



**CREATING A DIGITAL REPOSITORY FOR NIGERIAN LANGUAGE STUDIES: A CASE STUDY  
FROM THE UNIVERSITY OF ILORIN**

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**Abstract**

*This study documents the development of a Digital Reference Repository (DRR) at the Department of Linguistics and Nigerian Languages, University of Ilorin, Nigeria. It addresses the digital marginalisation of African indigenous knowledge systems by digitising approximately 500 academic resources from 2000 to 2019, covering general linguistics and Nigerian languages. The objectives of this study are to conduct a systematic needs assessment of potential users to determine access patterns, resource preferences, and attitudes toward a digital repository; and to establish a functional digital repository using open-source technologies, guided by user needs and infrastructural realities. The research employed a mixed-methods design, combining a quantitative survey of 913 respondents with qualitative feedback from users and implementers. Omeka and the Dublin Core metadata framework were used to build the repository. Findings reveal overwhelming support for a digital*

*repository, strong preference for digital formats and persistent barriers to accessing linguistic materials. The project shows that a digital repository can be developed in resource-constrained African institutions and contributes to ongoing debates on open access, digital humanities, and decolonising knowledge infrastructure.*

**Keywords:** Digital repositories, Nigerian languages, open access, indigenous knowledge, academic visibility

## Introduction

The rapid growth of digital technologies has significantly changed the academic landscape of the world, thereby influencing how we generate, store, access, and share knowledge (Eve, 2014; Suber, 2012). Using digital tools has greatly improved how researchers share their work, connect with wider audiences, and contribute to knowledge across borders. These have made it possible for scholars across the world to exchange ideas and also collaborate (Lynch, 2003; Pinfield et al., 2020; Ope-davies, Arokoyo, & Onuh (To appear); Urua & Arokoyo (To appear)). This digital shift is, however, not even, with African institutions and researchers still facing serious obstacles to digital engagement (Bezuidenhout et al., 2017; Kahn et al., 2021). These challenges include limited access to indigenous knowledge, under-citation of African research, and low or no visibility of outputs from the continent. This unequal digital access is the situation Nwagwu (2020) describes as *epistemic silence*.

Nigeria is one of the most linguistically diverse countries in the world, with more than 500 languages (Eberhard et al., 2025; Arokoyo, 2025). However, scholarly materials on Nigerian languages are difficult to access outside the university. The consequences go beyond individual institutions to affect language documentation efforts, revitalisation initiatives, and the broader mission to decolonise the production of knowledge (Nyamnjoh, 2019).

The Department of Linguistics and Nigerian Languages, University of Ilorin, established in 1976, houses valuable materials accumulated over the past four decades, including undergraduate and graduate theses, faculty research, teaching materials, dictionaries, word lists, audio recordings, and multimedia resources. These materials document linguistic phenomena, preserve cultural knowledge, and support language education. However, it lacks

a comprehensive digital infrastructure to preserve and share its intellectual output. This is reflective of broader patterns in Nigerian higher education, since adoption of digital technology has been slow and uneven (Adomi & Anie, 2006; Okiki, 2012).

The department initiated the development of a Digital Reference Repository (DRR) to address the challenges of the limited availability of Nigerian language resources, the deterioration of physical and archival documents, and the limited international visibility of Nigerian linguistic scholarship. The project aimed to integrate Nigerian language research into the global scholarly community by digitising twenty years of academic output. This article also shows how African universities can develop sustainable digital systems that can serve their local needs and also promote global knowledge exchange. This project demonstrates the potential of careful planning, open-source tools, and institutional dedication.

### **Study Objectives**

The aim of this paper is to document the development a digital reference repository at the Department of Linguistics and Nigerian Languages, University of Ilorin. The specific objectives are to:

1. Describe the process of developing a Digital Reference Repository for Nigerian Language Studies.
2. Assess stakeholder needs, attitudes, and access practices related to digital linguistic resources.
3. Digitise and curate a representative collection of departmental outputs (2000–2019), accompanied by standardised metadata.
4. Evaluate the viability and usability of the repository in a resource-constrained environment.
5. Contribute to broader discussions on open access, knowledge decolonisation, and indigenous language preservation in African higher education.

