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Reputation, Quality, Exclusivity - Peer Review in Vocational Education and Training research

Results of a survey

Abstract

Peer review is a recognized, although not uncontroversial, procedure for quality assurance of publications in science. It is particularly important in the scientific publication process.

There are studies that deal with peer review itself, but there are no works that aim at peer review in Vocational Education and Training (VET) research. The article first presents the state of research and then presents the results of a survey on the subject of peer review, which was carried out in the area of German-language VET research. The aim of the survey is to obtain an initial assessment of the importance of peer review from scientists working in a discipline of VET research. Three perspectives are considered: readers of publications, authors of s publications and reviewers in peer reviews.

Introduction

The term peer review is generally defined as a process for the assessment of scientific manuscripts by scientists during the publication process. The peer review process is a quality assurance process that is recognized in science, although not without controversy. (The term “peer review process” is also used for the assessment of third-party funding applications; however, this is not what is meant in this publication.) It can already be noted at this point that there is no uniform peer review process. The standards of the procedure differ depending on the journal, publisher and reviewing scientists.

The idea of peer review existed before the emergence of scientific journals. She was captured by Ishāq bin Ali al-Rohawi, a physician from Syria who lived from 854 to 931 AD. He described that doctors

should document the health status of their patients. The notes were then checked by other doctors (Spier 2002). The development of the peer review process as we know it today was closely linked to the emergence of scientific journals, which in turn had its origins in the emergence of the scientific research and communication system. The scientists wanted to quickly exchange new findings, which was hardly possible with books that were complex and lengthy to write. The “Journal des Sçavans” and the “Philosophical Transactions” were the first scientific journals to appear in 1665. The peer review process was already used here as a quality assurance process: Not everyone could publish in “Philosophical Transactions”, but an assessment was first carried out by the editors (for the development of the peer review process, see in detail: Rödel 2020, p. 6ff.).

However, at that time the peer review process was not only a quality assurance procedure, but also a means of censorship to discipline unpopular authors. At that time, publications were not allowed to pose a threat to the king, the church or moral values. Only over time did the peer review process become a quality assurance process that focused on compliance with certain standards in the interests of science (Fyfe et al. 2022). However, the aspect of discipline still plays a role today, as the peer review process, for example, leads to papers being published that follow the “mainstream” of research.

In the 19th century, the peer review process finally became a symbol of science that was independent of monarchical and ecclesiastical power and controlled itself.

However, there has been scientific research since the 1970s that has dealt with the peer review process and has sometimes come to a very critical assessment. This research relates to very different scientific disciplines, but mainly to medicine and psychology.

The peer review process is also a recognized quality assurance procedure in many journals in VET. The topic of peer review was also examined as part of the Federal Institute for Vocational Education and Training (BIBB) research project “Open Access in Vocational Training Research”. The target group of the research project were authors from vocational training research (see below).

The study presented here was carried out in 2023 by the management of the "Publications and Scientific Information Services" department at BIBB. It specifically addressed scientists from VET research from three perspectives: as readers of scientific publications, as authors of specialist publications and as reviewers in the peer review process. The aim was to obtain an initial assessment of the importance of peer review from scientists working in VET research. The publication first summarizes research results on the peer review process and then goes into more detail about the process in VET research. Finally, the results of the study are presented.

The peer review process as a research subject

Table 1 describes the variants of the peer review process. In addition, possible advantages and disadvantages of the respective procedure are mentioned. It becomes clear that, depending on the perspective, the advantages of a procedure can also be interpreted as disadvantages and vice versa.

Table 1: Variants of the peer review process

peer review process	**Description**	**Possible benefits**	**Possible disadvantages**
Single blind	The submitters do not know who the reviewers are.	Reviewers can better assess and evaluate the publication if they know the submitters and therefore the context of the research work.	Reviewers may be biased if they know the submitters or the institution they work for.
Double blind	The reviewers do not know who the submitters are.	The reputation of the submitter or their institution does not play a role in the review.	Due to the content of the article, the submitters are often

	The submitters do not know who the reviewers are.	Submitters cannot contact the reviewers in order to influence them.	known to the reviewers. Studies (see below) have shown that double-blind procedures do not produce better reports compared to single-blind procedures.
Triple blind	The reviewers do not know who the submitters are. The submitters do not know who the reviewers are. The editors of the journal do not know who the submitters are.	It is believed that the anonymity of everyone involved in the peer review process has the advantage of improving the chances of submitters with less reputation having an article published.	Due to the content of the article, the submitters are often known to the reviewers. Studies (see below) have shown that triple-blind procedures do not produce better reports compared to single-blind procedures. Editors cannot play an intermediary role.

Open peer review	Collective term for procedures that open up the peer review process. The reports are made available to the public.	The entire peer review process becomes more transparent through the publication of the reports.	Knowing that they will be published, reports may be worded more cautiously. Potential experts reject the procedure.

In 1982, as part of a study, Peters and Ceci resubmitted twelve previously published articles in the field of psychology to the journals that had already published these articles. They only changed the names of the authors and the name of the submitting institution. The result of this resubmission impressively demonstrated the weaknesses of the peer review process, as only three of the articles were recognized as already published and eight articles were rejected, often on the grounds of significant methodological deficiencies. Only one article was accepted for publication again (Peters and Ceci 1982).

