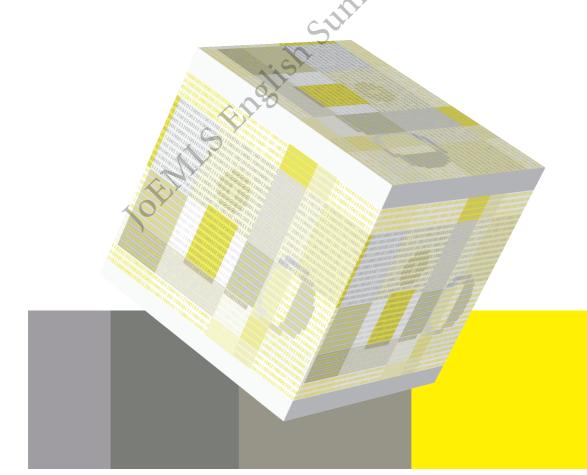
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教育資料與圖書館學,始於1970年3月創刊之教育資料科學月刊, 其間於1980年9月更名為教育資料科學,並改以季刊發行。自1982 年9月起易今名。另自2016年11月起,改以一年出版三期(3月、7 月、11月)。現由淡江大學出版中心出版,淡江大學資訊與圖書館 學系和覺生紀念圖書館合作策劃編輯。本刊為國際學術期刊,2008 年獲國科會學術期刊評比為第一級,2015年獲科技部人文社會科學 研究中心評定為教育學門專業類A級期刊。並廣為海內外知名資料

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The *JoEMLS* is an Open Access (OA) Dual, double-blind reviewed and international scholarly journal dedicated to making accessible the results of research across a wide range of Information & Library-related disciplines. The *JoEMLS* invites manuscripts for a professional information & library audience that report empirical, historical, and philosophical research with implications for librarianship or that explore theoretical and practical aspects of the field. Peer-reviewed articles are devoted to studies regarding the field of library science, information science and IT, the book trade and publishing. Subjects on instructional technology and information communication, pertaining to librarianship are also appreciated. The *JoEMLS* encourages interdisciplinary authorship because, although library science is a distinct discipline, it is in the mainstream of information science leading to the future of **InfoLibrary**.

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EDITORIAL

Acting Together to Promote Innovation and Creativity in *JoEMLS*

Journal of Educational Media and Library Sciences (JoEMLS) has been greeting its 48th glorious year, and is one of a few journals witnessing the development process of Taiwan scholarly journals. In the past, our reforms of organization and editorial strategies, as well as the transformation to a digital platform, have been acknowledged by our academic peers. In the future, through a self-learning platform of scholarly journal management teams, we look forward to not only more actively sharing new concepts of scholarly publishing and management, and editorial practice, but also building mutually cooperative relationships with editorial teams of other scholarly journals, to work together for the journal publishing and management in a Chinese-language environment. We believe the scholarly publishing team of *JoEMLS* is professional and qualified, and is capable of providing analyzed and selected valuable information on journal publishing. Through building and managing an exclusive website, we hope to provide a resource selection and recommendation service (Subject Gateway) on focused scholarly publishing knowledge. Using the Facebook Fan Page feature, we hope to promote the service to authors, publishers, scholars, experts, librarians and relevant institutions. We also expect to provide Digital Reference Service on scholarly journal publishing and editing.

We have engaged in subsequent promotions and interactions relevant to the building and management of an exclusive website. The operations are addressed as below.

1. Building and Management of an Exclusive Website

We plan to implement a digital communication plan of academic publishing through the building and management of an exclusive website. Through the analysis of website traffic statistics, we intend to understand using behaviors of website visitors, for the reference when improving the interface and website contents.

2. The key point 1 of the exclusive website: column essays and new information service

We will timely issue relevant essays and new information, for our academic publishing peers to solve problems. We will also provide translation of in-depth important articles, for the future promotion and communication. We will provide a selection and recommendation service, for introducing relevant resources on worth-noting academic publishing events around the world.

3. The key point 2 of the exclusive website: Referencing Styles Help Desk

We have spared an exclusive area for providing the consulting service on reference styles and Romanized references of journal articles, for understanding information needs of readers. We will collect and compile questions and responses according to topics, and write into column articles, for the reference of academic peers and librarians. Through this, we will achieve the goal of providing a digital reference service on scholarly publishing and editing around the world.

4. A Facebook fan page or others

With the instant communication feature of the Facebook Fan Page, we can timely issue information on latest activities or events relevant to scholarly publishing around the world. Through the question-posing and conversation feature of the Fan Page, we can further understand readers' information needs, for enhancing the interactions between readers and our editing team.

Scholarly journal publishing is a sophisticated expertise that needs a systematic mechanism. Ideally, we need collaborations of professional associations or government agencies to closely connect the academic peers who act as editors for providing services and consulting of publishing and editing, even sharing insights regarding publishing ethics. This collaborative platform can also perform a window for communicating with international organizations. A sustainable and benign scholarly publishing environment requires a regular editing practice, which can only be achieved through discussions and suggestions of academic publishing peers on editing practices. With the governmental supports and leading, editorial teams of scholarly journals should adopt appropriate practices, not the short-sighted and convenient ones. The government should empower more scholarly journal publishers to have a full authority to enhance the publication quality in their own fields. The overall goal is to build a healthy, sound and nationwide scholarly publishing environment in Taiwan.

In the preparation of this issue (Volume 55, Issue 2), 13 submitted manuscripts have gone through the review, and only three research papers and one brief communication are accepted, with a rejection rate of 69%. The papers published in this issue include, "Elementary Inquiry-based Integrated Information Literacy Curriculum: Theory & Practice" by Lin Ching Chen, "The Differences of Time Lag and Revisions of Conference Papers Extended Publishing to Journal Articles: In Field of Management" by Yu-Hui Lu and Wen-Yau Cathy Lin, and "Visual Representation of Popular Science Publications of Global Warming" by Tzong-Sheng Deng. We are also honored to publish an brief communication by

Jaime A. Teixeira da Silva, "The Issue of Comment Ownership and Copyright at PubPeer", in which he made critiques about the popular scholarly publishing platform PubPeer, for invoking more scholars' reflections and discussions.