## Literature Review

### Digital Repositories and Scholarly Communication

Digital repositories emerged as digital infrastructure for capturing, preserving, and disseminating academic outputs in the early 2000s (Crow, 2002; Lynch, 2003). This signalled the growth in scholarly communication, advocacy for open access, research data management, and efforts to address inequities in the circulation of knowledge globally (Tenopir et al., 2020; Chan et al., 2020). Contemporary repositories serve multiple functions. They preserve institutional intellectual capital, increase research visibility through web-based discovery, enable compliance with open access mandates, and support long-term digital preservation (Bankier & Perciali, 2008; Pinfield et al., 2020).

Academic institutions are increasingly recognising the importance of establishing robust repositories to preserve and disseminate their intellectual output (Oyadeyi, Ilupeju & Ajiboye, 2025). However, repository adoption and success vary significantly by region and institution. For example, institutions in Europe and North America have, over time, built very strong and highly reliable digital infrastructures that support research visibility and long-term access, while those in Africa continue to face challenges such as inadequate funding, unstable infrastructure, and limited technical expertise (Chisita & Chiparausha, 2019; Lwoga & Questier, 2014). Recent studies show increasing progress in African repository development, especially in South Africa, Kenya, and Nigeria (Mwangi, 2021; Onyancha, 2020).

### Open Access and Technologies

Open access (OA) advocates unrestricted access to knowledge for all. It culminates in efforts directed at removing financial and technical barriers to scholarly work and research output. It holds particular significance for scholars outside the West to access and disseminate research (Piwowar et al., 2018). In Africa, OA initiatives emphasise publishing in indigenous languages, collaboration, and the creation of regional platforms to disseminate scholarship on issues concerning the continent (Onyancha, 2020; Raju et al., 2020).

Open-source repository platforms such as DSpace, EPrints, and Omeka have offered viable solutions to institutions with limited financial resources (Islam & Akter, 2013). These platforms provide essential functions needed for digital archiving and also make it possible for users to

adapt to local contexts and institutional needs. However, successful implementation requires technology adoption, organisational change management, and user training and community engagement (Kim, 2010; Mwangi, 2021).

Recent literature shows that Nigerian universities are showing interest in institutional repositories (Oyadeyi, Ilupeju & Ajiboye, 2025; Ajibade et al., 2021; Onyancha, 2020). These studies highlight common challenges such as infrastructure limitations, difficulties in content collection, and concerns about sustainability. The studies also provide insights into strategies that have been successful in overcoming these challenges. Despite the fact that many universities have implemented institutional repositories, there is limited documentation of repository development that targets Nigerian language studies. This paper contributes to filling this gap.

## **Methodology**

### **Research Design**

The study employed a mixed-methods research approach, integrating a quantitative needs assessment survey of stakeholders, a qualitative and technical implementation report, and user feedback from early interaction with the repository development process. This design ensures that the study is both empirical and technically solid, and also tailored to the needs of its primary users.

### **Survey Instrument**

We designed a comprehensive survey to assess the needs, preferences, and attitudes of stakeholders regarding digital repositories. The questionnaire had closed-ended questions on types of resources, frequency of access, and format preferences, as well as open-ended questions on challenges faced, desired features, and suggestions.

### **Sampling and Participants**

Purposive sampling was used with the survey targeting primary users of the planned repository. This includes all undergraduate and postgraduate students in the Department of Linguistics and Nigerian Languages (approximately 850), all faculty members (28), and

selected alumni and researchers who had recently interacted with departmental resources (about 100). The survey was distributed through online platforms (Google Forms).

A total of 913 responses were received, representing an estimated response rate of 94%. The high response rate showed a strong departmental engagement and the perceived importance of the initiative. It demonstrates strong stakeholder interest. The distribution of respondents shows that students make up 96.3%, faculty members make up 2.2%, and alumni/external researchers make up the remaining 1.5%. Note that every faculty member took part in the survey.

### **Data Analysis**

We analysed quantitative data using simple statistics to identify patterns in resource preferences, access challenges, and format preferences. These findings guided our decisions on repository design regarding content priorities, organisational structure, search functionality, and interface design.

### **Ethical Considerations**

Ethical approval was obtained from the Faculty Research Committee to conduct the study. Participation was voluntary, with informed consent embedded in the online Google form. Copyright restrictions were observed at all stages.