Peters and Ceci's study is also interesting because their own publication was initially rejected by a well-known journal before another well-known journal published it. This practiced the open peer review process (see Table 1), so scientists were able to comment on the article. Among the approximately 60 comments on the study there were both many positive and very negative voices (Hirschauer 2004).

In 2013, around 30 years later, Bohannon published his article “Who’s afraid of peer review?” in the journal “Science”. For this article, he had submitted 304 obviously flawed articles to open access journals that supposedly used the peer review process as a quality assurance standard. 60 percent of these journals accepted publication of the articles despite the obvious deficiencies. Bohannon particularly triggered a debate about the quality of open access journals (Rödel 2018).

These two very well-known and frequently cited studies impressively show that the peer review process and the promise to use it must be viewed critically, as it is either not used despite the assurances of journals or can lead to seemingly arbitrary results.

Much research on the peer review process has revealed numerous other problems:

The chance of publishing an article is reduced if

- these are only replication studies,
- the empirical results are not significant or
- the article contradict the dominant paradigmatic orientation;
- it follows rather unconventional approaches,
- the article was written by female authors or
- it is submitted by unknown authors from little-known institutions (for a summary see Hirschauer 2004; Aimeé et al. 2022).

The peer review process is also considered slow, expensive, subjective and prone to bias, and almost useless in detecting fraud. In addition, reviewers often do not evaluate the quality of an article, but instead rely on easily identifiable indicators such as the size of the sample, the complexity of the calculations or the clarity of the presentation of the results. The reliability of scientific results often only plays a subordinate role in the assessment. In particular, the lack of clear standards for the assessment by the reviewers and the lack of standards for the peer review process are criticized (Tennant and Ross-Hellauer 2020). In the discussion about the reliability of the peer review process, however, the opposite argument was also made: Consistency of the reviews is not at all desirable; rather, contradictory assessments are helpful in making a variety of perspectives on a research topic visible (Koch and Geiiss 2019). The experts are also often perceived as not having enough experience. In general, reviewers tend to evaluate papers more positively that support their own views. Publications that were less consistent with their own views were rated more negatively.

It is also not undisputed whether different peer review procedures lead to significantly different results. Particularly in smaller scientific disciplines, the advantages of the double-blind procedure can be lost because the reviewers can draw conclusions about the authors or the submitting institution (Chung et al. 2015) and the anonymity of the authors alone is not enough to determine a to ensure fair assessment (Panadero and Alqassab 2019).

In addition, the language of the submitted article can already have an influence on the review. Many renowned journals are published in English. Native English speakers can therefore have an advantage in the submission process (Strauss 2019).

Reviews are sometimes perceived as unprofessional and impolite because the reviewers are not very appreciative and do not formulate them constructively (Mavrogenis et al. 2020). There is also criticism of the peer review process because publishers do not pay reviewers (Hirschi 2018).

Studies that ask researchers directly about the peer review process are not particularly common. Studies initiated by large academic publishers paint a rather positive picture of researchers' use of the peer review process. The figures from Ross-Hellauer et al., which were collected in 2016 using an online questionnaire, are somewhat less optimistic. Scientists were made aware of the questionnaire using social media channels, newsletters and mailing lists (Rödel 2020, p. 20ff.)

The peer review process and artificial intelligence

The discussion about the use of artificial intelligence (in this article we speak of artificial intelligence in general, knowing that a distinction could be made between large language models or natural language processing, which is irrelevant for the context here) in science, e.g to support the creation of hypotheses or the planning of experiments (DFG 2023), also refers to the peer review process, but is still in its early stages. In principle, AI-supported processes are said to have the potential to fundamentally change the peer review process. However, there is skepticism regarding the lack of transparency in how AI systems work, e.g. with regard to the reproducibility of reports, but also more generally with regard to data protection (Hosseini and Horbach 2023). Some authors also point out

that AI must be trained with data. This does not seem to have been done sufficiently for a peer review process, as reports from peer review processes are only accessible to a limited extent. In the future, the accessibility of reports will probably change to very different extents depending on the scientific discipline, and accordingly the use of AI in peer review processes will vary in intensity. In addition to direct use in the peer review process, it is also possible to use AI in basic quality control of manuscripts, e.g. when checking statistical calculations or detecting plagiarism, and is already used today (Kousha and Thelwall 2024).

Brod and Widyadari (2023) point out that AI's ability to mix different sources of information can lead to inaccuracies and errors. There is also a risk that AI will be used by some experts to meet the high demand for reports. This could increase the number of unhelpful reports. However, the use of AI could also have the advantage of counteracting the risk of subjective assessment. AI could also supplement reports with missing aspects. Currently, AI is seen more as a supporting tool in the peer review process, although its use should be regulated transparently. Schulz et al. (2022, p. 1) summarize: “Automated screening tools cannot replace peer review, but may aid authors, reviewers, and editors in improving scientific papers”. One can look forward to future developments, especially if AI is increasingly used as a (co-)author of scientific articles (Osmanovic-Thunström and Steingrimsson 2023).