Jeong-Yeou Chiu

JoEMLS Chief Editor

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Elementary Inquiry-Based Integrated Information Literacy Curriculum: Theory & Practice

Lin Ching Chen

Abstract

According to the recent performance in PISA and PIRLS, it shows that our students lack digital reading literacy, proper ICT use, and information evaluation. Furthermore, the 12-year Basic Education Reform in Taiwan aims to foster students' core competency, and solve a struggle between discipline content and information use. Thus, this study would like to provide a solution to these problems. First, it investigates the nature of information literacy, then explains the inquiry learning and Six Frames as a foundation for integrating information literacy into curricula. Next, the content and learning outcomes of elementary inquiry-based integrated information literacy curriculum designed by the researcher are described. The learning outcomes were shown in two areas of subject contents and learning performance. At last, three school librarians, who have involved in developing the curriculum for years, provide their personal reviews and reflections. Therefore, the feasibility of the inquirybased integrated information literacy curriculum is clarified. Hopefully, through integrating theory and practice across disciplines, another perspective for the 21st-century education reform in Taiwan can be recognized.

Keywords: Information literacy, Inquiry-based learning, Informed learning, Six Frames, Big6 model

SUMMARY

The recent performance of PISA 2015 and PIRLS 2016 shows that both the 15 and the 10 years old age groups lack digital reading literacy, proper ICT use in learning, and good information evaluation skills. Furthermore, the 12-year Basic Education Reform in Taiwan aims to foster students' core competencies, and to solve a struggle between mastering subject content and learning performance in schools. Thus, this study would like to provide a solution to these problems. The solution is the inquiry-based integrated information literacy curriculum.

First, this study investigates the nature of information literacy. Information literacy is the abilities to recognize, locate, evaluate, use and create the needed

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information effectively (American Association of School Librarians [AASL], 2009). It emphasizes both the inquiry process and multiple literacies of library, media, and computer. Many studies find that information literacy instruction should be integrated across the contexts of school curriculum by the use of inquiry-based learning (AASL, 2009; Eisenberg & Berkowitz, 1999). Therefore, students can recognize the real need to link information literacy to the contexts of subject content, internalize information literacy, and become good problem solvers. Both professional associations and scholars have indicated that information literacy should be taught from elementary school, then systematically through secondary and to higher education (AASL, 2009; Chen, Huang, & Chen, 2017).

Next this study explains the theories of inquiry learning and Six Frames as a foundation for integrating information literacy into curriculum. The Big6 and Super3 are two inquiry learning models used in this study (Eisenberg & Berkowitz, 1999; Eisenberg & Robinson, 2007). Six Frames include the Content Frame, the Competency Frame, the Learning to Learn Frame, the Personal Relevance Frame, the Social Impact Frame, and the Relational Frame (Bruce, 2008). These frames provide students with various lenses for experiencing different information practices. Based on these theories, the researcher designed the elementary inquiry-based integrated information literacy curriculum. The Big6 and Super3 models provide the frameworks for executing curriculum-related inquiry projects, while the Six Frames offer guiding themes for the projects.

Then, the inquiry projects and learning outcomes of elementary inquiry-based integrated information literacy curriculum are described as follows. A total of eleven inquiry projects are carried out each semester starting in the second semester of first grade. The inquiry themes are designed based on the essence of Six Frames, and they all relate to the school curriculum. That is, the inquiry-based integrated information literacy curriculum provides students with meaningful learning contexts. The curriculum is taught once a week in grade one and two, and twice from grade three through grade six with the addition of computer literacy. Key aspects of the eleven inquiry projects are listed in Table 1.

Out of these eleven projects, the researcher selects one to two projects for representing the lower-grades, the middle-grades, and the upper-grades. These four projects are described as following in detail.

1. Investigation of Life on Campus: During the Plan phase of Super3 model, the teacher librarian A plays insect video clips to encourage first graders to investigate various insects on campus, so they can pose at least two good questions about the insects they choose. Then, in the phase of Do, under the

Six frames Theme Model Subject Grade Periods G1/2nd S (1/2) Investigation of Life on Super3 1&2 Science 21 Campus G2/1st S (2/1) Tour of Our Community Super3 1&2&3 Social Studies 28 Social Studies 23 G2/2nd S (2/2) Folklore & Festival Super3 1&2&3 G3/1st S (3/1) My Plant Friend Super3 1&3&4 Science 30 G3/2nd S (3/2) My Home Town Big6 1&3&4 Social Studies 33 G4/1st S (4/1) Our Aquarium Big6 1&4&5 Science 33 G4/2nd S (4/2) My Insect Friend Big6 1&4&5 Science 34 G5/1st S (5/1) Controversial Persons Big6 4&5 Language Arts 36 Inquiry Big6 4&5 Social Studies G5/2nd S (5/2) Young Journalists 33 G6/1st S (6/1) US-Taiwan Eco-Campus 5&6 Science & Social Big6 33 Partnership Project Studies Social Studies G6/2nd S (6/2) Debate Big6 33

Table 1 Key Aspects of Inquiry Projects

teacher's guidance, students keep trying to find answers to the questions through accessing nonfiction books, videos, and observing insects on campus. Next they compare all the information, select the needed information to be put into a poster, and present it in front of the class. Finally, in the phase of Review, the students evaluate their own performance using the rubrics given by teacher, and write down their reflections in a journal. As for the aspect of learning outcomes in subject content, the students' memory and comprehension learning in science improved significantly (t=7.926 and t=3.829, p<0.05). In the learning performance, most students perform well on posing questions and creating posters. Furthermore, first-graders enjoy the inquiry process.

2. My Plant Friend: We add a six-week immersion phase before the Plan one in the Super3 model, so that students can be more familiar with the tree topic. Teacher librarian B takes the third graders to observe the plant friends they choose on campus. Students use tablet computers and QR codes for comparing immediately the differences between real plants and those on the Plant website. Students search for needed information in the library and on the Internet. They integrate all the information according to the concept maps they designed earlier, and they create a Plant Identification Card with text and pictures. At last, standing next to the trees, students introduce their plant friends to their peers. The students also write a poem about their plant friends. As for the learning outcomes related to the subject, the difference between pretest and posttest scores for memory and comprehension tests are significant (t=7.09 and t=9.76, p<0.05). For the learning performance, the students pose simple and reasonable questions after being given enough immersion time. In the phase of Do, students apply learned location skills and use removable stickers to synthesize information. They perform well

on tree identification production as well as oral reports. Most students reflect on themselves and identify strengths of their classmates.

