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Research and Analysis of Australian University Open Access Policies: Postprint

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Abstract

[Purpose/Significance] Australia is a leader and active practitioner of the open access (OA) movement. Investigating the current status and characteristics of open access policies in Australian universities provides valuable reference for advancing the domestic open access movement. [Method/Process] This study collected 40 original open access policy documents from 38 Australian universities and 2 official funding agencies. Based on these documents, statistical analysis and textual interpretation were conducted to comprehensively reveal the current status and characteristics of Australian university open access policies across ten dimensions: release date, formulation mechanism, implementation pathway, policy objective, scope of application, concept definitions, deposit types, open access requirements, responsibilities of stakeholders, and copyright statements. [Results/Conclusions] Australian university open access policies exhibit the following features: a high adoption rate of 88.6% among universities, attributable to policy exemplification and financial incentives from government research funding agencies; positive institutional attitudes with top-down policy promotion and implementation; a preference for supporting and encouraging the green OA route, with mandatory provisions for OA self-archiving of research outputs; clear definitions of OA-related concepts, featuring comprehensive, standardized, and unambiguous content with strong operability. Based on these findings, recommendations for promoting China's open access movement are proposed.

Full Text

Survey and Analysis on Open Access Policies of Australian Universities

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Abstract: Australia is a pioneer and active practitioner of the open access (OA) movement. Studying the current status and characteristics of Australian university open access policies provides valuable reference for promoting China's OA movement. This paper collected 40 original OA policy documents from 38 Australian universities and 2 official funding agencies. Through statistical analysis and textual interpretation of these documents from ten aspects—policy release date, source, implementation approach, purpose, scope, concept definitions, deposit types, open access requirements, stakeholder responsibilities, and copyright statements—the study comprehensively reveals the status and characteristics of Australian university OA policies. The findings show that Australian university OA policies feature: (1) high prevalence, with 88.6% of universities having published OA policies, attributable to policy demonstration and funding incentives from government research funding agencies; (2) top-down policy development and implementation driven by positive institutional attitudes; (3) preference for supporting and encouraging the green OA route, with mandatory requirements for self-archiving of research outputs; and (4) clear definitions of OA-related concepts, complete and standardized content, and strong operability. Based on these findings, recommendations for promoting China's OA movement are proposed.

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Keywords: Australian universities, open access, policy content, textual analysis

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Since the release of the Budapest Open Access Initiative in February 2002 [1], the open access movement has made significant progress at both policy and practical levels over the past 16 years. Governments, research institutions, and libraries worldwide have actively advocated and implemented OA to achieve universal knowledge development in the internet era, expand the dissemination and impact of research findings, and build a better human community with a shared future. A crucial factor driving the vigorous development of the OA movement has been the constraints and guarantees provided by OA policies at various levels. According to data from the Registry of Open Access Repository Mandates and Policies (ROARMAP) website [2], the first institution to adopt an OA policy was Victoria University of Wellington in 1992 [3]. However, a closer examination reveals that this policy primarily concerned library management systems for depositing theses and research papers, rather than constituting a formal OA policy in the strict sense. Between 1992 and 2003, only six institutions adopted OA policies, increasing to 11 in 2004. In recent years, institutions have continued to release OA policies, with the number registered on ROARMAP growing from 550 at the end of 2014 to 886 by the end of 2017, with policies released in the last three years accounting for 37.9% of the total. Among the 886 registered institutions, 737 are universities or university substitutions (83.18%), reflecting that universities are the primary publishers of OA policies. Australia consistently ranks among the top ten in global open data index surveys, rising to second place in 2016 [4]. Australia is a leader and active

practitioner of the open data movement, and understanding the current status of university OA policies essentially provides insight into the overall development of OA policies. Domestic research has primarily analyzed OA policies of American and British universities, with limited attention to Australia [5-6]. Australian universities are few but excellent, with 43 universities nationwide, 37 of which rank in the QS 2018 top 1000 global universities [7]. This study uses the list of 43 universities from the Australian Department of Education [8] and 33 Australian institutions registered on ROARMAP (28 universities and 2 university sub-institutions overlapping with the Department of Education list) as a baseline, systematically collecting 40 original OA policy documents through comprehensive website surveys of Australian universities.