Results from the BIBB research project “Open Access in Vocational Training Research”

As part of a research project, the BIBB dealt with the topic of open access (see Getz et al. 2020; 2022). In the group discussions carried out and an online survey of authors from the field of VET research, it became clear that peer review is particularly important as a quality assurance procedure with regard to the acceptance of open access. The participants in the group discussions expressed that it is very important to use reliable quality assurance procedures in the publication process. It was explained how important a stringent quality assurance process via a review is when publishing: “[…] that there is a quality process behind it, […] and appropriate reports are given” (Getz et al. 2020, p. 34). With regard to Open Access, proven quality assurance procedures should also be applied: “Well, I can see a lot of

advantages in Open Access if you implement it […] in a usable way […]. It must not now lead to […] the peer review process being weakened" (Getz et al. 2020, p. 34). It showed, among other things, based on this statement, there was some fear among authors that traditional quality assurance procedures would not be used in the open access publishing process.

Feedback that authors received through the reviews was perceived and valued as valuable feedback in order to be able to critically examine their own scientific work and classify it qualitatively. One person remarked: "I would still like to have that because it will ensure […] the scientific quality, the evidence that I want to draw from this research, or rather […] ensure it in the first place" (Getz et al. 2020, p. 34). Another person also expressed a similar opinion with regard to the added value of the peer review process for one's own scientific development and the quality of one's own contribution: "[…] that I found feedback from the reviews extremely helpful, […] from different perspectives […] [this has] greatly improved the quality" (Getz et al. 2020, p. 34). Finally, with regard to the added value that the peer review process brings, it is explained that you can learn something from reviews for your own work: "[…] that we also […] look at the fact that the ["Trade journals] are peer-reviewed and double-blind, so that there is a certain quality assurance and we also […] learn from the reports […]" (Getz et al. 2020, p. 34). With regard to the payment of reviewers, it became clear in the discussions that the publishers' approach of generally not paying for the peer review process was viewed critically by the participants. One person noted that this is seen as part of a scientific job: "I know that a reviewer doesn't get paid for a job, […] it's just accepted that that's part of your job if you're a scientist "If you have published somewhere, that you are asked, that you also have to review something" (Getz et al. 2020, p. 35). It was further explained that the free review of scientific articles is part of the professional ethic for many scientists: "It can certainly work that there are people with ideals who say, okay, I'll do it because it "It's part of my professional ethic to review something like that" (Getz et al. 2020, p. 35).

As part of the research project, it was also shown that, following Luhmann, science can be viewed as a social system (Luhmann 1972) in which reputation, exclusivity and quality assurance of publications are of particular importance for the authors. Peer review plays an important role here, as it can create

exclusivity as a process with the help of which publications have a reputation-building effect. The results of the online survey on the authors' publishing achievements and strategies prove that gaining reputation is a driving motive for publishing activity.

To what extent discursive processes are of particular interest to the VET research authors surveyed - this would be, for example, possible in an open peer review process - was addressed using several questions in the online survey. A distinction was made between discourses of different intensity and publicity in our own and third-party scientific publications. Weiland (2022) explains that non-public feedback on one's own manuscripts that occurs before publication could be counted as simple forms of discourse. This form of feedback from specialist colleagues on one's own manuscript, beyond a possible peer review process, was rather important or very important for 82.5 percent of those surveyed. Only around a sixth of those surveyed did not value this form of discourse.

Detailed reviews of one's own manuscripts in the context of peer review procedures would be viewed similarly positively, says Weiland. 78 percent of those surveyed said these were important. 71 percent of the authors would welcome opportunities to exchange ideas with the reviewers. 26 percent don't think this is important, and only 2.7 percent of those surveyed are not at all interested in the possibilities for exchange (Weiland 2022, p. 81)

Finally, there is a high level of interest in publicly held discourses: a scientific discussion by colleagues with a self-authored publication is rather important or very important to just over two thirds of the authors surveyed. According to Weiland in her analysis of the online survey, less than a third say this form of discourse is not important or not important at all (Weiland 2022, p. 80).

The high interest in discursive processes is not only reflected in one's own manuscripts and publications, but also includes publications by third parties. For 75 percent of those surveyed, it is important that a third-party publication that they read and use for their own publication can be assigned to a scientific debate or discourse. Encouraging the specialist community to engage in

scientific debate in such a third-party publication is still somewhat important or very important for 64 percent of authors. A detailed presentation of the results can be found in Weiland 2022.

The peer review process in VET research

Journals in VET Research

The topic of peer review is also central to the subject area of VET research. Important journals in VET research use the peer review process and all use the double-blind process (see Table 2).

Table 2: Journals in VET research

Name of the journal	**Internetlink**	**peer review process used**
Berufs- und Wirtschaftspädagogik – online (bwp@)	https://www.bwpat.de	double blind
Empirical Research in Vocational Education and Training	https://ervet-journal.springeropen.com	double blind
International Journal for Research in Vocational Education and Training (IJRVET)	http://www.ijrvet.net	double blind
International Journal of Training and Development (IJTD)	https://onlinelibrary.wiley.com/journal/14682419	double blind
Journal of Technical Education (JOTED)	http://www.journal-of-technical-education.de	double blind
Journal of Vocational Education & Training (JVET)	https://www.tandfonline.com/toc/rjve20/current	double blind