- **3. Controversial Persons Inquiry:** It is an argument-driven project in the fifth-grade information literacy instruction. The researcher collaborates with the teacher librarian C to design it for cultivating students' understanding of argumentative reasoning and writing. Based on the Big6 model, students choose any controversial person according to their interests. Then they find relevant information and write an essay containing both pros and cons about the person. At last, the students present their inquiry projects to the peers using a PowerPoint presentation, and answer questions asked by the peers. Their overall argument performance is improved significantly (t=5.855, p<0.05). They understand the purposes and basics of argument writings. Half of the students perform well in argument writings with insightful claims about the controversial figures inquired. Finally teachers of the participating class suggest that we should systematically design argument-driven inquiry projects in information literacy curriculum, so that students' argumentative skills can be improved progressively.
- **4. US-Taiwan Eco-Campus Partnership Project:** It is a civic action-oriented international plan across disciplines, including information literacy, science, social studies, and English. In information literacy classes, each group collects information with various perspectives about energy from books and the Web. Both science and social science teachers teach students advantages and disadvantages of each type of energy, and clarify their questions. Then each group investigates energy use within the school, identifies its inefficiency using the energy checklist, and discovers energy problems at the school. This is the Task Definition stage of the Big6 model. Next, the students evaluate all information with different viewpoints. They develop and implement civic actions about energy saving within the school and reflect on the results. The sixth graders acquire the overall science, information literacy and civic action skills significantly after having the civic action-oriented information literacy instruction (t=3.085, p<0.05).

At last, the three teacher librarians A, B, and C who have involved in developing the curriculum for years, provide their personal reviews and reflections. Hopefully, through integrating theory and practice across disciplines, another perspective for the 21st-century education reform in Taiwan can be recognized and supported.

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The Differences of Time Lag and Revisions of Conference Papers Extended Publishing to Journal Articles: In Field of Management $^{\psi}$

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Abstract

The purpose of this study was to investigate the extended publishing of conference papers in the field of management. The sample examined consisted of a total of 2,427 conference papers that were published in 2011 in nine international conferences spanning four academic fields, which were marketing, production and operations management, transportation management, and information management. This study adopted bibliometrics to analyze the extended publishing rate of the original conference papers, the document types of the extended publications, and the publication lag from the original conference papers to extended versions publishing. The differences between the originals and extended publications were also compared, including the changes in authorship, references, the length of articles, and the number of tables and figures. The results of the study reveal that the average extended publishing rate of the original conference papers was 17.06%, with journal articles being the major category. The average time lag for extended journal articles publishing was 27.99 months, and for submission was 14 months. This study suggested that the academic publishers provide relevant publication policy for extended publication. The journal editors and researchers should follow the guideline for submission and the editorial policy to avoid academic misconduct.

Keywords: Extended Publication, Publication lag, Field of Management, Conference Paper, Journal Article

SUMMARY

With the popularity of Internet, distribution of information has become more rapid and convenient, and researchers can access conference papers without much difficulty. Conference papers have frequently been included in references of journals or books, and have an important role in scholarly communication, thus

^ΨThis article is based on the first author Yu-Hui Lu's master thesis, and the original research idea is inspired by her advisor Wen-Yau Cathy Lin.

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become a research topic of bibliometricians.

There is also a trend of encouraging extending conference papers into other publications. Several important academic journals in Taiwan, such as *Sports and Exercise Research*, *Journal of Architecture*, and *Journal of Communication Research and Practice*, etc., along with *Information Systems Research*, and *MIS Quarterly*, have made clear in their author guidelines for manuscript submission that papers already presented in conferences and not compiled into book volumes are acceptable, but the content should have a major modification or refine, and authors had not transfer the copyright to any conferences or publishers (Architectural Institute of Taiwan, 2016; Information Systems Research, 2016; Journal of Communication Research and Practice, 2016; MIS Quarterly, 2016; Sports and Exercise Research, 2015).

The phenomenon mentioned above indicates that it is not uncommon for researchers to present first in conferences and then revise or make extended publishing of conference papers. It also shows that issues relevant to conference papers, such as academic ethics and copyrights, have been gaining attention.

Research Design and Implementation

In this study, the bibliometric approach was adopted for studying conference papers published in 2011 in nine important international academic conferences in four fields, including marketing, production and operations management, transportation management and information management, suggested in the Management II Subjects of Taiwan Ministry of Science and Technology. The numbers of papers published in 2011 in nine conferences are listed in Table 1.

In this study, we adopted two approaches for obtaining studied papers. First we searched with keywords of titles and names of first authors or corresponding authors in Scopus and Google Scholar, and then collected papers that cited original conference papers. We decided if these were extended publications using six indicators, including titles, authors, tables and figures, citation of original conference papers, notes indicating it's an extended publication and acknowledgement, and mention of original conference papers.

Research Results

In this study, we investigated 2,427 conference papers published in 2011 in nine international academic conferences in the fields of marketing, production and operations management, transportation management and information management. Among them, 414 were extended publications. Since some papers had more than one extended publication, the total was 469, with an average rate

Table 1 Numbers of Papers published in 2011 in Conferences

Conference	Numbers of Papers	
Marketing	_	
Academy of Marketing Science (AMS) Annual Conference	293	
Academy of Marketing Science (AMS) World Marketing Congress (WMC) 264	
Subtota	1 557	
Production and Operations Management		
IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)	g 385	
IIE Annual Conference	453	
Subtota	1 838	
Transportation Management		
IEEE International Conference on Intelligent Transportation Systems (IEEE ITS)	E 356	
International Symposium on Transportation and Traffic Theory (ISTTT)	36	
Subtota	1 392	
Information Management		
ACM Conference on Economics and Computation (former ACM Conference on Electronic Commerce) (EC)	1 49	
ACM Conference on Knowledge Discovery and Data Mining (KDD)		
ACM International Conference on Information and Knowledge Managemen (CIKM)	t 428	
Subtota	1 655	
Tota	1 2,442	

of overall extended publishing as 17.06%.

