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How Researchers use the Academic Publication System for Research Communication – Results from the Research Project “Open Access in Vocational Education and Training Research”

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Abstract

Context: The research project “Open Access in Vocational Education and Training Research” investigates the significance of the Open Access (OA) publication model from the perspective of authors in vocational education and training (VET) research.

Methods: The research project combines group discussions and an online survey to explore conditions for the use, acceptance and dissemination of OA among VET authors.

Findings: First results from the project indicate that respondents prefer to disseminate their publications digitally and free of charge. Respondents also attach particular importance to digital and permanent access to literature, both with regard to the dissemination of their research and the use of publications for their academic work. Major selection criteria identified by respondents when using literature as readers are reputation, academic rigour and direct availability of publications. Only a third state that they search specifically for OA publications. Just over half of the respondents also do not notice whether the literature they access online is available OA. The majority of respondents find that they do not receive less recognition for their digital publications than they do for their printed works. Moreover, less than half agree with the statement that printed works symbolise a higher value than digital publications.

Conclusions: The article shows that the visibility of OA in the community of VET researchers can still be increased. The results of the research project provide several possible approaches to address this task.



Keywords

open Access, vocational education and training research, VET, academic publication system

1 The “Open Access in Vocational Education and Training Research” Project

The research project “Open Access in Vocational Education and Training Research” explores the following research question: Which technical and structural, policy-related and normative conditions, as well as conditions inherent in the academic research system influence the acceptance, dissemination and use of Open Access (OA)?

Acceptance means that authors understand, approve of and support the OA publication model by publishing OA. *Dissemination* refers to the various models used for OA publications (e.g., green OA, gold OA). *Use* means that authors use OA publications for their own academic research (even if they view the OA model critically). *Technical and structural conditions* include factors such as storage, archiving, distribution and findability of OA publications, e.g. through online repositories. *Policy-related and normative conditions* concern legal foundations of OA and licences, such as Creative Commons licences. *Conditions inherent in the academic research system* describe quality assurance processes, e.g. academic peer review and the academic reputation system.

OA is not a uniform concept. Within the scope of this research project, however, OA relates to three essential aspects. Access to academic literature should be free of charge, licensing should offer the maximum degree of openness and OA publications should be as easy to find as possible. The project draws on an analysis of existing research related to OA. In addition, it is based on a sociology of knowledge and media theory approach to identify, describe and reflect upon developments in the field of research communication and OA. These developments include knowledge as a production factor, knowledge as a commodity and a change in formal academic communication over time. The project team particularly considered thoughts of Luhmann regarding the academic publication and reputation system because obtaining a reputation is of particular importance to both publishing houses and academic researchers (for detailed information on the background to this, cf. Getz et al., 2020, pp. 10-14). Considering this theoretical framework, the research project explores attitudes, experiences and inhibitions regarding OA from the point of view of VET researchers in their role as authors.

2 The Empirical Database

The research project used a mixed-methods-design combining qualitative and quantitative research methods. As a first step, the project team explored the relevant technical and structural, policy-related and normative conditions, as well as conditions inherent in the academic research system influencing the acceptance, dissemination and use of OA in VET research through four structured group discussions. Built upon the analysis of the group discussions, the project team designed an online survey and sent it to approximately 5'000 academics from VET research who were also authors. From this, a broad empirical basis for further analysis was established.

2.1 Group Discussions

The project team conducted four group discussions at VET research institutes at universities in Germany during the second quarter of 2019. Since attitudes on OA, views, experiences and OA work practices may be influenced by academic experience, group discussions comprised VET researchers of differing academic statuses. Overall, 26 researchers took part in the group discussions, which were conducted as focus groups by the project team. Discussions were

structured through a set of open questions. This enabled participants to bring their perspective to bear whilst ensuring that important theoretical aspects were covered.