Pädagogik der Gesundheitsberufe: die Zeitschrift für den interprofessionellen Dialog	https://www.zeitschrift-gesundheit.info/	double blind
Sprache im Beruf: Kommunikation in der Aus- und Weiterbildung – Forschung und Praxis (SpriB)	Sprache im Beruf | Franz Steiner Verlag (steiner-verlag.de)	double blind
Vocations and Learning: Studies in Vocational and Professional Education	https://www.springer.com/journal/12186	double blind
Weiterbildung: Zeitschrift für Grundlagen, Praxis und Trends	https://weiterbildung-zeitschrift.de	double blind
Zeitschrift für Berufs- und Wirtschaftspädagogik (ZBW)	https://biblioscout.net/journal/zbw	double blind
Zeitschrift für Weiterbildungsforschung	https://www.springer.com/journal/40955	double blind

Table 3: Journals from the reference disciplines of VET research

Name of the journal	**Internetlink**	**Peer review process used**
Arbeit: Zeitschrift für Arbeitsforschung, Arbeitsgestaltung und Arbeitspolitik	https://www.degruyter.com/view/j/arbeit	double blind
Bildung und Erziehung	https://www.vandenhoeck-ruprecht-verlage.com/bildung-und-erziehung	double blind
Formation Emploi : Revue Française de Sciences Sociales	https://journals.openedition.org/formationemploi	double blind

Hessische Blätter für Volksbildung: Zeitschrift für Erwachsenenbildung in Deutschland	https://www.hessische-blaetter.de/	double blind
Journal for Labour Market Research	https://labourmarketresearch.springeropen.com/	single Blind
Journal of Education and Work	http://www.tandfonline.com/loi/cjew20	double Blind
Kölner Zeitschrift für Soziologie und Sozialpsychologie (KZfSS)	http://kzfss.uni-koeln.de/ ISSN 0023-2653	double Blind
Pflegewissenschaft	https://www.zeitschrift-pflegewissenschaft.de	double Blind
Recht der Jugend und des Bildungswesens (RdJB): Zeitschrift für Schule, Berufsbildung und Jugenderziehung	www.rdjb.nomos.de	double Blind
Research in Comparative and International Education	http://journals.sagepub.com/home/rci	double Blind
Sozialer Fortschritt: unabhängige Zeitschrift für Sozialpolitik	https://www.sozialerfortschritt.de/zeitschrift	double Blind
Unterrichtswissenschaft: Zeitschrift für Lernforschung	https://www.springer.com/journal/42010	double blind
Zeitschrift für Erziehungswissenschaft (ZfE)	https://www.springer.com/journal/11618	double blind
Zeitschrift für Soziologie (ZfS)	https://www.degruyter.com/view/j/zfsoz	double blind
Zeitschrift für Pädagogik (ZfPäd)	https://www.beltz.de/fachmedien/erziehungswissenschaft/	double blind

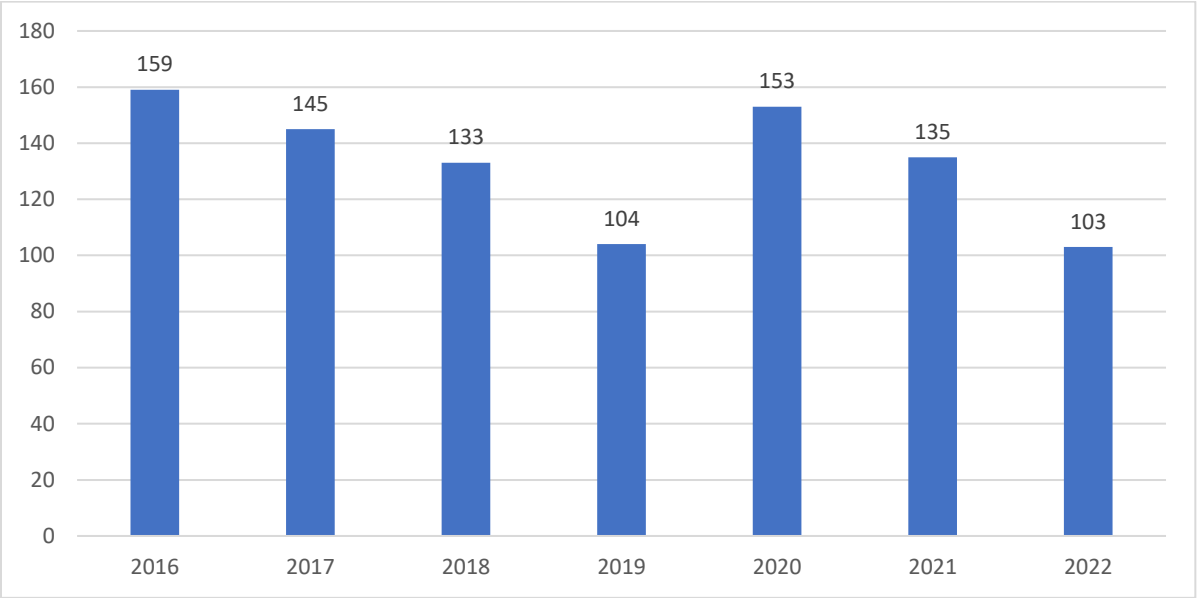
	zeitschriften/ zeitschrift_fuer_paedagogik.html	
Zeitschrift für Soziologie der Erziehung und Sozialisation (ZSE)	http://www.beltz.de/fachmedien/erziehungs_und_sozialwissenschaften/zeitschriften/zeitschrift_fuer_soziologie_der_erziehung_und_sozialisation.html	double blind
Schweizerische Zeitschrift für Soziologie	https://szs.sgs-sss.ch/	double blind

The lists are based on a compilation by the "Publications and Scientific Information Services" department, "Library and Documentation" team, at BIBB. A detailed description of the Journals with further information can be found in Linten et al. 2023.

