widely recognized, authoritative, and easily accessible. To be as inclusive as possible, we chose to use all document types from all three indices and from all possible years. The exact date of data collection was February 2, 2013. We searched the database by topic instead of title, as the former is more inclusive and is not limited by specific title words. We looked at the key words of «information literacy» and «media literacy» from 1956 to 2012 to determine what territory each concept would empirically reveal. Specifically, we gathered information about various descriptors, including: 1) the size of the territories; 2) the years in which the documents were published in order to see the trend; 3) the subject areas involved; 4) the journals in which the documents were published; 5) the countries of origin; 6) the authors; 7) the institutions; 8) the words used in the document titles.

The term «information» generated 1,451,947 document items. The term «media» generated 912,069 items. In contrast, «literacy» only produced 25,706 items as it is more specific in focus. For the combination of information and literacy (i.e., the terms were not necessarily adjacent to each other or formed a single concept), there were 4,803 items in the database. Using lemmatization and a more restricted search, the term «information literacy» generated 1,501 items. Similarly, for media and literacy, there were 1,468 items, but for «media literacy», there were only 467 items. From the above numbers, it is clear that the fields related to «information» are larger in scope than those related to «media». The ratio was about

1.6 to 1. Between «information literacy» and «media literacy», the specific ratio of documents found was about 3.2 to 1, which is even larger.

4. The landscapes of information literacy and media literacy

Information literacy is an area that is receiving increasing attention in academia. Before the 1990s, there were very few studies about this topic, and by 1994, it still only accounted for 3.4% of the total documents. Research in this area slowly began to increase, and between 1995 and 2004, the share rose to 22.4%. This interest has continued to grow; from 2005 onwards, the topic of information literacy accounted for 73.8% of the documents in the Web of Science database.

In terms of the subject areas of the information literacy articles, information science and library science are the most popular topics at 54.2% (see Table 1). Two closely related areas are computer science (16.8%) and education and educational research (11.1%). The other topics vary, and each comprises a very small percentage of the overall content area. So it is obvious that this information literacy is unmistakably situated in the areas of information science and library science. Among the top 13 journals shown in Table 2, all of them are in the field of library and information science. The Journal of Academic Librarianship stands out as the most important publication outlet.

Table 1: Top Subject Areas of Articles on Information Literacy and Media Literacy

Information Literacy			Media Literacy		
Rank	Subject Area	N (%)	Rank	Subject Area	N (%)
1	Information science and library science	1,080 (54.2)	1	Education and educational research	182 (25.7)
2	Computer science	335 (16.8)	2	Communication	135 (19.1)
3	Education and educational research	221 (11.1)	3	Psychology	82 (11.6)
4	Nursing*	51 (2.6)	4	Public environmental occupational health*	33 (4.7)
5	Engineering	42 (2.1)	4	Social sciences other topics	33 (4.7)
6	Business economics	30 (1.5)	6	Film radio television*	27 (3.8)
7	Medical informatics*	27 (1.3)	6	Information science and library science	27 (3.8)
8	Health care sciences services	25 (1.3)	8	Computer science	24 (3.4)
9	Communication	17 (0.9)	9	Pediatrics	20 (2.8)
10	Social sciences other topics	14 (0.7)	10	Linguistics	15 (2.1)
	All others	149 (7.5)		All others	130 (18.4)
	Total N	1,991 (100)		Total N	708 (100.1)

* Only appear in its respective area (information literacy/media literacy).

Note: The total number N exceeds the original number of articles because some articles belong to more than one subject area.

Table 2: Top Journals Publishing Articles on Information Literacy and Media Literacy

Information Literacy				Media Literacy			
Rank	Journal	N	5-Year Impact Factor	Rank	Journal	N	5-Year Impact Factor
1	Journal of Academic Librarianship*	124	0.864	1	Comunicar*	47	0.293
2	Portal Libraries and the Academy*	67	---	2	American Behavioral Scientist*	24	0.946
3	College Research Libraries*	63	---	3	Journal of Communication*	15	3.627
4	Reference User Services Quarterly*	42	---	4	Journal of Adolescent Adult Literacy*	14	---
5	Journal of Librarianship and Information Science	40	0.602	5	Journal of Popular Film and Television*	9	---
5	Library Trends	40	0.344	6	Health Communication*	7	1.744
7	Electronic Library*	39	0.642	6	Journal of Adolescent Health*	7	3.849
8	Libri	37	0.356	6	Journal of Broadcasting and Electronic Media*	7	1.058
9	Information Research An International Electronic Journal*	35	---	9	Pediatrics*	6	---
10	Journal of Documentation*	34	1.333	10	Journal of Health Communication*	5	2.307
11	Health Information and Libraries Journal*	29	1.230	10	Journal of School Health*	5	2.014
11	Program Electronic Library and Information Systems*	29	---	10	Journalism and Mass Communication Quarterly*	5	0.691
13	Library Information Science Research*	27	---	10	Media Psychology*	5	1.856
				10	Procedia Social and Behavioral Sciences*	5	---

* Only appear in its respective area (information literacy/media literacy).

