

Digital Publications in Culture

Examples and Key Features –
Survey Results from the
NFDI4Culture Community

**Arnold, Matthias
Büttner, Alexandra
Heseler, Jörg
Worthington, Simon**

Digital Publications in Culture: Examples and Key Features – Survey Results from the NFDI4Culture Community

by Matthias Arnold , Alexandra Büttner , Jörg Heseler , and Simon Worthington 

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Report

German translation: *Digitale Publikationen im Kulturbereich: Beispiele und Eigenschaften – Umfrageergebnisse aus der NFDI4Culture Community*

Task Area 4 of the NFDI4Culture is looking at which initiatives are enhancing their publications for open scholarship. Its aim is to establish a guideline for scholars to create publications with related data with a focus on long-term digital preservation.

In order to get a full understanding of existing enhanced publications in the NFDI4Culture community an online survey was conducted. Its aim was to gather further representative examples. The survey was also used to get a better understanding of what the NFDI4Culture community considers to be an enhanced publication and what features they associate with it.

The survey has shown a variety of examples and contexts which go beyond standard research publications or digital collections. In addition, it has shown that a term is needed, that can capture multimodal, multimedia and multilocal publications.

Keywords: survey, NFDI4Culture, culture, online publishing, enhanced publication, open access, digital preservation, open data, FAIR, PID, LOD, multimedia, multimodal, distributed

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Within the framework of NFDI4Culture, Task Area 4 (TA4), the "Digital Publications and Data" Working Group is looking into the multiple ways in which initiatives, publishers, researchers, and research projects are digitally enhancing their publications for open scholarship. The aim of the working group is to establish criteria that can function as a guideline for scholars to create publications and their associated research data, with a focus on long-term digital preservation. For this purpose, the working

group is comparing and looking at a wide spectrum of publications ranging from conventional academic papers and monographs, to multimodal project outcomes, and enriched databases.

In order to get a full picture of existing enhanced publications in the NFDI4Culture community an online survey was conducted to gather further representative examples, which was its main purpose as opposed to a quantitative survey. The survey was also used to get a better understanding of what the NFDI4Culture community considers to be an enhanced publication and what features they associate with it. Existing literature as well as initial discussions within the working group revealed the challenge to find a consensus on a term to use for this emergent phase of scholarly cultural publishing. As a starting point the term *enhanced publications* (Woutersen-Windhouwer and Brandsma 2009) was adopted.

We define an enhanced publication as a publication that is enhanced with three categories of information: (1) research data (evidence of the research), (2) extra materials (to illustrate or clarify), or (3) post-publication data (commentaries, ranking).

Report on Enhanced Publications state-of-the-art, Saskia Woutersen-Windhouwer & Renze Brandsma (UvA), April 2009. (Woutersen-Windhouwer et al. 2009)

But the survey has shown the variety and contexts which reach far beyond standard research publication or digital collections – as well as being able to plug-into new functioning infrastructures, such as linked open data – that forces us to look for a different term that can capture this *multimodal-multimedia-multilocal* transformation.

The preliminary literature review (which can be found at the end of the report: ‘Literature review reference list’) and an email survey among some of our forum participants, however, did reveal commonalities: For example, the majority understands an enhanced publication to be a digital publication, using scientific methods, that consists of different parts, and is openly accessible.