Peer reviewed articles in VET research

In order to determine the number of peer-reviewed articles, the inventory of articles in the BIBB's VET Repository (www.vet-repository.info) was evaluated based on the journals listed in Tables 2 and 3 as well as the anthology contributions recorded in the VET Repository. The numbers can be viewed as a trend, as changes have occurred over the years due to technical changes and changes in the evaluation scope. Due to capacity reasons, not all articles may have been included; in particular, only those articles from the reference journals that correspond to the evaluation scope were included. The numbers refer to the period 2016 to 2022 (see Fig. 1).

Figure 1: Peer reviewed journal and anthology contributions recorded annually in the BIBB's VET Repository



In principle, due to the heterogeneity of the subject area of VET research, it is not possible to compare the figures with other academic disciplines. However, the number of peer-reviewed journal articles and the number of peer-reviewed anthology contributions suggest that the topic of peer review procedures is important in VET research.

Methods

The survey on the subject of peer review designed by BIBB was carried out between September 12, 2023 and October 16, 2023 using the Lime Survey software. It emerged in the context of discussions surrounding the scientific publishing process, for example regarding open access, open science, the measurement of publication output and the reception of scientific publications. The survey was announced via

- the BIBB's X (formerly Twitter) channels @VET_Repository and @BIBB_de,
- via intranet message,
- by email to BIBB managers, asking them to distribute the survey in their networks,
- in the network of the vocational training research network working group and

- in the BIBB newsletter

Due to these ways of distribution, the exact degree of spread is not known, nor is the population known. The results are therefore not representative.

The survey began with the question of whether the participants assigned themselves to the subject area of VET research. If this initial question was answered with “no,” the survey ended at this point.

A question was then asked about the level of awareness of the peer review process and an assessment of the peer review process from the perspective of the reader. In the second part of the survey, it was first determined whether the participants were already working as authors or whether they were planning to publish in the near future. If this initial question was answered with “no,” the survey skipped to the third part. If the question was answered with “yes”, the participants were asked to provide assessments of the peer review process from the perspective of the authors.

In the third part, participants were first asked about their experience as an reviewer in a peer review process. If the answer to this question was “no,” the survey skipped to the sociographic part. If the question was answered with “yes”, the participants were asked to make assessments of the peer review process from the perspective of reviewers.

Finally, socio-demographic data was queried and there was the opportunity to add comments via free text input.

128 people accessed the survey. Of these, 81 people answered the initial question as to whether they or their field of work belonged to the subject area of VET research with “yes” and were therefore able to continue taking part in the survey.

Sociographic data

42 participants were female, 32 were male and seven people did not answer the question about their gender. Around a third of the participants (26 people) have a doctorate, another third have a master's/magister degree. A good third (29 people) of those surveyed were between 30 and 39 years

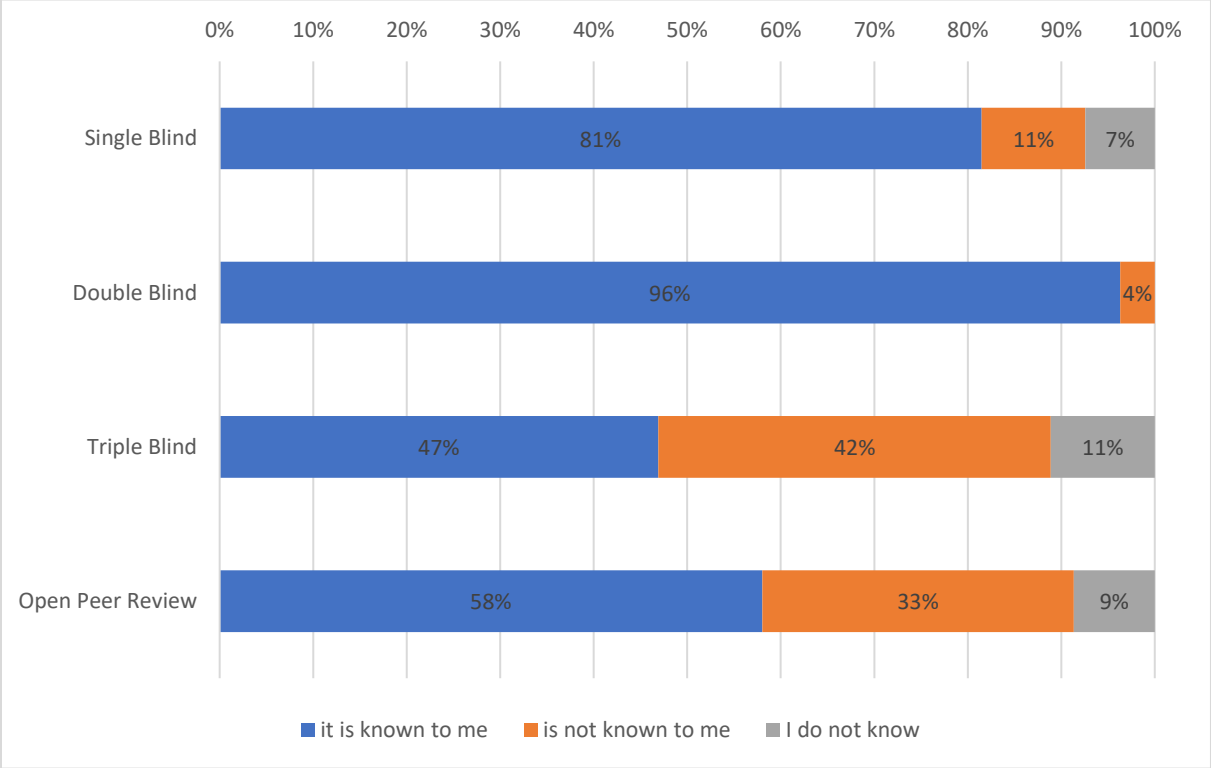
old, a quarter (20 people) were ten years older. Only three people were younger than 30 years. It is not possible to assign the other answers to the questions according to gender, age or qualifications.