1. Overall Status of Australian University OA Policies

By the end of December 2017, 33 Australian institutions were registered on ROARMAP, including 2 government funding agencies, 28 universities, 2 university sub-institutions, and 1 technical college. Among these 33 institutions, 10 had valid OA policy links, 16 had broken links, and 7 had not registered policy links on ROARMAP. Combining this with the Department of Education's list of 43 universities [8], the authors surveyed the official websites of 48 institutions (33 registered on ROARMAP and 15 not registered), collecting 40 original OA policy documents from 38 universities and 2 government research funding agencies. The eight institutions without obtainable policy documents include: Griffith University, Northern Melbourne Institute of TAFE, a UNSW sub-institution, and a University of Tasmania sub-institution, which provided no OA policy links on ROARMAP or their official websites; Monash University, whose registered link was broken and whose new link required institutional login; and among the 15 universities not registered on ROARMAP, the University of New England, University of Divinity, and Torrens University Australia had no OA policies on their websites. Overall, Australian universities demonstrate strong commitment to open access with high prevalence: among 43 universities and 1 technical college, 39 have published OA policies (88.6%). In the latest 2018 QS World University Rankings [7], 37 Australian universities rank among the world's top 1000, and all except the University of New England have published OA policies.

2. Survey Analysis

2.1 Policy Release Timing Analysis

Among the 40 collected OA policies, 10 documents did not clearly indicate release dates. Although Monash University's policy text was unavailable, its release date was registered on ROARMAP. Figure 1 [Figure 1: see original paper] shows the release dates of the 31 policies with available information.

[Figure 1: see original paper] Australian Universities'OA Policy Release Timeline

Figure 1 demonstrates that Australian universities responded swiftly after the 2002 Budapest Declaration. Queensland University of Technology was the first to release an OA policy on September 26, 2003, effective January 1, 2004 [9]. Between 2004 and 2009, Australia launched a series of institutional repository and OA policy initiatives that drove initial policy development, including the Group of Eight's 2004 statement on open access to research outputs, the Australian Partnership for Sustainable Repositories (APSR) project (2005-2008), the Australian Research Repositories Online to the World (ARROW) project, and the Australian Scheme for Higher Education Repositories (ASHER) in 2007 [6]. Consequently, 2-3 universities released OA policies annually from 2005 to 2009. The period 2012-2014 marked a high-growth phase for Australian university OA policies, driven by policy demonstration and funding incentives from Australia's two major government research funding agencies. The Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) have played crucial roles in advancing open access. NHMRC issued a mandatory OA policy in July 2012, revised in February and November 2014 [10]. ARC issued its mandatory OA policy in January 2013, revised in April 2015 and January 2017 [11]. The mandatory policies released by ARC and NHMRC around 2013 pushed Australian OA policy promotion to its peak, with 15 universities adopting OA policies during 2012-2014—exceeding the total number of university OA policies released during the entire 2003-2011 period.

ROARMAP also records policy implementation and update dates, providing insights into follow-up work. Comparison of release and implementation dates shows that most Australian universities implemented policies on the same day as release, with only five universities providing 1-2 month grace periods for faculty to understand and prepare. Comparison of release and update dates reveals that OA policy development is not a one-time effort but requires continuous adjustment according to national policy changes and environmental shifts. Among the 19 universities mentioning update dates, all had updated their policies after 2011, with nine updating after 2016, and 15 establishing provisions for policy review every 2-3 years. This demonstrates Australian universities' proactive attitudes toward OA policy release, revision, and implementation.

2.2 Policy Source and OA Implementation Approach Analysis

Compared with previous research on American university OA policies [12], Australian university OA policies differ significantly in source: while American policies originate more from “grassroots voting” by campus institutions and faculty, Australian policies resemble those of British universities [13], deriving primarily from management decisions. Among 25 documents mentioning policy sources, 19 originated from administrative or management decisions, with only six from faculty votes and academic committees, as shown in Figure 2 [Figure 2: see original paper].