Table 3 shows the top 24 authors in the field of information literacy. Heidi Julien, Maria Pinto, and Christine Bruce are the top three authors on the list. Table 4 is a list of the top institutions involved in information literacy research. Researchers from the University of Alberta and the University of Illinois head the list. Among the 18 institutions analyzed, 9 are from the United States and the rest are from 6 other countries. As expected, the United States has produced the lion's share of the documents in information literacy at 40.6%. England (7.7%) and Australia (6.9%) take the second and third spots, respectively, followed by Canada (5.3%)

and China (4.7%). Among the 17 countries and territories currently researching information literacy, most of them are in North America, Europe, and East Asia.

Table 3: Top Authors of Information Literacy and Media Literacy Articles

Information Literacy			Media Literacy		
Rank	Author	N	Rank	Author	N
1	Julien, H*	23	1	Primack, BA*	12
2	Pinto, M*	16	2	Austin, EW*	11
3	Bruce, C*	14	2	Hobbs, R*	11
4	Lloyd, A*	12	4	Pinkleton, BE*	7
5	Badke, W*	9	5	Wade, TD*	5
5	Fourie, I*	9	5	Wilksch, SM*	5
5	Majid, S*	9	7	Brown, JD*	4
8	Oakleaf, M*	8	7	Cohen, M*	4
9	Arp, L*	7	7	Fine, MJ*	4
9	Crawford, J*	7	7	Land, SR*	4
9	Foo, S*	7	7	Potter, WJ*	4
9	Koltay, T	7	12	Chen, YC*	3
9	Kwon, N*	7	12	Christ, WG*	3
9	Millet, MS*	7	12	Gold, MA*	3
9	Mokhtar, IA*	7	12	Greene, K*	3
9	Walter, S*	7	12	Kesten, A*	3
17	Bawden, D*	6	12	Kupersmidt, JB*	3
17	Gross, M*	6	12	Livingstone, S*	3
17	Limberg, L*	6	12	Page, RM*	3
17	Sales, D*	6	12	Raich, RM*	3
17	Saunders, L*	6	12	Scull, TM*	3
17	Sundin, O*	6	12	Strasburger, VC*	3
17	Webber, S*	6	12	Trier, J*	3
17	Woodard, BS*	6	12	Tyner, K*	3

* Only appear in its respective area (information literacy/media literacy).

Table 4: Top Institutions Conducting Information Literacy and Media Literacy Research

Information Literacy				Media Literacy			
Rank	Institution	N	Shanghai Ranking	Rank	Institution	N	Shanghai Ranking
1	University of Alberta*	23	101-150	1	University of California system	17	3 (Berkeley)
2	University of Illinois system	22	25 (Urbana-Champaign)	2	Washington State University	15	201-300

3	Indiana University	21	85	3	University of Pittsburgh	12	61
4	University of Granada*	20	301-400	4	Temple University*	9	301-400
5	City University of New York system	19	301-400 (City College)	4	University of London	9	201-300 (Queen Mary)
5	Queensland University of Technology*	19	---	6	University of North Carolina Chapel Hill*	8	43
5	University of Sheffield*	19	101-150	6	University of Texas Austin*	8	36
8	Charles Stuart University*	17	---	6	University of Toronto*	8	28
8	University of California system	17	3 (Berkeley)	9	Autonomous University of Barcelona*	7	201-300
10	Washington State University	15	201-300	9	Flinders University of South Australia*	7	301-400
10	Pennsylvania State University	15	54	9	Harvard University*	7	1
10	Nanyang Technological University*	15	201-300	9	University of Wisconsin system	7	19 (Madison)
10	Victoria University of Wellington*	15	401-500	13	Arizona State University*	6	79
14	University of Pretoria*	14	---	13	Pennsylvania State University	6	54
15	Loughborough University*	13	---	13	Rutgers State University	6	61
15	Ohio State University	13	65	16	Brigham Young University*	5	301-400
15	State University of New York system	13	201-300 (Buffalo)	16	University of Sydney*	5	97
18	Syracuse University*	12	301-400	16	University of Washington	5	16

* Only appear in its respective area (information literacy/media literacy).