Results and Discussion

Awareness of the peer review process

At the beginning of the survey, all participants were asked which peer review procedures they were aware of. As was to be expected, almost all participants (78 people) are familiar with the double blind peer review process, which is also common in vocational training research. The least known is triple blind (38 people).

Figure 2: Awareness of peer review processes – n=81



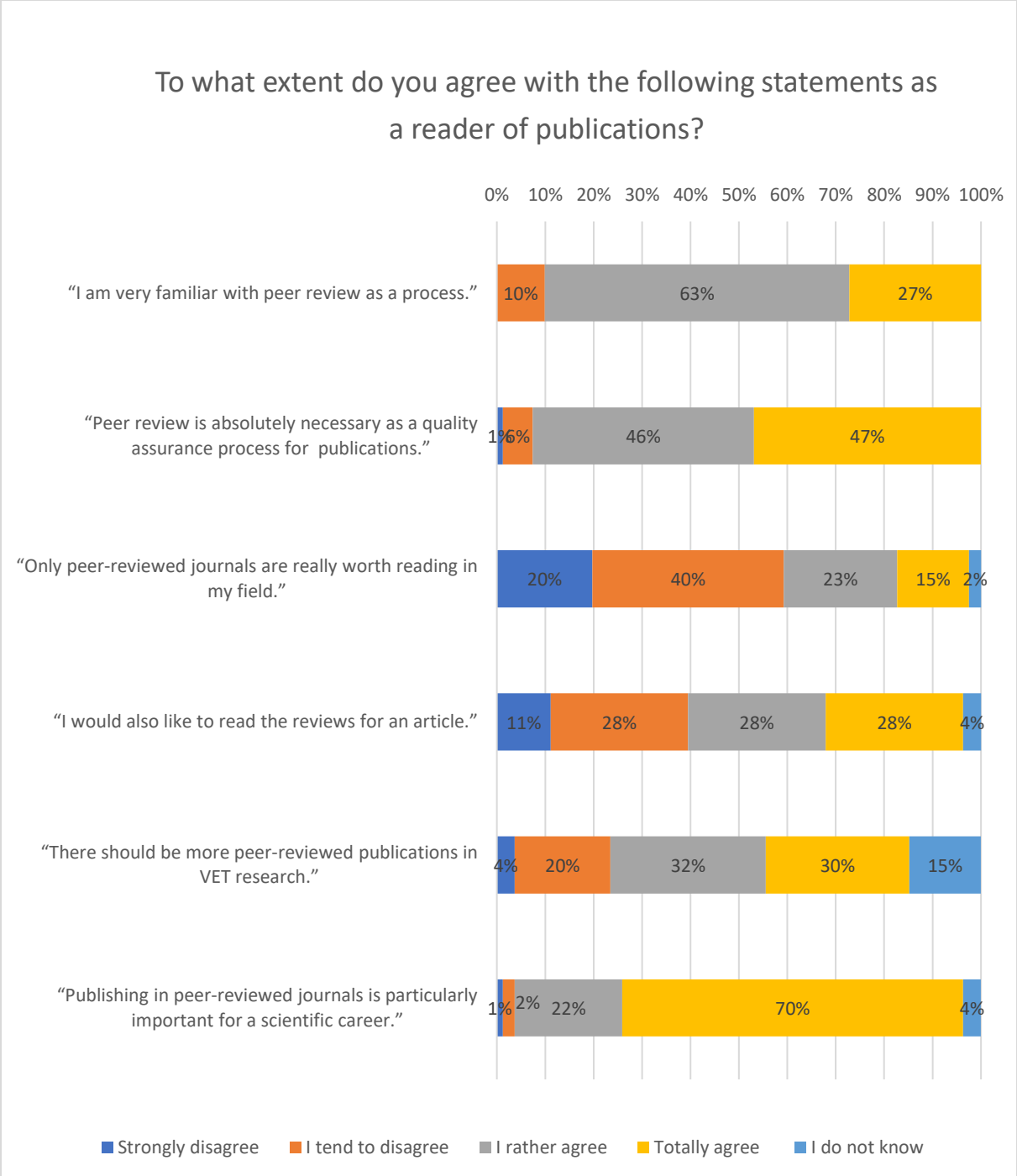
Survey results from the perspective of readers

In the first part of the survey, participants were asked to provide assessments from the perspective of the reader. All questions had to be answered.