[Figure 2: see original paper] Proportion of OA Policy Sources in Australian Universities

University research output can be made open access through two main approaches [14]: the green route via institutional repositories, and the gold route by paying article processing charges (APCs) for publication in OA journals. Overall, Australian university OA policies favor and encourage the green route, with mandatory requirements for self-archiving, as demonstrated by statistical data.

For the green route, all 43 surveyed Australian universities have established institutional repositories, enabling self-archiving. Institutions such as Deakin University [15], Charles Sturt University [16], and the University of Queensland [17] mention maintaining two repositories: one for internal assessment management data and another for full-text open access. While ARC and NHMRC allow deposit in third-party OA repositories like PubMed Central and Zenodo, Australian university policies differ from over half of British universities that explicitly permit third-party deposit [13]; no Australian university policies explicitly allow researchers to deposit in third-party OA repositories, instead encouraging deposit in their own institutional repositories. This demonstrates Australian universities' preference for achieving open access through self-archiving (green OA).

Regarding the gold route, few Australian universities currently support gold OA through APC payments. Among the 40 policy documents, only four universities (including Bond University) explicitly provide APC funding, two explicitly do not, one discourages APC payment, and 31 make no mention. High APC costs likely explain universities' cautious approach to gold OA. Research indicates that high-priced OA journals charge over \$5,000 per article on average, with top-tier journals like *Nature*, *Science*, and *Cell* potentially charging at least \$10,000 if they adopt OA publication fees [14].

Among the 40 policies, 20 explicitly reference ARC and NHMRC OA policies as important references for their own policy development; 12 show ARC/NHMRC influence without explicit mention; two directly adopt ARC/NHMRC policies; and the remaining six include five brief policies focusing on thesis submission and one University of Southern Queensland policy predating the 2011 ARC/NHMRC policies without subsequent revision dates, showing no clear influence. The proportions are illustrated in Figure 4 [Figure 4: see original paper].

[Figure 4: see original paper] Influence of ARC and NHMRC OA Policies on Australian University Policies

In practice, OA policies can be categorized as mandatory deposit (ROARMAP: Required) or encouraged deposit (ROARMAP: Requested). Among the 40 surveyed policies, 33 require mandatory deposit and seven encourage deposit, as shown in Figure 3 [Figure 3: see original paper]. Like British universities [12], mandatory deposit is the mainstream approach in Australia, influenced by ARC and NHMRC policy orientations. The mandatory OA policies issued by these agencies around 2013 explicitly require funded research outputs to be deposited in open access institutional repositories within 12 months of publication, with

written explanations required in final reports when copyright agreements prevent public access.

2.3 Policy Content Analysis

2.3.1 Content Structure Analysis of the 40 policy documents reveals that Australian OA policies typically include eight components: policy purpose, implementation scope, concept definitions, deposit types, open access requirements, stakeholder responsibilities, copyright statements, and version information. The core sections address specific requirements and procedures for institutional repository deposit, stakeholder responsibilities, and copyright statements.

2.3.2 Policy Purpose and Implementation Scope Twenty-eight of the 40 policies (70%) explicitly state their purpose. Summarized objectives include: (1) following and advancing the growing international OA trend to increase accessibility to academic research; (2) enhancing research impact and citation rates to improve institutional reputation; (3) facilitating dissemination and exchange of research findings locally, nationally, and internationally to attract potential collaborators; and (4) complying with national government and funding agency policies and programs. Enhancing research impact and institutional reputation represents the internal motivation, while compliance with government and funding agency “mandatory” policies constitutes external drivers—consistent with British OA policies’ “clear government and foundation policy orientation” [13].

Australian university OA policies cover three groups: (1) research faculty and staff; (2) graduate students (primarily requiring thesis submission); and (3) affiliated researchers such as honorary professors, visiting scholars, and joint appointees. Among 38 university policies, 26 (69.2%) cover the first two groups, while 12 explicitly include the third group.

2.3.3 Concept Definitions Australian OA policies provide definitions for relevant concepts—a distinctive feature compared to British [12] and German [18] policies. Twenty-one of the 40 policies define key concepts. The frequency of defined concepts was analyzed and visualized as a word cloud using Tagxedo (Figure 5 [Figure 5: see original paper]).