Among the 469 extended publications, 371 (79.1%) were journal articles, and 35 of them indicated clearly that they were extended publications. The average time lag of extending conference papers into journal articles in four fields was 27.99 months, and the distribution of extended publication dates of 260 (77.84%) journal articles fell between 13 to 48 months after the original conference papers. Through analysis of 210 journal articles provided with manuscript submission dates, we found that the average time lag of extending conference papers into journal articles was 14 months, and the distribution of extended publication dates of 173 (82.38%) of them fell between one to 24 months.

As to the comparison of two versions of conference papers and journal articles, we found that 188 (56.29%) of them had changes in the role of authors, and 297 (88.92%) had no changes in major authors' authorship. The strength of extended bibliographic coupling fell between 10.01% and 40%, with an average of 31.99%. The comparison of 238 full-structured original conference papers and the 252 extended publishing as journal articles indicated that 239 journal articles had an increase in contents, and 219 (86.9%) had an increase in tables and figures. The research results in the four sub-fields of management are compiled in Table 2.

Field Comparison Item	Marketing	Production and Operations Management	Transportation Management	Information Management
Rate of Extended Publishing	18.67%	9.90%	14.33%	21.88%
Rate of Extended Publishing as Journal Articles	95.61%	81.52%	73.21%	64.50%
Distribution of Time Lag of Extended Publishing	13-48 months The longest was 71 months	13-24 months The longest was 69 months	13-18 months The longest was 59 months	19-48 months The longest was 67 months
Distribution of Time Lag of Submitting to Journals	13-18 months The longest was 56 months	1-12 months The longest was 53 months	1-6 months The longest was 50 months	1-24 months The longest was 53 months
Rate of Changes in Major Authors' Authorship	11.01%	10.67%	4.88%	13.76%
Distribution of the Strength of Extended Bibliographic Coupling	30.01%-50%	20.01%-50%	10.01%-30%	0.01%-30%
Distribution of Pages of Extended Publishing as Journal Articles	11-20 pages	11-15 pages	11-20 pages	11-15 pages
Rate of Changes in Word numbers	97.22% Increased words	97.33% Increased words	97.56% Increased words	91% Increased words
Rate of Changes in Numbers of Tables and Figures	91.67% Increased tables and figures	92%	87.80%	81%

Table 2 Research Results

Conclusions and Suggestions

From the research results, we can see that the phenomenon of extended publishing of conference papers exists not only in computer science and in medical science fields, as previous studies mentioned. However, most extended publications did not cite original conference papers or did not have clear indications, but still included partial contents, and tables and figures of original conference papers. A small number of extended publications even reduced numbers of references, contents and tables and figures.

In this study it is suggested that the institutions of scholarly publishing and academic conference hosting should have clear guidelines regarding extended publishing of conference papers, for authors' references when submitting manuscripts. It is to prevent problems of inappropriate self-citation, multiple submissions or salami submissions of one manuscript. When reviewing manuscripts, journal reviewers and editors should follow strictly relevant guidelines of manuscript submission and editorial strategies, for enhancing the quality of journal articles.

For the future studies, it is suggested that conferences in different subject fields or other conferences in the recommendation list of Management II Subjects worth further studying, for revealing differences of extended publishing of

conference papers in different subject fields or other conferences. It is even suggested that an incorporation of bibliometrics, interviews and surveys, with both quantitative and qualitative research methods, for further understanding the scholarly communication behaviors regarding extended publishing of conference papers, and for further investigating the content differences between the original conference papers and extended publications.

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Visual Representation of Popular Science Publications of Global Warming

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Abstract

This study examines the roles, the functions as well as the significance of images for communication with the public on global warming issues by analyzing image representations of popular science publications on global warming. According to the present study, the "cause images" represent scientific consensus, the "effect images" correspond to catastrophic events and uncertainties resulted from global warming, and the "resolution images" signify the descriptions of technologies and norms of behaviors. Under current defined role of images for supporting text, following characteristics were observed: First, when describing scientific facts and the cause-and-effect relationships in the content, the represented images of the symbols which are commonly used by the science culture circle, which include models, numbers, figures/tables and historical photos, can eliminate doubt and allow construction of significant and credible knowledgeable narratives. Second, when explaining the impact of global warming, the represented images often lean towards showing the shifting and changing uncertainties caused by the disasters that are occurring in order to signify the chain reactions produced by the crisis of global warming. Lastly, the study also explores the key roles of sustainable energy technologies for solving the problems of warming crisis. The most common images cited are of solar energy and wind energy. Following analysis of the abovementioned findings, practical suggestions as well as innovative insight for scientific image design from a public participation.

Keywords: Global warming, Crisis awareness, Popular science publications, Public communication

SUMMARY

In this study, through analysis of 17 popular science publications, the researcher tried to investigate how the global warming crisis awareness is communicated through images, and to illuminate the relationship between images and discourses. The goal was to address the communication intention of image re-presentation, for gaining insights that can be applied to the communication and design of science messages.

A literature review started from the earth science framework, which is used to study the climate system. The aim of literature review was to discuss how knowledge about global warming and crisis awareness is formed. It is to investigate how global warming crisis is interpreted through national policies and re-presented by media, and how the interpretation and re-presentation have shaped public issues and social responses. Different countries develop different discourses on concepts regarding climate policies, economic markets, social responsibilities and cultural values. These discourses then go through the media re-presentation, in which the media re-produce messages according to the media's organizational interests and standpoints, such as the objective reporting policy, the interest of focusing on destructions, the doubts on the uncertainty of global warming, and reports on ecosystem disappearance or climate events, etc. Message production directly and indirectly has impacts on the public's understanding of global warming and the sustainability of national policies. Lastly, with the changes of media environments, the communication between the public and visual texts has some issues needed to be investigated and clarified. For example, visualized messages grab attention, reduce cognitive barriers of building crisis awareness, and engage the viewers' perceptions, but tend to produce common sense and antagonism when there are uncertainties.

In this study, the textual analysis approach was adopted for studying popular science publications with non-decorative illustrations, written in Chinese language, and published in Taiwan during the period from 2006 to 2016. The guidelines for content analysis were based on semiotics, include (1) analyzing visual discourses, (2) naming the relevant theme frameworks of images, and (3) grouping similar images into families. Through this, the researcher intended to discuss the time, usage, meanings and symbols relevant to the visual representation.

The results of content analysis were induced and analyzed according to the organizational structure of IPCC 2014 Report, including causes, impacts and solutions.