The use of certain words in the document titles can reveal the research foci in information literacy studies. When counting the words that appeared in all the documents, we found that «information» (N=1,173) and «literacy/literacies» (N=937) were the top two words. The rest of the frequently used words help to illuminate the focus of information literacy research. Table 5 shows that there are three groups of words. The first group is related to library science (e.g., library and librarian). The second group is related to education (student, learning, education, instruction, teaching, university, etc.). The third group is related to technology (online, web, technology, digital, and Internet). It is worth noting that the word «media» is not on this list.

Table 5: Top Title Words in Documents on Information Literacy and Media Literacy

Information Literacy			Media Literacy		
Rank	Word	N	Rank	Word	N
1	Information	1,173	1	Media	346
2	Literacy/literacies	937	2	Literacy/literacies	255
3	Library/libraries	248	3	Education	70
3	Student(s)	248	4	Adolescent(s)	46
5	Learning	189	5	Child/children	34
6	Education	149	6	Study/studies	31
7	Skill(s)	118	7	School(s)	29
8	Teaching	107	8	Television/TV	27
9	Instruction	106	9	Program(s)	25
9	Study/studies	106	10	Use(s)	24
11	Based	101	11	Effect(s)	23
12	University/universities	88	11	New	23
12	Research	88	13	Information	22
14	School(s)	76	14	Teacher(s)	21
15	Librarian(s)*	73	15	Smoking*	20
16	Assessment(s)	72	15	Students	20
17	Practice(s)	72	17	Communication(s)	19
18	Online	70	18	Digital	18
19	Web	69	18	Intervention(s)	18
20	Academic	66	20	Based	17
21	Technology/technologies	62	20	Eating*	17
22	Use	60	22	Culture(s)	16
23	Approach(es)	56	22	Curriculum/curricula	16
24	Health	55	22	Development(s)	16
24	Undergraduate(s)	55	25	Advertising*	15
26	Teacher(s)	52	25	Girls*	15
26	Curriculum/curricula	52	25	Learning	15
28	Science(s)	51	25	Social	15
29	Development	50	25	Teaching	15
30	Model(s)	49	25	Youth(s)	15
30	Using	49	31	Analysis	13
32	Digital	48	31	Body*	13
33	College(s)	47	31	Evaluation	13
33	Course(s)	47	31	News	13
35	Case(s)	45	31	Prevention*	13
36	Higher	42	31	Research	13
37	Faculty	41	31	Risk(s)	13
38	Nursing*	40	31	Role	13
39	Evidence	39	39	Approach(es)	12
39	Internet	39	39	Internet	12
			39	Skills	12

* Only appear in its respective area (information literacy/media literacy).

The concept of media literacy began to be addressed in the documents in the Web of Science database beginning in 1995, and this focus has grown steadily ever since. Before 1995, its share of the database was only 3%, but this percentage jumped to 26.2% between 1995 and 2004. Interest in media literacy has continued to rapidly develop in the past few years. From 2005 and onwards, it has accounted for 70.9% of the total documents.

There is no single dominant area in media literacy. The top three research areas are education and educational research (25.7%), communication (19.1%), and psychology (11.6%). The other fields, as shown in Table 1, include other social sciences, health and information, and library science. Table 2 shows the various journals that publish media literacy articles. *Comunicar* is the top journal (N = 47), followed by *American Behavioral Scientist* (N=24). For the rest of the journals, there are two major areas of focus—communication and health. There are also some «hybrid» journals involving both of these fields, such as *Health Communication* and the *Journal of Health Communication*.

The major authors in media literacy are Brian Primack, Renee Hobbs, and Erica Austin. In terms of the institutions most related to media literacy, the University of California system tops the list, while Washington State University is a close second. As Table 4 also shows, among the 19 institutions, the United States is home to 14 of them. The other countries represented include Australia, England, Canada, and Spain. For the origins of the documents, the United States ranks first with a share of 51.8%. England comes second, but its share is only 5.8%. Canada, Spain, and Australia are also near the top of the list. North American and European countries are dominant, but East Asian countries, such as China, Japan, and South Korea, are becoming a rising force.

The title words related to media literacy are shown in Table 5. The words «media» and «literacy» rank first and second, with 346 and 255 uses, respectively. Three groups of words were identified: The first group had something to do with education (such as education, school, teacher, student, or curriculum), the second group of words was related to communication (such as television, effect, communication, advertising, news, or Internet), and the third group was health related (such as smoking, eating, prevention, intervention, or risk). Here we also see the presence of the word «information».