### **Repository Development Phase**

The technical component of the project had five phases: needs assessment and stakeholder engagement, platform selection and technical setup, digitisation of content and creation of metadata, launching of the repository and user training, and evaluation and continuous improvement. This iterative process facilitated responsive adjustments based on challenges encountered and user feedback.

#### **Phase 1: Needs Assessment and Stakeholder Engagement**

Insights from the survey carried out guided the selection of the platform, the design of the interface, and the content to be digitised.

## **Phase 2: Platform Selection**

After evaluating several open-source repository platforms like DSpace, EPrints, and Omeka, Omeka was selected based on the following criteria: Ease of use, flexibility i.e., support for diverse media types (text, audio, video, images), metadata standards platform that support Dublin Core, free, open-source software requiring no licensing fees except to expand cloud space, presence of an active developer community and extensive documentation, and expandability. The flexibility of the Omeka platform which makes it to be widely usable in cultural heritage and museum contexts also aligns well with the focus of the repository on preserving linguistic and cultural materials. To enhance usability, a custom interface was developed to make the platform navigable even for first-time users. The interface incorporates features such as:

- Search by language, format, contributor, or author,
- Browsing by collection or keyword,
- Download options and citation export.

## **Phase 3: Digitisation and Metadata Creation**

Approximately 500 resources were digitised. This phase of the project is outlined as follows: selection of materials to be digitised, digitisation procedure, creation of metadata, and uploading to Omeka via the admin panel. Selection of materials prioritised long essays, students' dissertations and theses submitted to the department spanning 20 years in the initial phase, representing the breadth of research and teaching endeavour of the department.

The digitisation of the materials involved scanning at medium to high resolution, saved as searchable PDFs using OCR technology where appropriate. File sizes were optimised to balance quality and accessibility for users with limited bandwidth. We adopted the Dublin Core schema to create our metadata: Title, Creator/Author, Date, Language, Subject/Keywords, Description/Abstract, Media type, file format, Copyright status, Resource type (thesis, article, teaching material) and bulk created this information for each material in the collection, categorised into four collections. We carried out peer reviews of entries, consistency checks, and iterative refinements based on member feedback to ensure accuracy

and quality. A team of trained students ( $n = 7$ ) assisted with digitisation and metadata entry under faculty supervision, ensuring quality while building capacity.

#### Phase 4: Repository Launch and User Training

A prototype was launched internally, and user training was conducted for staff and students. The training demonstrated how the repository will be used. Search functions, download options, citation exports, and other features were demonstrated.

#### Phase 5: Evaluation and Continuous Improvement

Iterative improvements were made based on usability tests and feedback from staff and students. Some of the comments during the launch and user training sessions further refined the repository.

### Results and Findings

#### Resource Type Preferences

The survey ( $n = 913$ ) revealed the types and patterns of resources that the respondents prefer. *Books and Textbooks* were the most frequently used resource type, identified by 58.6% of respondents. *Multimedia Resources*, such as audio and video materials, were prioritised by 27.2%. This reflects a growing interest in interactive and audiovisual learning formats. 9.7% preferred *Journal Articles*, while the remaining 4.5% prefer *Other Materials* (theses, conference papers, teaching materials). These findings were responsible for content prioritisation, with initial digitisation focusing on textbooks and multimedia materials.

What types of academic materials do you frequently use or refer to in your work or studies?  
913 responses

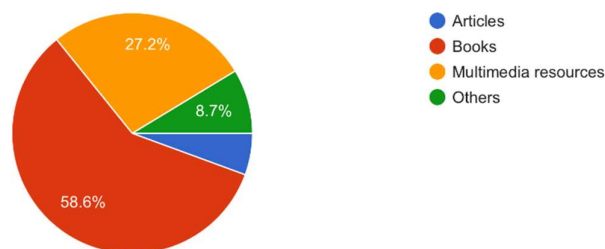


Fig. 1: Distribution of Preferred Academic Materials



## File Format Preferences

The survey also examined preferred formats to access different types of materials. The survey revealed that respondents strongly preferred digital formats. However, the results revealed that the majority (85.5%) preferred the PDF Format, while 19.1% and 10.6% preferred Video and *Audio Files*, respectively. We primarily used the PDF format due to its high preference, while other formats were used when feasible.

Are there specific formats you prefer for accessing academic materials?