1. Causes of images are presented through the incorporation of charts regarding green house effect, hockey stick charts of CO2 rising, and scientific exploration charts. When discussing causes of global warming, the incorporation of pie charts or bar charts of carbon emissions, chimney charts symbolizing the degree of industrialization, vehicle and city charts symbolizing the degree of modernism, and technical equipment charts symbolizing development of natural resources, is used to re-present the meaning of global warming caused by artificial factors.

- 2. Impacts of images are presented with facts and change simulations, such as using changes of ice melting to indicate the disappearing of geographically safe board lines, or using images of radical climate events to suggest an increase in frequencies and the degree of destructions. The affected audience would adopt different frameworks to express their discourse viewpoints, such as adopting distant, aerial or eye-level and wide-angled views to take shots of habitats of living animals in rain forests and forests. Images of animals are presented as polar bears, south-pole penguins and coral reefs, for indicating the survival crisis of species. The image incorporation of natural resource usage, and living styles, productions and sceneries shaped by economic and cultural developments, is used to indicate that as being threatened as other living habitats, the living environments of human beings have being destructed and disappearing, not as quiet and peaceful as we thought.
- 3. Solutions of images are directed to a path of alleviation and adjustment through an incorporation of technical and normative images. Technical images are presented as renovative images of vehicles and houses to express viewpoints on new resources or other practices, such as recycling, solar energy or ecological green design. It implies the modern life needs only to be improved without radical changes, such as installing water-saving or solar energy systems in houses. Wind mill charts and ark charts are used to imply that the national planning and implementing of energy sources and preventive management can lead to clean energy sources and cultural preservation. Prescriptive images include energy-saving images indicating improvement of life behaviors, environment afforestation images indicating public space consensus in life environments, and protest parade images indicating a proposal of monitoring and supporting governments or business groups to alleviate global warming, for strengthening the meaning of public participation.

Generally speaking, the popular science publications overlook much of the action process of scientific studies. They are collections of knowledge of global warming, and images describing science knowledge are used as a measure to provide a common experience of observation. Although images cannot be used to describe the action process, they can provide a common background for the public to understand the cause-and-result relationships of crisis discourses. The complicated research process is omitted for engaging the most public in reading. Images are used to simulate the scenes and settings of impacts and solutions, for drawing the public's attention to the proposed scientific or political solutions, and for raising the public's awareness of reducing warming gas with their own efforts. It is suggested that in the future, different social identities and settings of the

public should be addressed, such as how farmers face and cope crisis happening on their own farms, or how housewives deal with food sources and carbon emission reduction. The goal is to provide different angles and viewpoints of the public, for having a common ground of forming the public consensus for taking local actions at life and cultural levels. The image families regarding causes, impacts and solutions mentioned above, are standard marks illustrating textual discourses on explaining science knowledge, indicating the global warming phenomenon, raising crisis awareness, and discussing possible solutions. The images also serve as a creation foundation for engaging the public in imagination and participation. The incorporation of disaster simulations and crisis discourses in images not only raises a problem awareness of improving the status quo, but also strengthens design thinking for planning out future actions. The presentation strategies of images are aimed to develop a more delicate and fresh visual vocabulary discourse for the future and make a vivid mark for climate science, on a basis of comparing facts of the past and the present.

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The Issue of Comment Ownership and Copyright at PubPeer

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Abstract

The PubPeer Foundation is a non-profit organization based in California that runs and owns PubPeer, a website that claims to be an online journal club, but that specializes in science whistle-blowing while also serving as postpublication peer review site for critique of the published literature. On the footer of the PubPeer top-page, a copyright notice appeared that stated until mid-2017 "Copyright © 2017 PubPeer, LLC" and even until at least April 2018, as "Copyright © 2017 PubPeer Foundation", only recently updating its copyright statement and clauses. This commentary examines the issue of comment ownership at PubPeer within the realm of copyright. While the structural framework of the site is copyrighted, the majority of the "original" work displayed on that site are signed, anonymous and pseudonymous comments. Does the copyright mark claim copyright to these comments as well given that commentators do not transfer copyright to the PubPeer Foundation? If commentators, even those that are anonymous, hold copyright to their comments, as appears to be the case, but if PubPeer moderates and modifies the content of comments, is this a form of comment manipulation? This issue is relevant to the use of information, comments and otherwise, on the PubPeer website for post-publication peer review. As for fair-use of any copyrighted material, the use of any content from the PubPeer website, including comments, provided it is used in moderation and for non-commercial academic purposes, is within the bounds of fair-use, resembling use under a generic creative commons license. Curiously, a comment about this issue left at the website of another science watchdog, Retraction Watch, which shares a mutual source of funding with PubPeer, the Laura and John Arnold Foundation, was not published.

Keywords: Opacity versus transparency, Philanthropy and charity, Post-publication peer review, PubPeer Foundation, Science watchdogs, Whistle-blowing

Why is There a Copyright Mark on the Footer of PubPeer Pages?

Websites across the globe, including in the US, that add a copyright mark to the footer of their website do so to indicate to readers that the content of their website is copyrighted, but usually not user-generated content. Copyright exists to prevent the unlawful abuse and free distribution of content. This usually has greater merit in a discussion when the copyrighted material is protecting

commercially valuable material, but can also refer to intellectually valuable material of no commercial value. The discussion of copyright is currently very central to library and information science as the battle rages on between pirate or black open access (OA), such as sites such as Sci-Hub, and the oligopolistic for-profit publishing industry. If the original owner of a "work" is not its copyright owner, then copyright is transferred to the entity that then claims and owns that copyright. In publishing, for example, an author of a work would transfer copyright to a publisher which would then exploit it for distribution and sales purposes (Finlay, 2015). If a copyright contract is cancelled, for whatever reason, then copyright is transferred back to the original copyright owner. This does not apply to OA licenses with a creative commons attribution.