[Figure 5: see original paper] Word Cloud of Concept Definition Frequency

The frequency distribution reveals policy emphases: multiple policies first popularize the “open access” concept; then clarify deposit locations (institutional repositories), versions (accepted manuscript, published version, submitted version), and requirements (peer review, metadata submission); next define depositors (authors, researchers, graduate students), purposes (complying with HERDC, ERA, ARC, NHMRC requirements), and implementation routes (gold and green roads); and finally address copyright issues (copyright, intellectual property, Creative Commons) and the advocated deposit method (self-archiving). Australian university OA policy definitions emphasize deposit

locations, versions, and requirements, providing clear operational guidance for researchers.

2.3.4 Deposit Types All 40 policies require research output deposit. Eight universities use general language requiring submission of “research outputs” without specifying types, while 32 policies categorize required outputs. Table 1 presents the statistical results:

Frequency of Research Output Types in OA Policies

Research Output Type	Frequency
Journal articles	32
Conference papers	32
Books/book chapters	30
Theses/dissertations	28
Research reports/technical reports/government reports	18
Working papers/research datasets	15
Other original works (audio/video, software, posters, lectures, etc.)	12
Patents	5
Teaching materials	3

The data shows that peer-reviewed outputs (journal articles, conference papers, books/book chapters) receive the most attention, followed by theses/dissertations as representative graduate student outputs. Policies also address research-related original works (audio/video, posters, lectures, software), project-related reports, and extend to working papers and datasets. Some universities separately list patents and teaching materials, indicating particular institutional priorities.

Australian OA policies emphasize collecting peer-reviewed outputs due to ARC/NHMRC mandatory requirements for funded research and alignment with ERA and HERDC specifications. ERA (Excellence in Research for Australia), launched by ARC in 2010 [21], and HERDC (Higher Education Research Data Collection) [22] are Australian government programs that allocate substantial research funding based on collected data and evaluation results. Their specifications identify peer-reviewed journal articles, published books (whole or chapters), and peer-reviewed conference papers as primary research outputs, making these categories priority collection targets in university OA policies. Many universities explicitly state their intention to collect ERA/HERDC-compliant outputs, with institutions like Deakin University [15] and Queensland University of Technology [9] creating separate categories for such outputs.

2.3.5 Open Access Requirements and Timeframes Six policies do not mention mandatory open access requirements, while 34 specify requirements with distinctions. Mandatory open access applies to: (1) research funded by agencies like ARC and NHMRC with explicit open access requirements; (2) outputs where authors retain full copyright or copyright agreements permit public access; and (3) works published in OA journals. Outputs restricted by commercial or cultural sensitivity, contractual obligations, or confidentiality requirements are explicitly exempt.

For version prioritization, most policies rank peer-reviewed output versions as: published version (with publisher permission) > accepted manuscript (post-peer-review) > submitted version (pre-peer-review) > metadata (when publishers prohibit full-text access). Macquarie University [19], Queensland University of Technology [9], and the University of New South Wales [20] categorize outputs into mandatory and encouraged deposit types, requiring journal and conference articles while encouraging books, chapters, and other types.

Regarding theses, 20 universities encourage open access, with the University of Western Australia [23] and the University of Sydney [24] explicitly citing policy bases. Five universities do not clearly address thesis deposit and open access, 12 omit thesis requirements entirely, and the University of Queensland explicitly excludes theses from its OA policy. Overall, thesis open access in Australia remains a developing area.

For mandatory open access timeframes, most policies encourage immediate open access upon publication but provide embargoes considering copyright and confidentiality agreements. The shortest embargo is Deakin University's 90 days; most specify 12 months, while the University of Adelaide allows 24 months. Australian National University [25] provides the most detailed timeline: journal articles, conference papers, technical reports, and original works must be open within 12 months post-publication; OA books within 12 months; non-OA books within 5 years; graduate theses within 12 months of completion; and undergraduate prize-winning papers within 12 months of completion.

Overall, universities maintain cautious approaches to mandatory open access, respecting copyright ownership; most encourage thesis open access; and the common 12-month embargo provides reasonable buffer periods.