Evaluation of the Group Discussions

Group discussions were analysed using qualitative content analysis in accordance with Mayring (2015). The following section summarizes the main thematic areas the project team identified to be particularly relevant.

a) Outreach of publications and addressing target groups

This thematic area mainly deals with remarks made by group discussion participants regarding their own publications and the issue of preparing information and research results appropriately for the intended audience.

b) Peer review and transparent quality assurance procedures

In the group discussions, participants emphasise the utility of transparent quality assurance procedures and structures in ensuring equal opportunities between authors. Nevertheless, even though peer review is often not entirely transparent, participants view it as a crucial component of academic quality assurance.

c) Reputation and ranking of publication media, persons and OA

With regard to their own publication choices, participants prefer journals and publishing houses that are recognised in the academic community, even if these publishing houses do not offer the OA format. Participants mention that collaboration with renowned authors and publishers is more reputable and therefore, desirable. In order for authors to foster their own academic career and gain a reputation, they place their publications strategically in relevant closed access journals rather than in possibly less reputable OA journals.

d) Literature research strategies and invisibility of OA

When it comes to literature research and retrieval, the group discussions show that OA is not a selection or search criterion for the participants. Instead, they view access possibilities and relevant research topics as being much more crucial in this process. Participants use various databases to search for the desired literature. Moreover, they often benefit from the convenient retrieval of literature through institutional affiliations. Here, OA is often invisible to participants because they are using the licences of their employers to access articles that are normally retained by a pay wall. Participants state that an increasing information overload is one of the drawbacks of the digital availability of literature. Literature research is becoming more complex and particular strategies are required to search for literature and remain up to date.

e) Work practices and changes to academic research communication

One recurring topic in the group discussions is the change in academic work practices brought about by the digital format of (OA) literature. Participants explain that, often digital texts are immediately available, which is helping VET researchers save time. In addition, digital texts are available from any location, which also facilitates remote work. Participants state that they can easily share and edit digital texts and view this as a strong advantage of the digital format of literature. However, despite the benefits of the digital format, participants express an appreciation for books, for reading texts on paper and for the look and feel of working with print outs.

f) Financing of OA

As far as the financing of publications is concerned, the covering of article processing charges (APCs) by employers or third parties is important to participants when publishing in OA. Participants also state that the financing of OA should be integrated into research project plans from the start.

g) Licensing models and legal conditions

Participants frequently mention that they are not fully familiar with the different licensing models from which authors can choose in the publication process or which are offered by

publishing houses. Participants wish to have better opportunities to obtain information on the various licences for authors. They also remark that it is important to protect the rights of authors and to counter the illegal dissemination of copyrighted texts.

In summary, the group discussions outline that OA has become an established topic in VET research, but they also show that an information deficit regarding individual aspects of OA (e.g., copyright, licensing and financing possibilities) exists within the VET research community.

2.2 Online Survey

Drawing on the thematic areas distilled from the analysis of the group discussions, the project team designed an online survey that it sent to approximately 5,000 authors of VET research papers in 2020. Of 1'644 (33%) respondents who participated in the survey, 1'108 completed the questionnaire fully. This represents a response rate of about 22%, which allows for representative conclusions.

Evaluation of the Online Survey

The following section presents selected results from the online survey. These include descriptive statistics, as well as results from an exploratory factor analysis. Our results outline VET authors' attitudes towards the dissemination and use of academic publications. Moreover, we display data relating to the information resources and databases used by authors within the context of their own academic work. Finally, we outline authors' attitudes towards print versus digital publications.

a) Authors on the dissemination of their publications

In the online survey, we asked how important certain aspects were to respondents regarding the dissemination of their own academic work. In the following, the number of respondents will be stated for each individual item. If items are presented together, we use the form of $n = xx$ to xx to display the overall number of respondents for these items. Overall $n = 1'145$ to $1'221$ answered the selected questions in this chapter.

47.4% of respondents consider it "quite important" for their publications to be read by as many interested parties as possible and 46.6% feel that this aspect is "very important", representing a total of 94%. Respondents also believe that it is important for their publications to be easily accessible online at any time. This is considered "quite important" or "very important" by 46.9% and 43.1% of respondents respectively, adding up to a total of 90%.

50.1% find it "quite important" that their publication becomes available in a digital format, whilst 28.9% find this "very important", representing a total of 79% of respondents. Finally, 43.5% of the respondents consider it "quite important" and 22% "very important", that their publication is reproduced both digitally and as a print publication, representing a total of 65.5%.

When asked: "*How important is it to you that your publication appears as a printed work?*", 13.3% of respondents are of the opinion that this is "not important at all" and 42.5% consider this "quite unimportant", adding up to 55.8% who do not deem it important for their publication to be published as a printed work.