This paper focuses on the issue of copyright and comment ownership by and at a science critique and whistle-blower website, PubPeer (PubPeer, 2017a). The PubPeer website stated a 2017 copyright at the footer of its website, as "Copyright © 2017 PubPeer, LLC" (Figure 1A, center), or as "Copyright © 2017 PubPeer Foundation" up until about April 2018 (Figure 1A, bottom). The copyright notice, and other aspects of the site appear to have been updated sometime between May and June 2018, although the precise date is unclear because PubPeer does not date its documents or changes to its website content. However, to serve as an important historical document of what existed prior to the current content, this paper presents facts as they were versus facts as they currently are for readers to appreciate the dynamic state of change at this post-publication peer review (PPPR), whistle-blowing online journal club website. This has important implications because the status of commentators' comments prior to April 2018 as opposed to the current copyright status may very well be different.

What Does PubPeer Hold Copyright to?

The PubPeer website is owned by the PubPeer Foundation, a California-based 501(c)(3) nonprofit "public benefit corporation" (PubPeer, 2017b). This copyright notice was presumably added to prevent the copying of the site's content, for example by website hijackers or hackers. And, indeed, text on several of the pages, a vast minority of pages, as indicated next, appears to have been written by one or more PubPeer Foundation-related individuals. It is unclear how much of this text may have been written by the President of the PubPeer Foundation, Brandon Stell, or its Treasurer, Boris Barbour, who hold positions in French research institutes, Paris Descartes University and in IBENS-ENS (CNRS), respectively, or by the third co-founder, Gabor Brasnjo, who is a patent attorney

 $^{^{1}\} http://www.sciencemag.org/news/2017/07/sci-hub-s-cache-pirated-papers-so-big-subscription-journals-are-doomed-data-analyst$

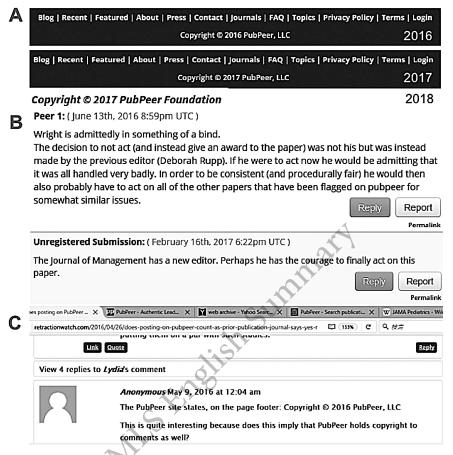


Figure 1 Screenshots Related to PubPeer Copyright and Comment Policies

Sources: (A) Top: by PubPeer, 2016 (http://web.archive.org/web/20160506080138/https://pubpeer.com/). In the public domain; Center and bottom: by PubPeer, 2017a (https://www.pubpeer.com/). In the public domain. (B) Top: "Re: Authentic Leadership: Development and Validation of a Theory-Based Measure†" [Article comment] by Peer 1, June 13, 2016 (https://www.pubpeer.com/pub lications/1E79BA4AA94EB722491B14AE871B0F#fb52723). In the public domain; Bottom: "Re: Authentic Leadership: Development and Validation of a Theory-Based Measure†" [Article comment] by Unregistered Submission, February 16, 2017 (https://www.pubpeer.com/publications/1E79BA4AA94EB722491B14AE871B0F#fb117249). In the public domain. (C) "Re: Does Posting on PubPeer Count as Prior Publication? Journal Says Yes, Rejects Letter Rebutting Campus Sexual Assault Data" [Article comment] by Anonymous, May 9, 2016 (http:// retractionwatch.com/2016/04/26/does-posting-on-pubpeer-count-as-prior-publication-journal-saysyes-rejects-letter-rebutting-campus-sexual-assault-study/#comment-1024479). In the public domain. Note: (A) The PubPeer Foundation LLC, based in California, USA, claims copyright (2016, 2017 and until April/May 2018 evidence). Is that copyright claim for comments made by commentators signed, anonymous or pseudonymous - who have not transferred copyright to the PubPeer Foundation? (B) Examples of comments by anonymous (the author) and registered commentators; in the latter, even though a commentator registers to comment at PubPeer, their identity remains anonymous, identified simply as "Peer X" (before PubPeer changed to PubPeer 2.0), or now, in 2018, using the Latin names of plant species. (C) A query made on May 9, 2016 about this topic on Retraction Watch, was not approved for publication (see critique on this in Teixeira da Silva, 2018d). All older screenshots, taken on February 20, 2017, as well as updated information on April 12, 2018, have been used under the fair-use agreement for post-publication peer review (https://www.copyright.gov/title17/92chap1.html#107; Teixeira da Silva 2015). Even though the screenshot of (A) bottom was taken in April of 2018, the copyright notice still indicates a 2017 date. The date was updated to 2018 sometimes in late April or May of 2018.

but who serves as the PubPeer Foundation's secretary (Couzin-Frankel, 2015), because authorship of text on PubPeer pages is not indicated. When observing the menu at the footer of the PubPeer website, it is reasonable to conclude that the content of the listed pages ("Blog | Recent | Featured | About | Press | Contact | Journals | FAQ | Topics | Privacy Policy | Terms | Login" in 2017 and "Blog | Journals | About | Press | FAQ | Privacy Policy | Terms | Bug report | Contact us | Donate" in 2018, after PubPeer converted to PubPeer 2.0 in about June of 2017; PubPeer, 2017c) was written by members of the PubPeer Foundation. So, the copyright claim to this content (i.e., the structural framework and this content) appears to be accurate, and would then be subject to fair-use.

However, it is fair to argue that the PubPeer website primarily exists because of its users, who are registered, anonymous, or pseudonymous, as well as their engagement. These comments are the fundamental backbone of PubPeer. Their comments appear at PubPeer, primarily on the following pages, "Recent | Featured | Journals | Topics", until PubPeer 2.0 evolved, but now share one single top-page for all entries. Having been a registered user and an anonymous commentator at PubPeer, the author of this paper has never transferred copyright of any of his comments to PubPeer, nor has PubPeer ever requested the transfer of comment copyright to the PubPeer Foundation. Until about April 2018, there was never any explicit statement suggesting that PubPeer owns commentators' comments. In addition, there was no mention of copyright transfer on the instructions page (PubPeer, 2017d), or of comment ownership or comment-related copyright on any PubPeer page (accurate on April 12, 2018).