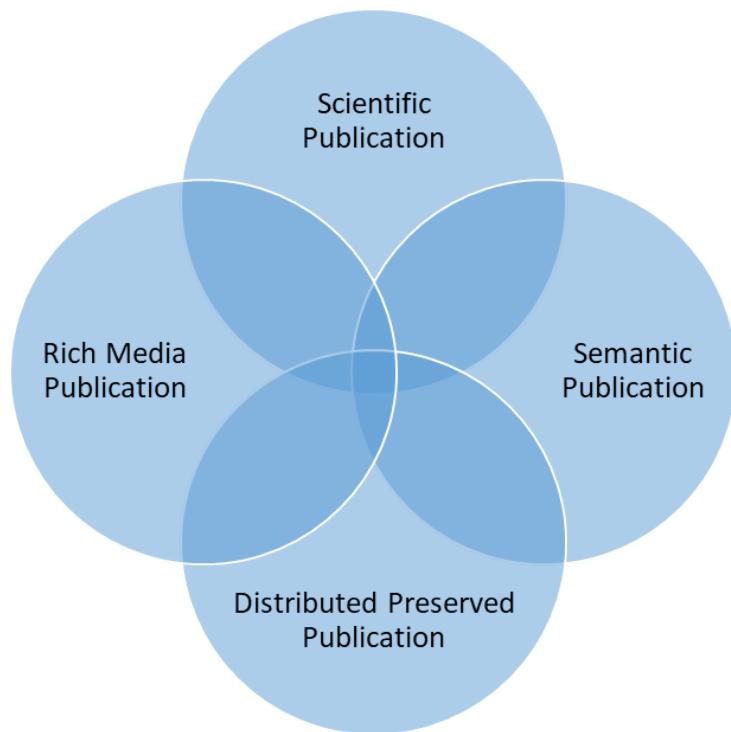


Figure 1: Four directions of development of an enhanced publication

However, different developments also emerged: Either the idea of an enhanced publication went in the direction of *Science Publication*, where research data, thus, support reproducibility; or it went in the direction of *Semantic Publication*, where metadata drive the machine-assisted evaluation and automatic linking of publications; or it went in the direction of *Rich Media Publication*, where interactivity and multimedia promote the understanding of a publication. For the Task Area TA4 ‘Data Publication and Data Availability’ the long-term archiving or the distribution of the components of such a publication at different locations as well as indexing in central catalogues are of course interesting – referred to as *Distributed Preserved Publication* in the above figure.

Based on these findings, the working group created this first survey.

Results of the Enhanced Publication Survey

The primary goal of the survey was to get examples of enhanced publications with titles and web addresses from the NFDI4Culture community. The group took the opportunity to ask for terms and characteristics that the community associates with an enhanced publication. This survey was distributed between April and May 2022 via

the NFDI4Culture Twitter profile and mailing list. The software used for the survey was LimeSurvey.

Content-wise, a short self-introduction about our working group and previously mentioned survey goals were listed at the beginning. To steer the participants, the group only mentioned that our research focuses on open publications with ‘multimodal presentations’ and ‘enriched historical datasets’, omitting ‘conventional research publications’ of papers and monographs.

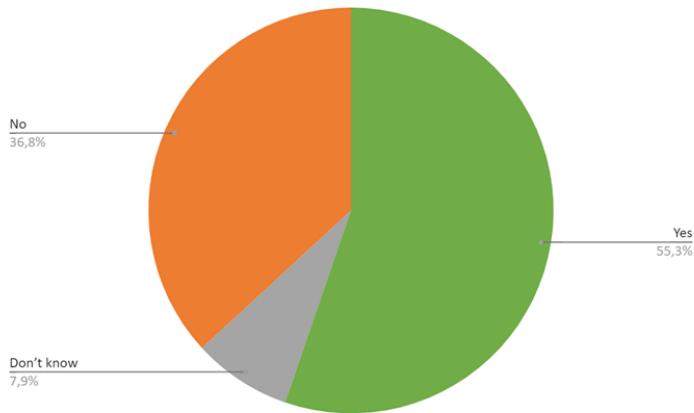


Figure 2: Are you familiar with the term Enhanced Publication? (38 answers)

In total, we received 83 submissions. Of these, 25 questionnaires were fully completed. The rest had dropped out of the survey in between. The number of responses is therefore shown in parentheses at the end of each survey question. However, the number decreases over time. Our first question was whether participants were familiar with the term ‘enhanced publication’. Just over half (55%) of the participants said they were familiar with the term.

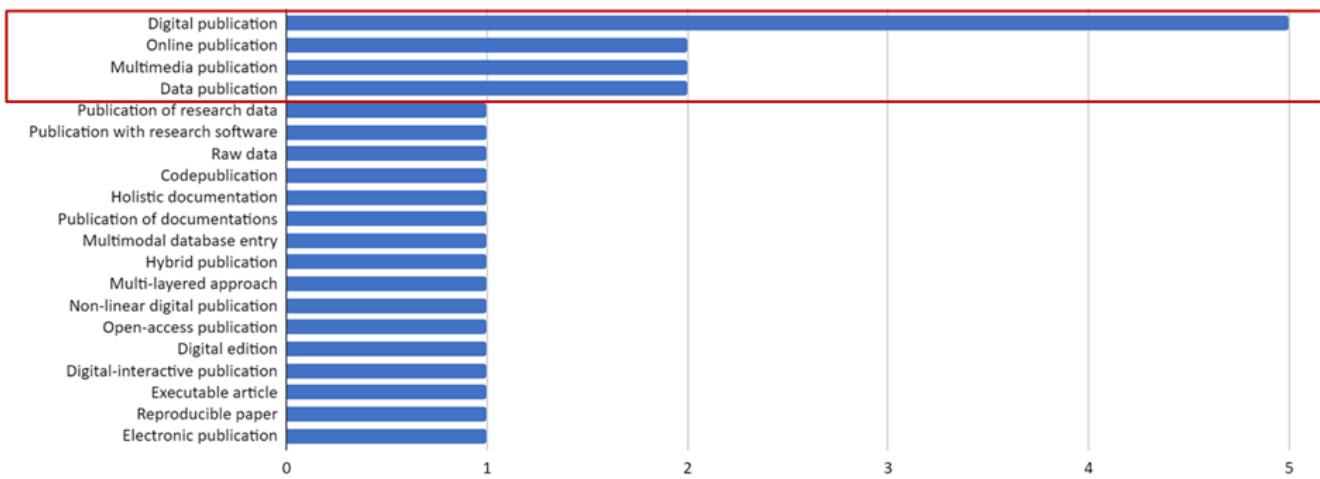


Figure 3: The working group chose the term 'enhanced publication' to describe complex digital publications, but there might be others more commonly used by various community groups. What other terms are you familiar with? (15 answers)