913 responses

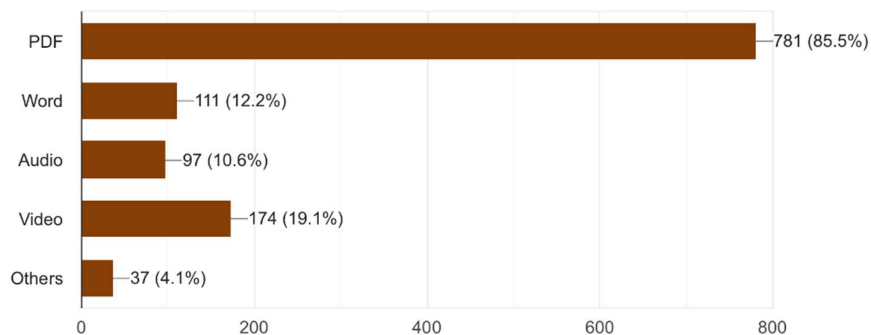


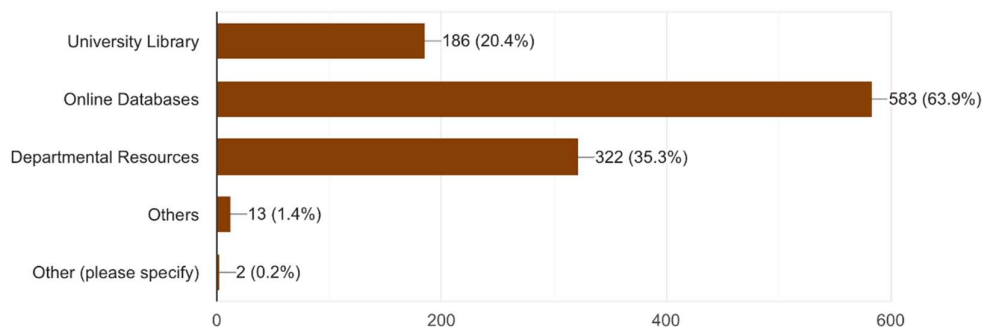
Fig. 2: *Format Preference for Accessing Academic Materials*

## Patterns of Access

Current access patterns revealed significant barriers. **Online Databases:** 63.9% primarily access materials through online databases (Google Scholar, ResearchGate), 35.3% rely on departmental library collection, while 20.4% make use of the university library. **Personal Collections:** 1.4% depended on personal or peer-shared materials, and **other Sources:** 0.2%. The reliance on online databases (63.9%) demonstrated demand for digital access and validated the repository initiative.

How do you currently access digital resources related to linguistics and Nigerian languages?

913 responses



**Fig. 3:** Preferred Mode of Getting Resources on Linguistics and Nigerian Languages

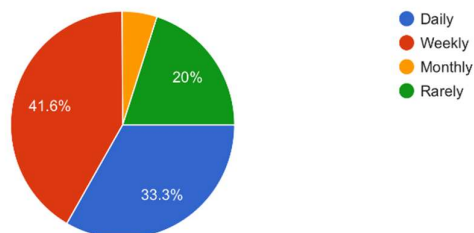
### Attitudes Towards a Digital Repository

Attitudes toward digital repository creation were overwhelmingly positive, with a 94.8% support rate, providing a strong reason to proceed with the implementation of the digital repository. The breakdown is as follows: **Strongly Support:** 76.3%, **Support:** 18.5%, **Undecided:** 3.7%, and **Oppose/Strongly Oppose:** 1.5%

On frequency of access and engagement with linguistic materials, the patterns of responses are as follows: 33.3% noted they engage with linguistic resources **daily**, 41.6% access materials weekly, and 6% monthly, while 20% **rarely** sought materials. The summary is presented in the pie chart below.

How often do you access academic materials related to Linguistics or Nigerian Languages?

913 responses



**Fig. 4:** Pie chart showing frequency of respondents' access to academic materials related to Linguistics or Nigerian Languages (n = 913)

### Repository Output

The repository contains four primary expandable collections:

1. **Digital Reference Repository:** All papers and works related to the project are in this collection.
2. **Long Essays:** This collection features the compilation of long essays of the department.
3. **MA Dissertations:** Master's dissertations are featured in this collection.
4. **Lexicography Projects:** This is a collection of specialised dictionaries by students of LIN424: Lexicography.