This status has now changed, and was edited and updated sometime in April or May of 2018, although the precise date of these changes is unclear. The terms of service (TOS) page now states (PubPeer, 2018): "By submitting Content to PubPeer for inclusion on the Website, you grant PubPeer a world-wide, royalty-free, and non-exclusive license to reproduce, modify, adapt and publish the Content solely for the purpose of displaying, distributing and promoting your Content." This suggests that commentators are the copyright holders of their own comments, but that they provide PubPeer with a non-exclusive license to use or modify those comments, not unlike a creative commons license, possibly resembling the generic (CC BY 2.0) license. Very importantly, the TOS states that "Your use of the Website grants you no right or license to reproduce or otherwise use any PubPeer or third-party trademarks", but does not explicitly limit these rights to comments, suggesting that the use of comments on PubPeer are subject to a creative commons license.

For what content precisely does the copyright claim on the footer of every

² https://creativecommons.org/licenses/by/2.0/

PubPeer page, even on pages where signed, anonymous or pseudonymous commentators have commented on a published paper, represent? The United States Copyright Office (2016) describes "anonymous work" in the latest (December 2016) version of the US Copyright Law (§101, p. 2) as "a work ... of which no natural person is identified as author". The same Copyright Law states the following regarding the duration of copyright for anonymous and pseudonymous works (§302, p. 133): "In the case of an anonymous work, a pseudonymous work, or a work made for hire, the copyright endures for a term of 95 years from the year of its first publication, or a term of 120 years from the year of its creation, whichever expires first."

An email request to explain the meaning and scope of this copyright notice was sent to PubPeer's official contact, as well as to Stell and Barbour on February 9, 2017 (Appendix). No response was received. The lack of an explanation, especially regarding the copyright or ownership of commentators' comments, reflects poorly on PubPeer's interaction with the public and/or academia since the TOS was only updated sometime in April or May 2018. Even so, comment ownership, especially since PubPeer can modify, moderate or use comments without permission, remains elliptic.

Why is the PubPeer Copyright Claim and Comment Ownership Important?

The issue of anonymity is of central importance to the functionality of PubPeer as an "online journal club" and PPPR and whistle-blower site, since many commentators — most likely the vast majority — who critique papers in the published literature as part of PPPR, do not wish to reveal their identity, for fear of possible reprisals (Teixeira da Silva & Blatt, 2016; Teixeira da Silva & Dobránszki, 2015). One current case, which also reflects a problem with comment moderation at PubPeer, involves a dispute between Hans-Peter Müller and a science watchdog, Leonid Schneider. Even registered users who used to comment at PubPeer prior to the evolution of PubPeer 2.0 appeared anonymously, as Peer 1, 2, etc. whereas anonymous commentators appeared as "Unregistered Submission" (Figure 1B). In contrast, after PubPeer 2.0 was implemented in June of 2017, registered users now comment using their real or pseudonymous names (in both cases, these are registered accounts) whereas truly anonymous commentators are assigned a random botanical Latin name of a plant.

However, independent of the copyright notice on the PubPeer website footer, the copyright of all comments appears to remain in the hands of the

³ https://www.pubpeer.com/publications/1884D4A7A929C87B9AFF53C9E8BD85#76; https://pubpeer.com/publications/pubpeer2#110

commentators, whether these be signed, anonymous, or pseudonymous. This possibility was previously suggested on the "Press" page (PubPeer, 2017e), where the slogan was "Media Responses to your PubPeer Comments", with emphasis on your, i.e., ownership of the commentators. When a comment was (pre-PubPeer 2.0) or is (post-PubPeer 2.0) submitted to PubPeer, there is no transfer of copyright to PubPeer, nor did/does the PubPeer Foundation request those making or posting comments to transfer copyright (PubPeer, 2017d). In several PubPeer entries, comments are automatically imported from PubMed Commons (one example⁴), so does PubPeer claim copyright of these comments, or who owns those comments, especially given the fact that PubMed Commons was shuttered in mid-February of 2018 (Teixeira da Silva, 2018a). The issue of comment ownership thus remains somewhat in limbo, even as PubPeer has become the current de facto leading website (volume and popularity) in PPPR commenting and whistle-blowing. Papers from OA journals published with a Creative Commons Attribution License, such as those published in PLOS ONE⁵, would be exempt from copyright claim. Therefore, it is important to know the scope of the 2016-2017 "Copyright © 2017 PubPeer, LLC" and 2017-2018 "Copyright © 2017 PubPeer Foundation" notices. As PubPeer assumes a central role and position in the fight against erroneous science in the published literature, the issue of copyright and comment ownership will become increasingly important as the number of users who comment, and who wish to use those comments, for legal or academic purposes, increases (Teixeira da Silva, Dobránszki, & Al-Khatib, 2017).

What Policies do ResearchGate, Academia.edu and Twitter have in Place?

Social media sites have become an integral part of the publishing and PPPR landscapes. As academics use researcher-based social networking sites such as ResearchGate or Academia.edu to showcase their published work and other scholarly achievements, a sleuthing and critical base of academics may use such sites to glean information about the published literature and expose issues on PubPeer and drive discussion – or raise doubts – on Twitter. Thus, clarity about copyright policy on these social media sites is important to understand if there is consistency between policies on these sites and on PubPeer. Whereas comments in response to questions projects or published papers are allowed on ResearchGate, there is no such functionality on Academia.edu, so the issue of comment ownership and/or copyright affects ResearchGate, Twitter and PubPeer, but not Academia.edu. There are likely many other minor PPPR sites and blogs,

⁴ https://pubpeer.com/publications/20877712

⁵ https://pubpeer.com/publications/24009765; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0074033

but for the purpose of this paper, focus is placed on these three high-profile sites.

ResearchGate, a highly popular social networking platform for academics, including scientists and researchers, states in its website footer "© 2008-2018 ResearchGate GmbH. All rights reserved". However, a separate page dedicated exclusively to intellectual property states clearly "As a member, when you post full-text articles or supplementary materials on ResearchGate, you do not transfer or assign copyright to us", although ResearchGate, similar to PubPeer, does not specifically address the issue of comment-related copyright or ownership, only liability. The recent upgrade to the PubPeer TOS crudely follows the ResearchGate model by offering more detailed and useful information, but lacks simplicity and clarity – given the large amount of legal jargon and legalese that the vast majority of academics might not understand – about comment-related copyright or ownership.