In the 2nd question, the group asked for alternative terms to enhanced publications that describe equally complex, digital releases but are more commonly used in the community. Some participants named several terms. The top 4 include: "Digital publication", "Online publication", "Multimedia publication" and "Data publication".

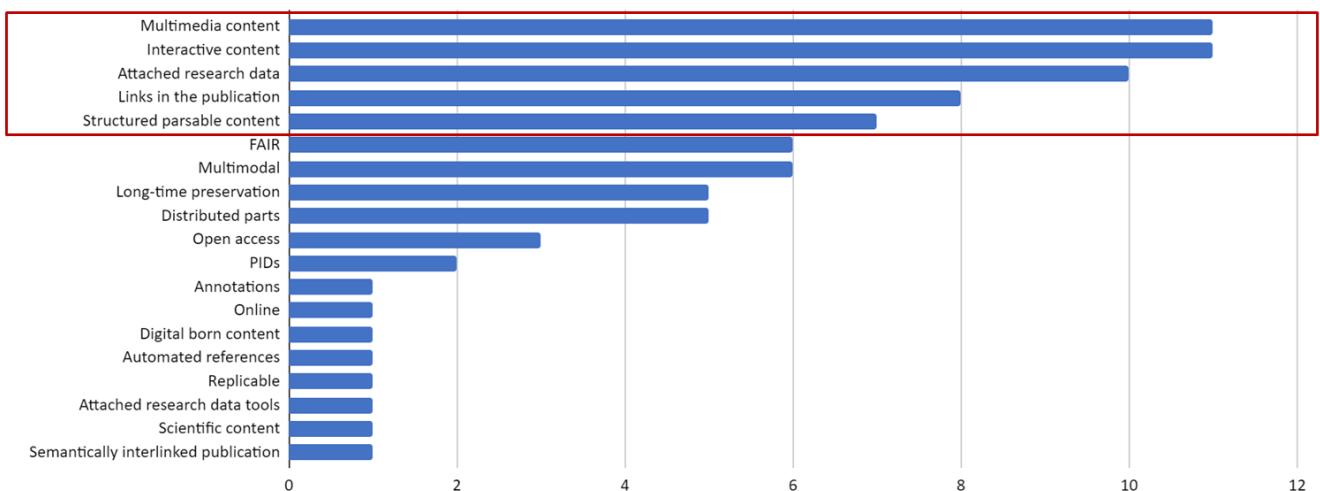


Figure 4: Let us know spontaneously what three terms you associate with an enhanced publication. (25 answers)

In the 3rd question, the participants were asked to spontaneously enter 3 terms that they associate with an enhanced publication. Roughly clustered, the most frequently mentioned 5 were: in 1st and 2nd place (44% each) "multimedia content" and "interactive content", which were almost always mentioned in connection; in 3rd place (40%) "linked

research data", in 4th place (32%) "hyperlinks in the publication" and in 5th place (28%) "structured machine-readable content", although there is room for interpretation of answers here: if a participant stated, for example, "hypertext", did he mean the machine-readability of the content or the interactivity of links within or between several documents?