5. Similarities and differences

We can compare the two fields in terms of six aspects. The first aspect is their similar patterns of development. The two concepts have developed rather quickly in recent years. This acceleration is most obvious in the 2000s, especially from the year 2005 onwards. In the past two decades, the two fields have been young and upcoming academic areas in the literacy family (Google, 2012). As for affiliated countries, the United States is the most important place for both information literacy and media literacy research. Other countries that are active in both areas include England, Australia, Canada, Spain, China, and South Africa.

The second aspect is their different academic roots. While information literacy emerged from the library and information sciences, media literacy originated from

the media, education, and social sciences. The top three journals that carry information literacy publications are library journals, while those carrying media literacy publications are communication and social sciences journals. Media literacy-related journals tend to have higher impact factors, while the library journals are either non-Social Sciences Citation Index publications or have lower impact factors (Table 2).

The third aspect is the difference of constituting members and institutions. In Table 3, of the 48 authors shown on both lists, only one of them is listed in both fields. For the top three authors on each list, they do not appear at all on the other list. This level of divergence is a good indicator that the two fields are being investigated by two entirely different groups of researchers. The institutional affiliations in Table 4 essentially repeat this finding. Of the 37 universities listed on both lists, most of them do not overlap. Of the 18 media literacy-related universities, 12 are ranked among the top 100 in the 2013 Shanghai Ranking of world universities. Of the 18 information literacy-related universities, the corresponding number is only 5.

The fourth aspect is their overlapping scopes and subject matters. Education is the common bond between the two fields (Table 5). This overlap forms a basis for the proposed integration and cooperation, but each field also has its own emphasis, as can be seen in their major title words. In fact, they also differ in terms of their targets of study. The objects of interest for the information literacy scholars are mainly peer-reviewed publications. For media literacy, the attention is focused on mass media and media messages. In recent years, they have both focused on multimedia material and have been associated heavily with information and communication technologies. There is also an overlap between the two fields in terms of subject area. Both literacy concepts guide users to meet their information needs through locating, retrieving, evaluating, using, and communicating media and information. One is more concerned with research skills, while the other is linked with critical analysis of media products (Hobbs, 2010; Lau, 2013). The fifth aspect is their divergent analytical approaches. Information literacy concentrates on analyzing information (Lau, 2013). Therefore, it mainly focuses on textual analysis and emphasizes the research value of finding the truth in documents. It is concerned with the critical assessment of research-related information quality but it does not examine information audience and information effects (Lau, 2013). In contrast, media literacy has strong academic roots in media studies and social sciences. It addresses key facets of the mass media phenomena, such as media messages, media industries, media audiences, and media effects (Martens, 2010). Thus, media literacy adopts more analytical approaches. Apart from textual analysis, it also conducts institutional analysis, medium analysis, and audience analysis.

The sixth aspect is their objectives. Information literacy and media literacy have the same objective — training people to access, understand, evaluate, communicate, use, and create media messages and information. Both highlight the importance of the ethical use of information, the critical analysis of content, the use of multimedia platforms, and knowledge production. There is a recent call for information literacy to extend its functions to build citizenship, to guarantee the sur-

vival of democratic institutions, to serve as a vital tool for lifelong learning, and to address the value of relevant information in a commercial world that is driven by a knowledge economy (Bawden, 2001). Media literacy scholars also propose that media literacy should contribute to democracy, the knowledge economy, and lifelong learning (Livingstone & al., 2005).

6. Discussion and conclusion

The empirical findings from the Web of Science database show that there are more differences than similarities between the fields of information literacy and media literacy. Information literacy is a much larger field than media literacy. It has a clear but narrow focus on library science and technology. On the other hand, media literacy has a broader scope and is more related to communication, health-related issues, leisure, effects, and culture. It is clear that these fields overlap to some extent, but media literacy is not a subset of information literacy, and information literacy is also not a subcategory of media literacy.

These two fields come from different academic traditions, have different concerns, and play different roles in the process of educating people and raising literacy levels. Information literacy is more related to information storage, processing, and use, while media literacy is concerned more with media content, media industry, and social effects. Despite their differences, however, they have a number of common concerns. Information literacy and media literacy share common goals and future directions. They overlap in the core skills they aim to develop. They both aim at cultivating literate individuals who can make informed judgments regarding the use of information in the digital age. Both emphasize the use of multimedia platforms and knowledge creation. While we recognize their differences, it is not difficult to find that the two fields are, in fact, linked and complementary.

The experts in these two fields should seek to learn from each other and to understand the specifics of the other field. In today's world, neither information literacy nor media literacy alone is sufficient to equip individuals to deal with the huge volume of media messages and the abundance of information platforms. There is an urgent call to combine these two fields to develop a joint set of media and information literacy competencies needed in the new technological environment. Their integration could certainly facilitate individuals' participation in the emerging knowledge societies.

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