In keeping with the initial question about the awareness of the peer review processes, only eight people stated that they were not very familiar with the peer review processes. The vast majority seem to consider the peer review process to be very useful and completely or at least somewhat agree with the statement “Peer review is absolutely necessary as a quality assurance process for specialist publications” (75 people). However, non-peer-reviewed journals also seem to be considered worth reading. More than half (48 people) reject the statement “Only peer-reviewed journals are really worth reading in my field” and do not agree or rather disagree with this statement. A little more than half of those surveyed are also interested in the reviews of the articles, and a little more than half would like to see more peer-reviewed articles published in VET research.

There is great agreement regarding the importance of peer-reviewed articles for a scientific career. 75 people somewhat or completely agreed with the statement “Publishing in peer-reviewed journals is particularly important for a scientific career.” This corresponds to the results from the Open Access research project (Getz et al. 2020; 2022) and shows the great importance of the peer review process in VET research.

Figure 3: Assessment of the importance of peer-reviewed articles – n=81



Survey results from the perspective of authors

Of the 81 participants, 78 people answered "yes" to the question "I have already published something as part of my scientific work or will publish something in the foreseeable future (this means all types of publications that could be described as scientific publications)". Three people answered "no." For

this part, n = 78. These 78 people were then asked how much they had published in which publication form: Most people, namely 39, had five or more publications in an “other non-refereed publication form”, followed by 36 people, who had five or more publications in a non-refereed journal. Most people (30 and 24, respectively) published two to four articles in a refereed journal or a refereed anthology.

Table 4: Number of articles published by participants in various publication forms – n = 78

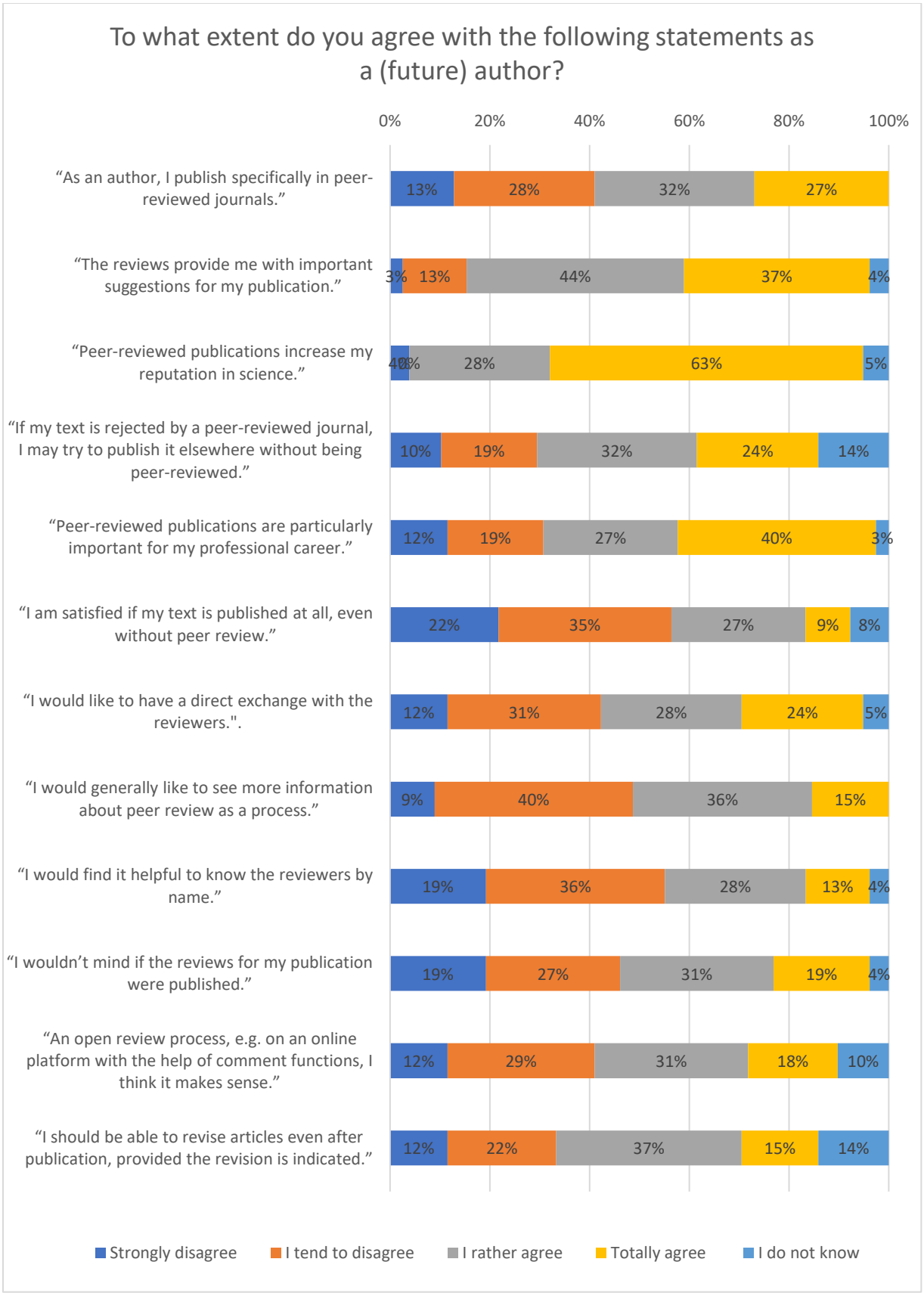
	0	1	2-4	5 or more	I do not know
Article in a peer peer reviewed journal	6	14	30	28	0
Article in a non-peer reviewed journal	11	12	19	36	0
Article in a peer reviewed anthology	20	18	24	15	1
Article in a non-peer reviewed anthology	23	15	18	22	0
Other non-peer reviewed form of publication	11	5	17	39	6