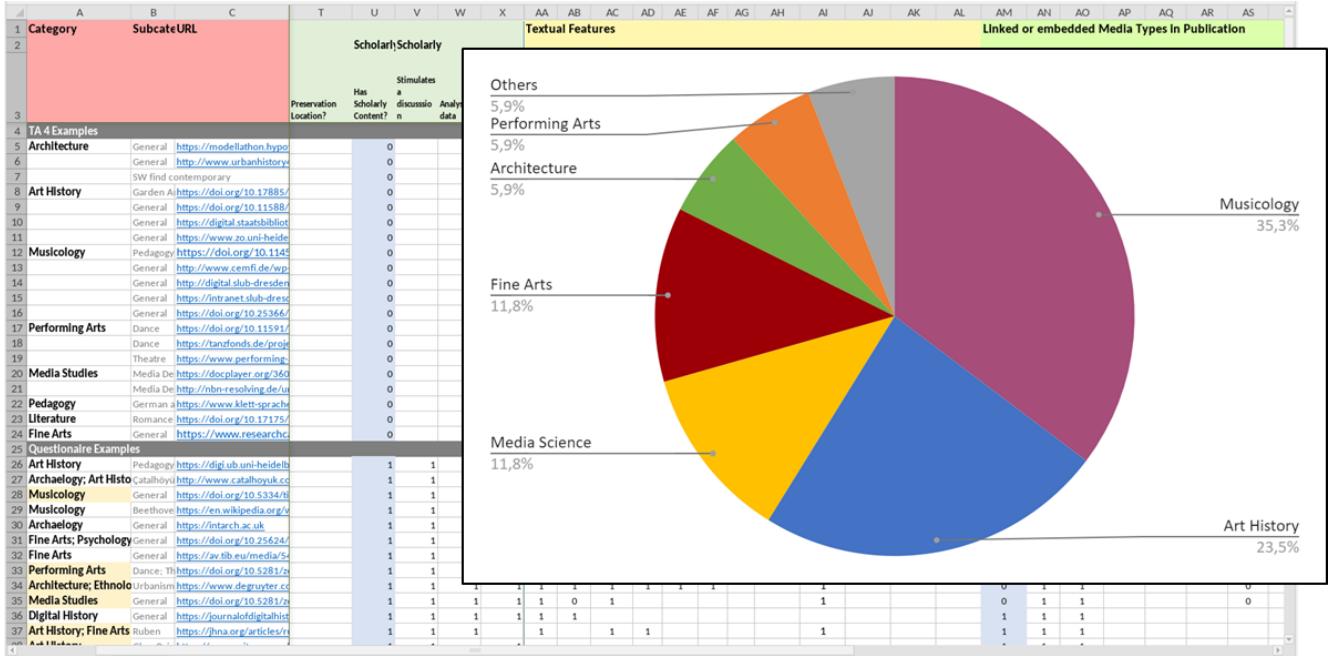


Figure 5: Please provide a title and URL of examples for an enhanced publication you know.
(13 answers classified by discipline)

In the 4th question the community was asked for examples of enhanced publications with title and URL. Thirteen examples of enhanced publications were given. Most of them came from the field of musicology and art history. The results were collected in a table and are currently being evaluated and clustered according to the criteria determined.

The screenshot shows the TISMIR website interface. At the top, there's a navigation bar with links for Home, About, Contact, Content, Research Integrity, Search, Log in, and Register. Below the header, the journal title 'Transactions of the International Society for Music Information Retrieval' is displayed, along with a logo of musical notes. A banner at the top indicates the reading is 'Steerable Music Generation which Satisfies Long-Range Dependency Constraints'. On the left, a sidebar lists 'Special Collection: AI and Musical Creativity' and 'Research'. The main content area features the article title 'Steerable Music Generation which Satisfies Long-Range Dependency Constraints' and authors 'Paul Bodily, Dan Ventura'. Below the title is the abstract section, which discusses the challenges of generating music with long-range dependencies. To the right of the abstract is a sidebar with navigation links: JUMP TO, DISCUSSIONS (which is highlighted), RELATED CONTENT, Abstract, 1 Introduction, 2. Generating music with steerable short-range dependencies, 3 Generating music with steerable long-range dependencies, 4. Example compositions with long-range dependencies, 5. Discussion and conclusion, Notes, Competing Interests, and References.

Figure 6: Publication from musicology. Bodily, Paul, and Dan Ventura. 'Steerable Music Generation which Satisfies Long-Range Dependency Constraints'. *Transactions of the International Society for Music Information Retrieval* 5, no. 1 (25 March 2022): 71–86. <https://doi.org/10.5334/tismir.97>

The spectrum of examples was very broad. Scientific articles came back, such as about AI-supported musical compositions from the field of musicology, which are reminiscent of publications from the natural sciences (see figure above). This article, for example, is an HTML article with an additional printable PDF. The article has persistent identifiers (DOI and ISSN), even a JATS/XML structuring. In addition, research data is provided in the form of linked Java source code in GitHub even with primary data. The publication is thus composed of partial publications that are published on different platforms, i.e., multilocally. The article itself is also embedded in a very interactive web interface with discussion and annotation functions. Overall, all of the examples provided by the respondents, like this multi-modal and multi-local publication, were open access and open licenced.

The screenshot shows the Wikipedia page for 'Symphony No. 5 (Beethoven)'. The page includes a sidebar with navigation links like 'Main page', 'Contents', and 'Help'. The main content discusses the symphony's history, its four movements, and its iconic four-note motif. It features a musical score snippet and a historical manuscript of the symphony's title page. A note at the top indicates this is an old revision from May 2022.