## Discussion

### Addressing Digital Marginalisation

The development of the repository and the positive feedback from respondents about the need for repositories demonstrate the possibilities of African institutions to effectively implement digital infrastructure despite resource constraints. The repository also addresses concerns about preservation that are critical in contexts where environmental factors, infrastructural instability, and resource constraints make analog collections difficult and vulnerable. Digital preservation that makes use of cloud-based redundancy offers more reliable protection than physical storage in many African institutional contexts (Chisita & Chiparausha, 2019).

### Metadata and Multilingual Challenges

Making use of standardised metadata for our multilingual materials presented both challenges and opportunities. The metadata schema, Dublin Core, provided a flexible framework. Adaptations were made to accommodate Nigerian language materials, including parallel titles, multilingual descriptions, and language-specific subject headings.

The decision to support metadata in English and Nigerian languages enhances accessibility for diverse users while recognising that many potential users may prefer searching in indigenous languages. This approach aligns with calls for linguistically inclusive knowledge infrastructure that avoids giving exclusive privilege to English over other indigenous languages (Arokoyo, 2025).

### Infrastructure and Practical Challenges

Limited internet access and power disruptions affected some stages of digitisation. We also used cloud platforms and scheduled digitisation tasks when resources were more available to

reduce these issues. Incompatibility with legacy formats was resolved by implementing multi-format conversion tools, including handheld scanners. Above all, we had limited financial resources.

### **Recommendations**

The development of digital repositories requires an inclusive planning that engages all stakeholders. Institutions should conduct comprehensive needs assessments to align the objectives with the user requirements, institutional goals, and infrastructural realities. Building on this foundation, they need a strong technical infrastructure that encompasses reliable hosting and backup systems, adheres to standardised metadata and interoperability protocols, and optimises for both discoverability and mobile access. The strategy for the digitisation of content should take into consideration the unique and diverse material output of the institution. This strategy should be supported by rigorous quality control, prospective permissions, and a balance between comprehensive coverage and strategic selection. The building of capacity achieved through staff and student training, procedural documentation, user support resources, and active participation in institutional and regional networks, is also very important. Finally, long-term sustainability and collaboration will depend on situating repositories within institutional strategies, securing stable funding, integrating content recruitment into workflows, monitoring impact, and nurturing regional partnerships that advance African-led scholarly infrastructure.

### **Conclusion**

The Unilorin Linguistics Digital Reference Repository demonstrates that Nigerian institutions can successfully implement digital infrastructure, which will enhance global visibility and accessibility of indigenous knowledge despite significant challenges, limited resources, and infrastructure constraints. The initiative makes multiple contributions. Practically, it provides 24/7 access to nearly 500 resources documenting Nigerian languages and linguistics, serving students, faculty, researchers, and community members locally and internationally. Methodologically, it documents an implementation process offering guidance for similar initiatives in resource-constrained contexts. Theoretically, it contributes to the understanding

of digital humanities in Africa, open access in the Global South, and strategies for addressing the epistemic marginalisation of African scholarship.



## References

- Adomi, E. E., & Anie, S. O. (2006). An assessment of computer literacy skills of professionals in Nigerian university libraries. *Library Hi Tech News*, 23(2), 10-14.
- Ajibade, P., Omotosho, B., & Okiki, O. (2021). Adoption of institutional repositories in Nigerian universities: The influence of awareness and perceived usefulness. *Digital Library Perspectives*, 37(3), 289-303.
- Arokoyo, B. E. (2025). *From the mouths of babes to the wisdom of Elders: A voyage of language exploration*. University of Ilorin: Inaugural Lecture Series.  
<https://www.unilorin.edu.ng/wp-content/uploads/2025/06/282.pdf>
- Bankier, J. G., & Perciali, I. (2008). The institutional repository rediscovered: What can a university do for open access publishing? *Serials Review*, 34(1), 21-26.
- Bezuidenhout, L., Kelly, A. H., Leonelli, S., & Rappert, B. (2017). Beyond the digital divide: Towards a situated approach to open data. *Science and Public Policy*, 44(4), 464-475.
- Chan, L., Okune, A., & Sambuli, N. (2020). What is open and collaborative science and what roles could it play in development? In *Science Communication and Open Science* (pp. 85-104). Routledge.
- Chisita, J., & Chiparausha, B. (2019). Open access institutional repositories in Africa: Challenges and opportunities. *Library Hi Tech News*, 36(2), 1-5.
- Crow, R. (2002). *The case for institutional repositories: A SPARC position paper*. ARL Bimonthly Report, 223, 1-4.
- Eberhard, D. M., Simons, G. F., & Fennig, C. D. (eds.). (2025). *Ethnologue: Languages of the world*, Twenty-eighth edition. Dallas, Texas: SIL International
- Eve, M. P. (2014). *Open access and the humanities: Contexts, controversies and the future*. Cambridge University Press.
- Islam, M. S., & Akter, R. (2013). Institutional repositories software packages: A comparative analysis. *International Journal of Information Dissemination and Technology*, 3(4), 242-249.