2.3.6 Stakeholder Responsibilities and Organizational Support Australian university OA policies demonstrate clear responsibility allocation and strong organizational support, with ARC and NHMRC serving as exemplary models. ARC clearly defines three stakeholder categories—project leaders, organizational managers, and repository managers—each with specific responsibilities. University policies follow similar classifications, though organizational and repository management responsibilities often reside with the library, while project leaders are research administrators. Researchers are responsible for uploading outputs to institutional repositories with relevant copyright agree-

ments. Libraries maintain and manage repositories, collect research outputs, ensure metadata inclusion, verify copyright compliance, and protect rights holders. Many universities designate the Vice-Chancellor for Research as overall policy coordinator, responsible for interpretation, management, and compliance review.

2.3.7 Copyright Statements Australian university OA policies emphasize copyright issues, often citing relevant laws and policies for support. Copyright statements address: copyright transfer and retention for deposited works; copyright amendment agreements between researchers and publishers; licensing agreements for repository metadata and full-text; and procedures for handling exceptions. Universities encourage green OA, promote Creative Commons licensing, advise authors to negotiate open access agreements with publishers at publication, provide copyright agreement templates, and offer guidance on OA journal selection and submission.

Recommendations for China' s OA Movement

While Chinese government agencies, research institutions, and libraries actively promote open access [26], releasing policies such as the NSFC Open Access Policy Declaration (2014) and CAS Open Access Policy Declaration (2014), and with Peking University, Lanzhou University, and Xiamen University publishing their own OA policies (2016), China' s OA movement progress remains limited. Current policies are non-mandatory without enforcement measures, and universities' roles as key OA stakeholders require further policy promotion. Australian experience offers valuable references:

1. **Government research management and funding agencies can provide strong impetus.** Australia' s 88.6% university OA policy prevalence stems from policy demonstration and funding incentives by government research agencies. The Australian Department of Education, ARC, and NHMRC have provided absolute leadership and 示范作用, directly driving the 2012-2014 high-growth period. ARC and NHMRC' s mandatory self-archiving policies and specifications on deposit types have set benchmarks for universities. Using research funding allocation as an economic lever, the Australian government has effectively promoted OA policy adoption and implementation.
2. **Top-down mandatory deposit policies provide development guarantees.** Australian universities began OA initiatives in 2003, experienced an exploratory phase (2004-2009), and achieved explosive growth (2012-2014) through top-down implementation. Nearly 83% of Australian university policies mandate deposit, with most encouraging policies being early versions. Mandatory deposit reflects recent government and foundation requirements, with many university management teams making decisions under pressure and designating Vice-Chancellors for Research or establishing university-wide implementation bodies. This

resembles British OA policy approaches and partly explains why OA movements in Australia and Britain have developed more rapidly than in the U.S. China's current non-mandatory policies with no penalties for non-compliance have limited effectiveness.

- 3. Complete, standardized, and clear policies facilitate implementation.** Among the 40 collected policies, only five are brief and vague; the remaining 35 are comprehensive. Australian OA policies include eight components: purpose, scope, definitions, deposit types, requirements, responsibilities, copyright, and version information (release date, effective date, revision date, next review date). This completeness, standardization, and clarity enables efficient researcher compliance and policy implementation. Government and funding agency policies with clear structures and specifications provide templates for university policy development. Among the 38 Australian university policies, 29 (76%) have borrowed from ARC and NHMRC mandatory OA policies in structure, mandatory deposit, open access requirements, timeframes, organizational responsibilities, and copyright statements.

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Author Contributions

Zhao Xing: Data collection, manuscript writing and revision.

Li Shuning: Research topic conception, research design, partial data collection, manuscript revision and finalization.

Tian Xiaodi: Partial data collection, manuscript revision.

Book Announcement

Network Users and Network Information Services, edited by Professor Chu Jingli and published by Ocean Press in March 2018 (ISBN: 9787502798994, Price: ¥52.00). This book examines the evolving information environment, focusing on network user needs and behaviors, and systematically addresses key issues in library and information services under digital and networked conditions. It serves as a graduate textbook and important reference for researchers and practitioners.

Note: Figure translations are in progress. See original paper for figures.

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