Figure 7: 'Symphony No. 5 (Beethoven)'. In Wikipedia, 1 May 2022.
[https://en.wikipedia.org/wiki/Symphony_No._5_\(Beethoven\)](https://en.wikipedia.org/wiki/Symphony_No._5_(Beethoven))

A Wikipedia article on Beethoven's Symphony No. 5 enriched with foreign research data was also included. Wikipedia articles are versioned, but do not have a persistent identifier (PID).

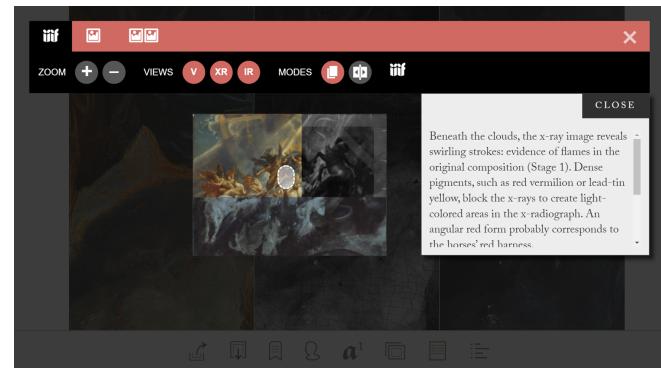


Figure 8: Publication from the field of art history (left) with integrated X-ray tool (right). Source: Gifford, E. Melanie. 'Rubens's Invention and Evolution: Material Evidence in The Fall of Phaeton'. Journal of Historians of Netherlandish Art. Accessed 1 May 2022. <https://jhna.org/articles/rubens-invention-evolution-fall-of-phaeton/>

Scientific articles like this one from the field of art history were also listed as examples. This article (see above figure) is about the analysis of a painting by the Flemish artist Peter Paul Rubens. In this publication, an interactive International Image Interoperability Framework (IIIF) painting X-

ray tool was integrated, with which one could view annotated image layers.

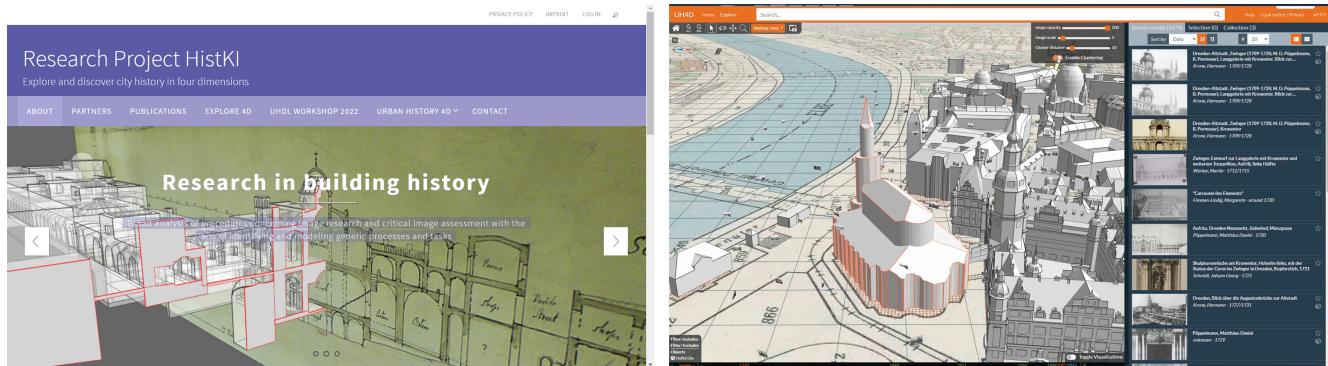


Figure 9: UrbanHistory4D project website on the left and integrated 3D browser app on the right. Source: Hofmann, Mathias, Sander Münster, and Florian Niebling. 'Research Group Urban History 4D – Explore and Discover City History in Four Dimensions', 2021. <http://www.urbanhistory4d.org/wordpress/>

Likewise, many project websites were named, such as the UrbanHistory4D project with an integrated 3D browser app: the Dresden Altmarkt in 3D with located historical photographs in different time periods.