49.4% of the respondents "tend to agree" and 33.8% "agree fully" with the statement: "*My publication should be available free of charge.*", representing a total of 83.2% who agree that their publication should be available to readers without a pay wall.

b) Authors on the use of publications

In our survey we also asked participants about the importance they attach to certain aspects regarding the use of publications for their own research and reading purposes ($n = 1'135$ to $1'151$). When they are working on a publication, 43.8% of respondents consider it "very important" and 46.1% believe it to be "quite important", for the publication they are reading and

using to be permanently available and easily retrievable. This amounts to a total of 89.9% of respondents.

19.6% of the respondents find that it is “not important at all” for literature which they are seeking to be available as a printed work and 43.3% are of the opinion that this is “quite unimportant”. These figures represent 62.9% in total. Accordingly, respondents seem to find it more important that literature they wish to use is accessible in a digital format. 50.2% of the respondents find this “quite important” and 33.6% consider this “very important”, representing 83.8% in total. In addition, an overwhelming majority of 91.4% prefers literature to be easily available and accessible online at any time with 43.7% of the respondents finding this “quite important” and 47.7% finding this “very important”.

Results of an Exploratory Factor Analysis on the Use of Publications

As part of our analysis, we also selected variables relating to the use of literature for an exploratory factor analysis. The exploratory factor analysis is a suitable multivariate method for uncovering unknown structures and relationships in our data. The analysis also contributes to a reduction of large data sets.

The overall question regarding selected variables for our factor analysis addressed literature selection criteria of VET authors. The question was “*If you are working on a publication yourself, how important is it to you that the publication you are reading and using for this purpose ...?*”, providing respondents with a set of possible publication selection criteria as available responses. Responses were presented in the form of a four-level Likert scale comprising specificities ranging from “not important at all” to “very important”. We expected to find relationships between these items and structures connecting them. Therefore, we used our analysis to uncover latent variables, relating to attitudes or properties that cannot be measured directly.

Preliminary theoretical assumptions and the results from the group discussions, prior to the online survey, make a convincing case for the factors we found as a result of the factor analysis. These are “reputation as a key selection criterion for publications”, “academic rigour as a key selection criterion for publications” and “direct availability as a key selection criterion for publications”. The three factors will be described in the following.

Factor 1 – reputation as a key selection criterion for publications: Variables relating to factor 1 are all referring to academic reputation. Respondents orient themselves towards reputable publishers, publishing houses and authors already known to them. Respondents also tend to use recognised periodicals, which, from their point of view, are reputable and well known.

Factor 2 – academic rigour as a key selection criterion for publications: The variables relating to factor 2 revolve around the ascribed academic rigour of the selected texts. Respondents may ascribe this rigour to a publication through quality assurance processes that have been successfully completed by its author or through their own critical reading. An (assumed) academic ethos also serves as a criterion. Compared to the other factors, openness to lesser known authors, publishers and publishing houses seems to be an aspect of this factor. Additionally, direct availability of literature is not a paramount criterion.

Factor 3 – direct availability as a key selection criterion for publications: The variables relating to factor 3 describe direct possibilities of accessing digital publications and preprints free of charge. Respondents prefer publications to be instantly available. Access needs to be possible at the very moment the research is taking place. The focus here is on digital publications above all others.

The results of our factor analysis confirm that respondents prefer direct and digital access to literature. The analysis also demonstrates that the reputation of publications and respective stakeholders, as well as the ascribed academic quality of publications are selection criteria for the use of academic publications.

Descriptive Evaluation

The online survey also covered questions about the use of information resources, closely linked with the main thematic area “literature research strategies and invisibility of Open Access”, from the group discussions. Particular focus was placed on the immediate access to literature with the question *“How often do you make use of the following provisions of databases in order to search for literature?”*

The project team assumed that library catalogues, unspecific search engines (such as Google and Bing) and academic search engines (e.g., BASE and Google Scholar) would be frequently used. These assumptions were indeed confirmed. 26.6% of respondents (n = 990 to 1’072) stated that they “always” use the (online) library catalogue of their own institute/university library, while 33.1% stated that they do this “often”. This amounts to a total of 59.7% of respondents. 24.8% “always” use unspecific search engines, whereas 42.6% use them “often” is. This adds up to a total of 67.4%. We covered two specific academic research search engines in the online survey: 18.4% of the respondents stated that they make use of Google Scholar “always” and 28.1% stated that they use Google Scholar “often”. This represented a total of 46.5%. The second specific academic research engine included in the survey was BASE – the Bielefeld Academic Search Engine, which respondents use significantly less than the other library catalogues and search engines mentioned above: 85.4% of the respondents state that they “never” use BASE.