- Kahn, M., Masuku, M., & Goedegebuure, L. (2021). Embedding open science practices in African universities: Considerations and strategies. *Development and Change*, 52(3), 674-695.
- Kim, J. (2010). Faculty self-archiving: Motivations and barriers. *Journal of the American Society for Information Science and Technology*, 61(9), 1909-1922.
- Lwoga, E. T., & Questier, F. (2014). Open access behaviours and perceptions of health sciences faculty and roles of information professionals. *Health Information & Libraries Journal*, 31(2), 37-49.
- Lynch, C. A. (2003). Institutional repositories: Essential infrastructure for scholarship in the digital age. *portal: Libraries and the Academy*, 3(2), 327-336.
- Mwangi, J. K. (2021). Institutional repositories in Kenyan universities: Current status and future directions. *Library Management*, 42(6/7), 413-427.
- Nwagwu, W. E. (2020). Open access initiatives in Africa: Structure, incentives and disincentives. *Journal of Academic Librarianship*, 46(6), 102231.
- Nyamnjoh, F. B. (2019). Decolonizing the university in Africa. In J. Kwoba, P. Nyawo, & P. Plonski (Eds.), *Decolonising the university* (pp. 19-46). Oxford University Press.
- Okiki, O. C. (2012). Availability and use of electronic information resources in Nigerian academic libraries. *International Journal of Information Science and Management*, 10(2), 27-42.
- Onyancha, O. B. (2020). Open access publications in Africa: A review of policies and practices. *Scholarly and Research Communication*, 11(1), 0120327.
- Ope-Davies, T., Arokoyo, B. E., & Onuh F. Tools and Techniques in Digital Humanities. In Aliu A. Sani & Obasikene, John L. (eds.) *Fundamentals of Arts: Book 1. NUC CCMAS Book Series. (To appear)*
- Oyadeyi, A. E., Ilupeju, O. A., & Ajiboye, B. A. (2025). Adoption of DSpace Software for the Development of Institutional Repository: Ajayi Crowther University Experience . *Communicate: Journal of Library and Information Science*, 27(1), 109–129. Retrieved from <https://www.cjolis.org/index.php/cjolis/article/view/151>

- Pinfield, S., Salter, J., Bath, P. A., Hubbard, B., Millington, P., Anders, J. H., & Hussain, A. (2020). Open access repositories worldwide, 2005-2012: Past growth, current characteristics, and future possibilities. *Journal of the Association for Information Science and Technology*, 65(12), 2404-2421.
- Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B., Farley, A., West, J., & Haustein, S. (2018). The state of OA: A large-scale analysis of the prevalence and impact of open access articles. *PeerJ*, 6, e4375.
- Raju, R., Claassen, J., Miya, M., & Moll, T. (2020). The role of the library in South African institutional repositories: Institutional perspectives. *Library Management*, 41(6/7), 415-429.
- Suber, P. (2012). *Open access*. MIT Press.
- Tenopir, C., Dalton, E. D., Allard, S., Frame, M., Pjesivac, I., Birch, B., Pollock, D., & Dorsett, K. (2020). Changes in data sharing and data reuse practices and perceptions among scientists worldwide. *PLOS ONE*, 15(8), e0229003.
- Urua, E. & Arokoyo, B. E. Applying digital tools for your projects. In Aliu A. Sani & Obasikene, John L. (eds.) *Fundamentals of Arts: Book 1. NUC CCMAS Book Series. (To appear)*

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