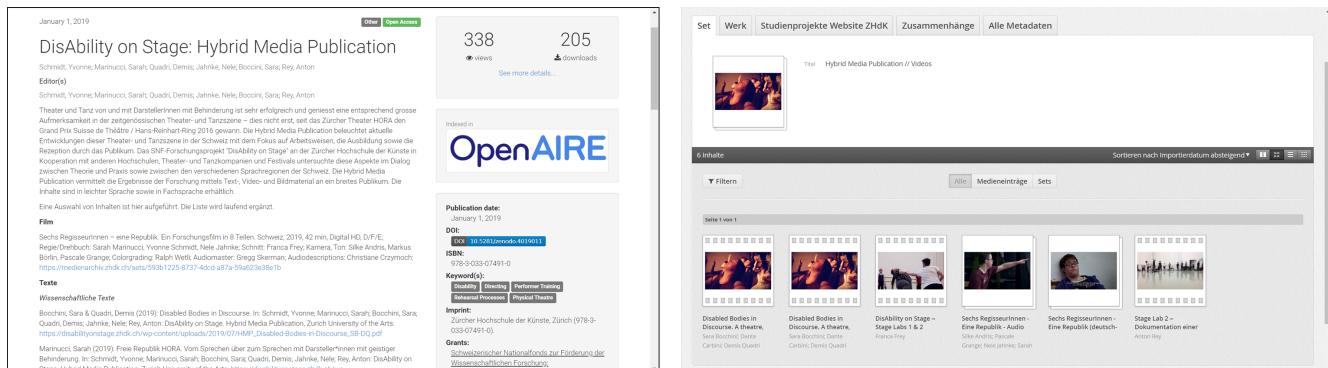


Figure 10: Publication with only a short abstract on the left and links to a picture gallery on the right, among others. Source: Schmidt, Yvonne, Sarah Marinucci, Demis Quadri, Nele Jahnke, Sara Boccini, and Anton Rey. 'DisAbility on Stage: Hybrid Media Publication', 1 January 2019. <https://doi.org/10.5281/zenodo.4019011>

This example "DisAbility on Stage: Hybrid Media Publication" is characterised by the fact that it primarily functions as a kind of landing page. This example provides access to a collection of *multimedia* publications that were published on different platforms, i.e. *multilocally*, and are united here with one persistent identifier (DOI).

MoVi The digital Mozart score Viewer

Work selection EN • DE ? ☰

OVERVIEW • DASHBOARD • MEI CODE

Violino I **Presto**

Violino II

Viola

Violoncello & Basso

12

Texts

Select staves

Audio

- MIDI
- Select recordings

0:05 / 3:45

Kurpfälzisches Kammerorchester Mannheim (2002)

Accademia Ziliani (1990)

Actions

Navigator

Editorial interventions

Ossias

Collate DME editions

NMA Editions

Configure MEI Inspector

[page 1 of 7] Go to measure page Original line breaks Zoom

Figure 11: Website of the “Digital Mozart Score Viewer” MoVi. Source: <https://dme.mozarteum.at/movi/en>

Project websites with music players of digitised Mozart, Beethoven or jazz works were also indicated. These websites offer interactive sheet music with the addition of Music Encoding Initiative (MEI) code and several audio recordings between which the listener can choose.

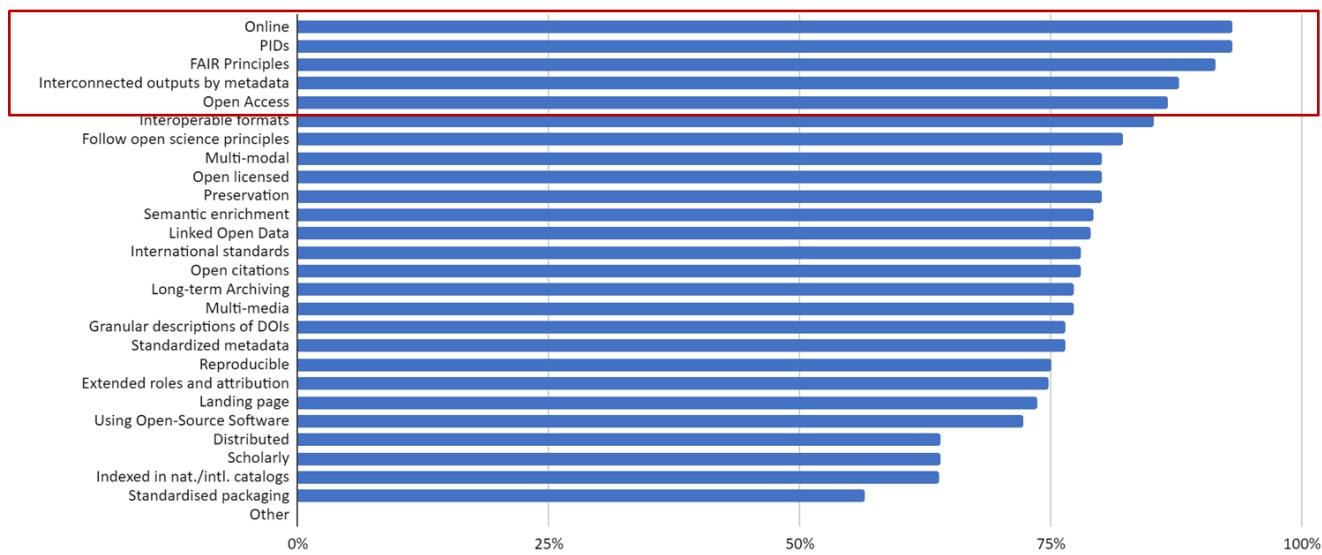


Figure 12: Which of the following features are characteristic for an enhanced publication? (23 answers, average)