Twitter also allows pseudonymous commenting and even allows multiple accounts for the same identity ("You can also create and manage multiple Twitter accounts, for example to express different parts of your identity").8 Although the term "copyright" is not indicated on this Twitter page, except for the copyright notice for the site's content ("© 2018 Twitter, Inc."), it is abundantly clear that the user who creates a Twitter account owns that content and is responsible for it. This is not clear on PubPeer, especially for unregistered anonymous comments that are posted without any ability to edit them. The Twitter TOS page, on the other hand, offers more clarity about comment ownership than PubPeer, indicating that "All Content is the sole responsibility of the person who originated such Content" and "You retain your rights to any Content you submit, post or display on or through the Services. What's yours is yours — you own your Content (and your incorporated audio, photos and videos are considered part of the Content). By submitting, posting or displaying Content on or through the Services, you grant us a worldwide, non-exclusive, royalty-free license (with the right to sublicense) to use, copy, reproduce, process, adapt, modify, publish, transmit, display and distribute such Content in any and all media or distribution methods (now known or later developed). This license authorizes us to make your Content available to the rest of the world and to let others do the same." This is lacking at PubPeer.

Practical importance of the issue of comments at PubPeer

The importance of this topic became very real in early 2016, when a letter by Jim Hopper at Harvard Medical School was rejected by a journal published by

⁶ https://www.researchgate.net/

⁷ https://www.researchgate.net/application.IntellectualPropertyPolicy.html

⁸ https://twitter.com/en/privacy

⁹ https://twitter.com/en/tos

the American Medical Association, *JAMA Pediatrics*, because the letter had been previously posted to PubPeer, thus annulling the originality of that letter (Chawla, 2016). Curiously, several *JAMA Pediatrics* papers have been profiled at and by PubPeer¹⁰. A query made by the author of this paper on Retraction Watch on May 9, 2016, but signed anonymously, regarding the PubPeer copyright notice, was not approved by Retraction Watch (Figure 1C). Retraction Watch and the PubPeer Foundation have a common financial philanthropic sponsor, The Laura and John Arnold Foundation (Teixeira da Silva, 2016a). Previous ties between PubPeer and Retraction Watch had been hidden by PubPeer on its "Media" page prior to its conversion to PubPeer 2.0 (Teixeira da Silva, 2017).

Conclusions

The central function of the PubPeer website is currently to offer commentary and critique, either signed by name or pseudonymously or anonymously, on the published literature. The site was originally developed with the objective of an online journal club, with balanced critical analysis of published papers, but it is more often associated with a centralized site where whistle-blowers release their evidence of errors, or possible misconduct in the published literature. Forest (2018) has even suggested PubPeer as a place to battle "fake news". Given the closure of PubMed Commons in early 2018, PubPeer has emerged as the premier PPPR site. The science watchdogs (Teixeira da Silva, 2016b), including PubPeer and Retraction Watch, must be carefully examined. This is because their opinions and/or websites may have an irreversible impact on science, scientists, editors, publishers and the published literature. The freedom of speech of those who critique others using anonymous or pseudonymous identities on PubPeer are protected by the US Constitution, as was observed in the PubPeer (representing Joe Doe) vs. Fazlul Sarkar case (Teixeira da Silva, 2018b). This means that the issue of comment ownership, and the meaning of the 2016-2017 "Copyright © 2017 PubPeer, LLC" and 2017-2018 "Copyright © 2017/2018 PubPeer Foundation" notices at PubPeer are important issues to resolve, with clarity. The issues of opacity and comment suppression by the PubPeer Foundation has already been recorded (Teixeira da Silva, 2018c, 2018d). As PubPeer seeks to monetize access to the comments made on each journal via the PubPeer Journal Dashboards¹¹, as can be seen by the links above to the JAMA Pediatrics PubPeer entry, which once used to be open, and is now subject to a paywall, comment ownership is important, i.e., should PubPeer be selling services to third parties

¹⁰ https://web.archive.org/web/*/https://www.pubpeer.com/journals/JAMA-Pediatr

https://pubpeer.com/journals (an aspect of opacity: pricing is unspecified; this site still has an outdated copyright notice: "Copyright © 2017 The PubPeer Foundation").

(presumably journals and publishers) that are based on the monetization of comment-based content? If commentators, whether these be signed, anonymous or pseudonymous, are aware that their comments, or access to them, involves a fee to subscribers of this new PubPeer service, would they be willing to comment as freely as they currently do?

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Conflicts of interest

The author and his work have been profiled by PubPeer and by Retraction Watch. The author has used PubPeer and Retraction Watch, both as a signed, registered commentator, and anonymously. The author declares no other conflicts of interest.

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Appendix

Email sent to PubPeer on February 9, 2017, requesting details about the copyright notice and its application to commentators' comments, signed and anonymous. PubPeer never responded to this request.

To: PubPeer Contact [redacted]; PubPeer Staff [redacted] Sent: Thursday, February 9, 2017 05:12:24 PM JST Subject: Query: Copyright © 2017 PubPeer, LLC

Dear PubPeer.

Your web-site has, at its footer, the following phrase "Copyright © 2017 PubPeer, LLC"

Can you kindly explain what precisely is copyright material. For example, is PubPeer claiming copyright to comments?

Can comments be used by the public freely, like an open access public source, or does written permission have to be obtained from PubPeer to use comments made on PubPeer?

original ish singlish Finally, how does this copyright notice pertain to fair-use?

Thank you in advance,

Jaime A. Teixeira da Silva

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林信成、陳瑩潔、游忠諺,「Wiki協作系統應用於數位典藏之內容加值與知識匯集」,教育資料與圖書館學 43 卷,3期(2006):285-307。【Sinn-Cheng Lin, Ying-Chieh Chen, and Chung-Yen Yu, "Application of Wiki Collaboration System for Value Adding and Knowledge Aggregation in a Digital Archive Project," *Journal of Educational Media & Library Sciences 43*, no. 3 (2006):285-307. (in Chinese)】範例2 - 參考文獻(References)

林雯瑤、邱炯友(2012)。教育資料與圖書館學四十年之書目計量分析。教育資料與圖書館學, 49(3), 297-314。【Lin, Wen-Yau Cathy, & Chiu, Jeong-Yeou (2012) A bibliometric study of the *Journal of Educational Media & Library Sciences*, 1970-2010. *Journal of Educational Media & Library Sciences*, 49(3), 297-314. (in Chinese)】

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