Respondents’ infrequent use of library repositories as compared to library catalogues and search engines came as a surprise to the project team. Even though library repositories include more specialist literature and directly available full texts than library catalogues and search engines, respondents make only little use of these repositories. A lack of desired resources can only form part of the explanation for this. Since VET research is an interdisciplinary research area, the project team expected a much more frequent use of all academic repositories.

Equally surprising was the infrequent use of collaboration platforms in the social sciences, such as Academia and ResearchGate, and possibly the Zenodo platform, which may also be considered to be a collaboration platform. ResearchGate, for example, is “always” used by 6.4% and “often” used by 24.7% of respondents respectively, meaning that a total of 31.1% use it on a frequent basis. 51.1% stated that they “never” use licensed databases, which is also a much lower figure than the project team expected. Only 7.5% of the respondents stated that they “always” use licensed databases and 14.3% do so “often”. Given that these databases usually account for a high proportion of library budgets, it would be interesting to explore this further.

Besides questions about the use of specific information resources, we also asked respondents about their approach to literature research. To take attitudes towards OA into account in this context, respondents were asked whether they agreed with the following statements: *“When I am conducting literature research, I often do not notice whether the publication I have found is Open Access.”* (n = 954). 9.7% of respondents agree “fully” with this statement, while 47.6% “tend to agree”, adding up to a total of 57.3%. Over half of respondents are therefore frequently unaware of whether they are working with an OA publication or not. Interestingly, this invisibility of OA does not disappear when authors state that they have access to full texts through their university or institution. Irrespective of whether respondents answer “yes” or “no” when asked: *“Do you have access to licensed full texts (incurring a charge), e.g. through your university or library subscription service?”*, approval ratings change only slightly with respect to whether respondents notice whether a publication they have found is Open Access or not.

Only a total of 31.8% of the respondents “agree fully” or “tend to agree” with the statement: *“I actively search for Open Access publications.”* (n = 1’007). In contrast, 30.4% “do not agree at all” and 37.8% “tend to disagree”. This means that a total of 68.3% do not actively search for OA literature. Interestingly, irrespective of whether respondents answer “yes” or “no” when

asked: “Do you have access to licensed full texts (incurring a charge) e.g. through your university or library subscription service?” approval ratings also change only slightly with respect to whether respondents have access to licensed databases through their institutions. Consequently, access to licenced databases, or a lack thereof, does not automatically mean that respondents will be more or less likely to actively search for OA publications.

The group discussions conducted prior to the online survey revealed that participants made a distinction between digital and analogue or printed formats rather than between OA and “not available digitally”. Here too OA was “invisible”. Instead, participants discussed the benefits and drawbacks of digital and printed literature in relation to reading habits and to the reputation associated with each format. Because this made up a large part of the group discussions, these topics were included in the online survey.

A total of 63.6% of respondents either “fully agreed” or “tended to agree” with the statement: “I devote more concentration to reading printed works and hard copy publications than to reading digital publications on a screen”. In contrast, 57.7% of respondents “tended to disagree” or “did not agree at all” with the statement: “I am easily distracted by the computer when I read digital publications”. Between these two items, we found a positive correlation between those who state that they concentrate more when reading printed works and those who state that they are easily distracted when reading from a screen ($r = 0.371$, contingency table $n = 1'108$). Hence, there appears to be a relationship between a preference to read printed work and a difficulty to focus when reading from a screen.

A total of 58.4% of respondents do not agree with the statement: “Printed works symbolise a higher value than digital publications.” Here, 22% “do not agree at all” and 36.4% “tend to disagree”. Accordingly, 65.9% of respondents disagree with the item: “My digital publications give me a lesser degree of recognition than my printed works.” Here, 26.7% “do not agree at all” and 39.2% “tend to disagree”. Only 34.1% either “tended to agree” or “fully agreed” that their own digital publications lead to less recognition than their printed works.

3 Conclusion

First results of our study show that authors consider it crucial to provide their research to readers both digitally and free of charge – and that, as readers, they prefer literature to be directly available, from well-known sources and in line with principles of academic rigour. Furthermore, authors do not search specifically for OA publications, regardless of whether they have access to publications through their university or institution. While respondents display varying reading preferences regarding digital and print publications, the majority of respondents do not consider digital publications less reputable than print publications.

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