In the 5th question of this survey, the respondents were asked to rate the characteristics from not important to very important. The results are shown here in order of frequency. As the group was more interested in the terms associated with an enhanced publication, no further explanation was given for the characteristics. The 5 most frequently mentioned characteristics are: 1st place: online, 2nd place: persistent identifiers, 3rd place: FAIR principles, 4th place: networked output via metadata, and 5th place: open access.

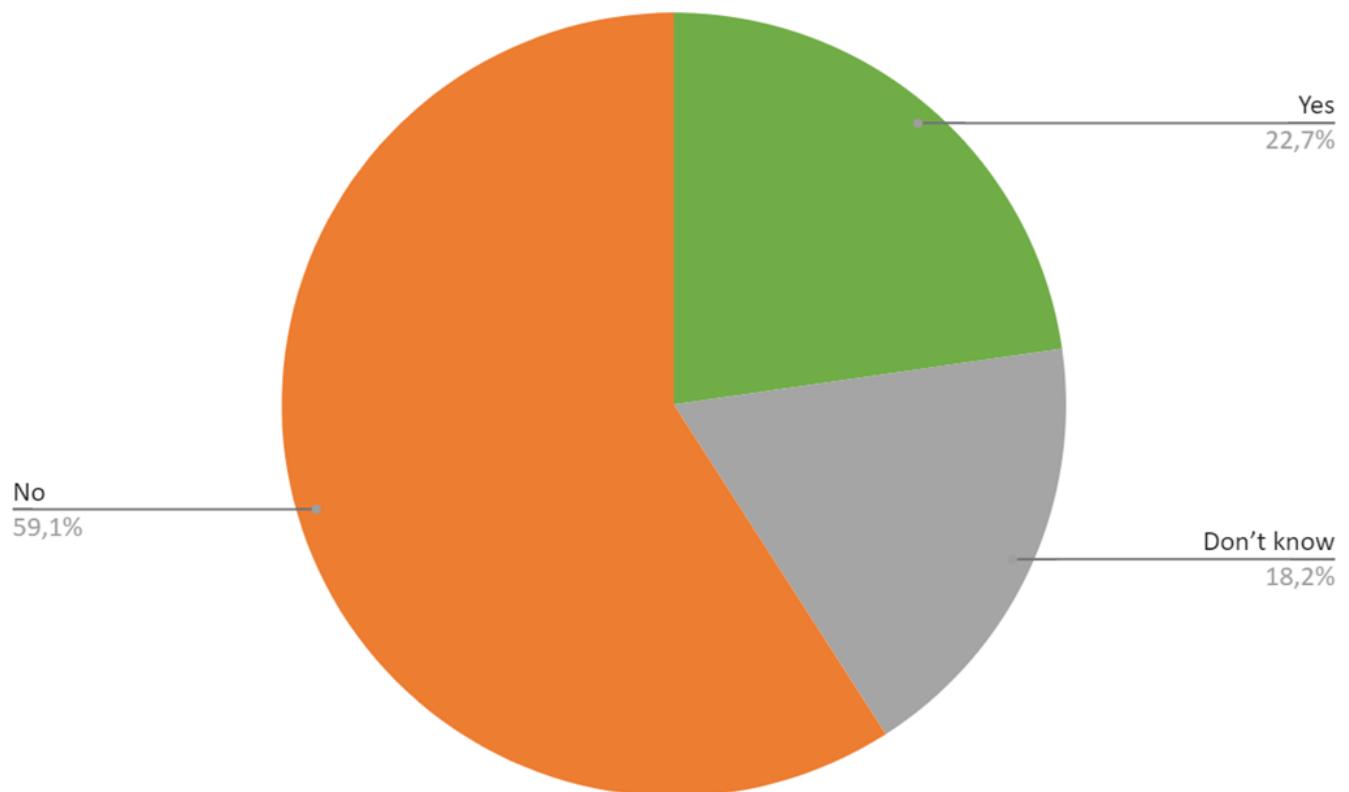
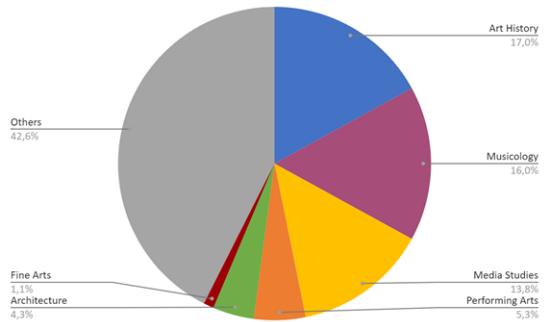


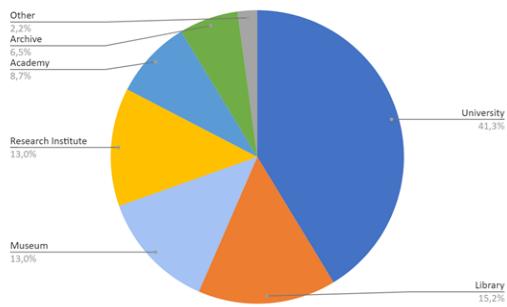
Figure 13: Do you know where you can publish an enhanced publication? (22 answers)

The survey also asked about publication possibilities of enhanced publications. Only 5 respondents stated that they know where to publish enhanced publications.

Which **community** do you belong to?



Which type of **institution** do you belong to?



Which role do you have at your **institution**?

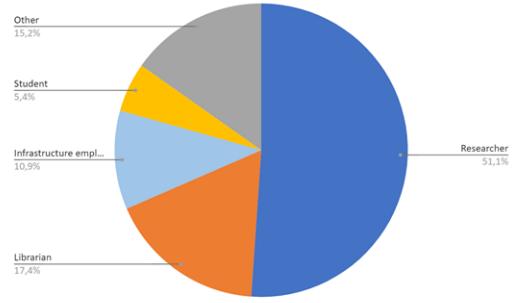


Figure 14: Personal details: Which community do you belong to? Which type of institution do you belong to? Which role do you have at your institution? (All 23 responses)

At the very end, personal information was also requested. Participants from all NFDI4Culture disciplines were represented. Predominantly from the field of art history, musicology and media studies. The majority of respondents work at a university and are active in research.

Conclusion and outlook

The team will take forward the results from the survey to produce a *working paper* for further consultation to help clarify the terminology around digital publishing and to provide practical recommendations for improvement, for instance, through the application of processes, adoption of conventions, or use of software platforms. The final goal of the working group is to provide a guideline for the cultural research community at large.

In the survey we saw that more than three-quarters of all submitters do not know where to publish enhanced publications in the NFDI4Culture communities. The NFDI4Culture organisation has already started to respond to such requests by providing an overview of research data repositories and services for the Culture disciplines which indicates the supported media types for each publication and archiving service.

Enhanced publications as a term was the starting point for the group to describe the digital features of a publication. But the complexity and fluidity of the terminology and characteristics of cultural publishing as reflected in the survey responses to the term *enhanced publishing* has left us searching for a different naming and set of terminology that can capture *multimodal-multimedia-multilocal* publications that are now supported by a wider set of services on offer by open science. In the end, it is the current mismatch of publishing practice and available infrastructures, new features, and methods – that makes it challenging, not only to fix a name, but also to encapsulate the practical steps to improve publishing practice – thus, closing the gap between practice and what is offered by the open research community.

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Survey Data

Survey source data (anonymised) as an XLSX spreadsheet stored on GitHub.

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Authors in alphabetical order:

Arnold, Matthias. ORCID iD: [0000-0003-0876-6177](https://orcid.org/0000-0003-0876-6177) ; Ruprecht-Karls-Universität Heidelberg, Universitätsbibliothek, ROR ID: <https://ror.org/038t36y30>

Büttner, Alexandra. ORCID iD: [0000-0002-4950-0941](https://orcid.org/0000-0002-4950-0941) ; Ruprecht-Karls-Universität Heidelberg, Universitätsbibliothek, ROR ID: <https://ror.org/038t36y30>

Heseler, Jörg. ORCID iD: [0000-0002-1497-627X](https://orcid.org/0000-0002-1497-627X) ; Saxon State and University Library Dresden (SLUB Dresden), ROR ID: <https://ror.org/03wf51b65>

Worthington, Simon. ORCID iD: [0000-0002-8579-9717](https://orcid.org/0000-0002-8579-9717) ; German National Library of Science and Technology (TIB), ROR ID: <https://ror.org/04aj4c181>

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German version: <https://tibhannover.github.io/digitale-publikationen-im-kulturbereich-umfrageergebnisse/>

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NFDI: <https://www.nfdi.de/>

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Software and technical information

ADA Semantic Publishing Pipeline: <https://github.com/NFDI4Culture/ADA-semantic-publishing>

Multi-format CSS theming - Interpunct.dev

Fonts

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Inter. These fonts are licensed under the Open Font License. The Inter project is led by Rasmus Andersson, a Swedish maker-of-software living in San Francisco. <https://github.com/rsms/inter/>

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