Slightly more than half of those surveyed publish specifically in peer reviewed journals (46 people) and the vast majority agree or somewhat agree with the statement that they receive important suggestions for their publication from the reviews (29 or 34 people) (see Fig. 4). The vast majority completely (49 people) or at least somewhat agree (22 people) with the statement that peer-reviewed publications have a reputation-enhancing effect. Accordingly, more than half of those surveyed are of the opinion that peer reviewed publications are particularly important for their careers (52 people). If a peer reviewed journal rejects its own publication, more than half of those surveyed try to place the publication in another journal (44 people).

The above statements are consistent with the fact that authors strongly disagree or rather disagree with the statement that they would be satisfied if the text was published at all (44 people).

Regarding the procedure itself, only just under half of those surveyed would like direct contact with the reviewers (41 people). In the survey conducted by the BIBB open access research project, this was 71 percent (Weiland 2022, p. 81). Accordingly, it is perceived as unhelpful to know the reviewers by name. There is no clear opinion on the question of whether the reports should be published. When it comes to the question of whether an open peer review process is considered useful, only slightly less than half of those surveyed said they agreed or rather agreed (38 people). Just over half of those surveyed are somewhat or completely comfortable with the idea of further revision even after an article has been published (29 and 12 people, respectively).

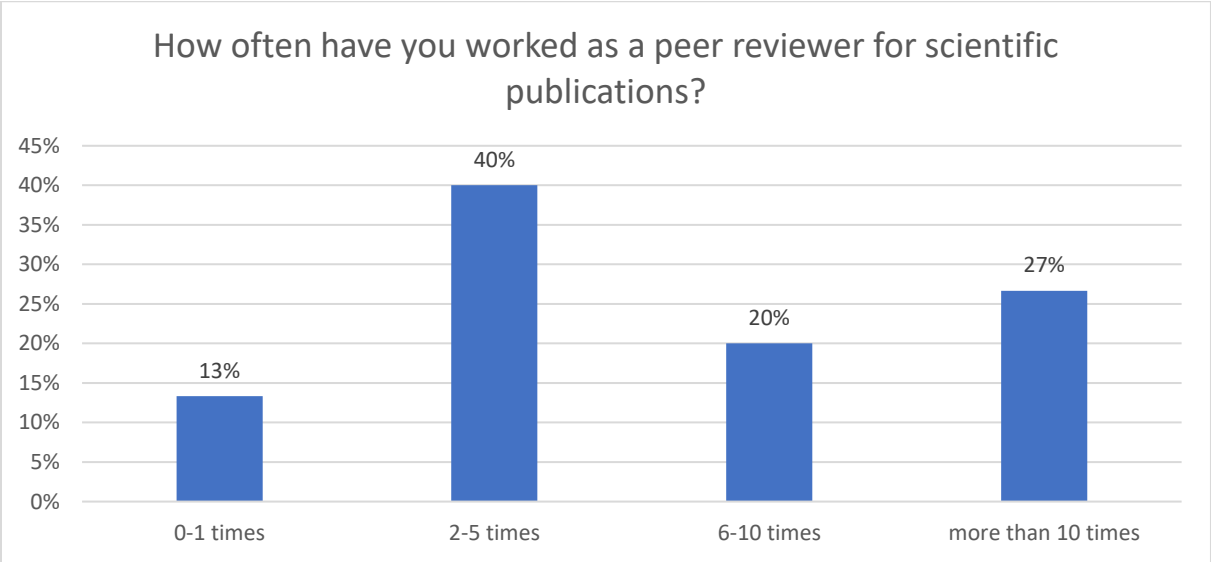
Figure 4: Attitudes towards the peer review process as an author – n=78



Survey results from the perspective of reviewers

When asked whether they had worked at least once as a peer reviewer for a scientific publication or whether they would work as a reviewer in the foreseeable future, 45 of the participants answered "yes".

Figure 5: Frequency of work as a reviewer – n=45



Most people (18) wrote between two and five reviews, and around a quarter of those surveyed (12 people) even wrote more than ten reviews.

Unsurprisingly, almost all respondents find that working as a reviewer is part of the academic world. Only three people disagree with this statement. However, approval ratings drop when people are asked whether they would like to work as an expert. Nine people say that this statement is not true.

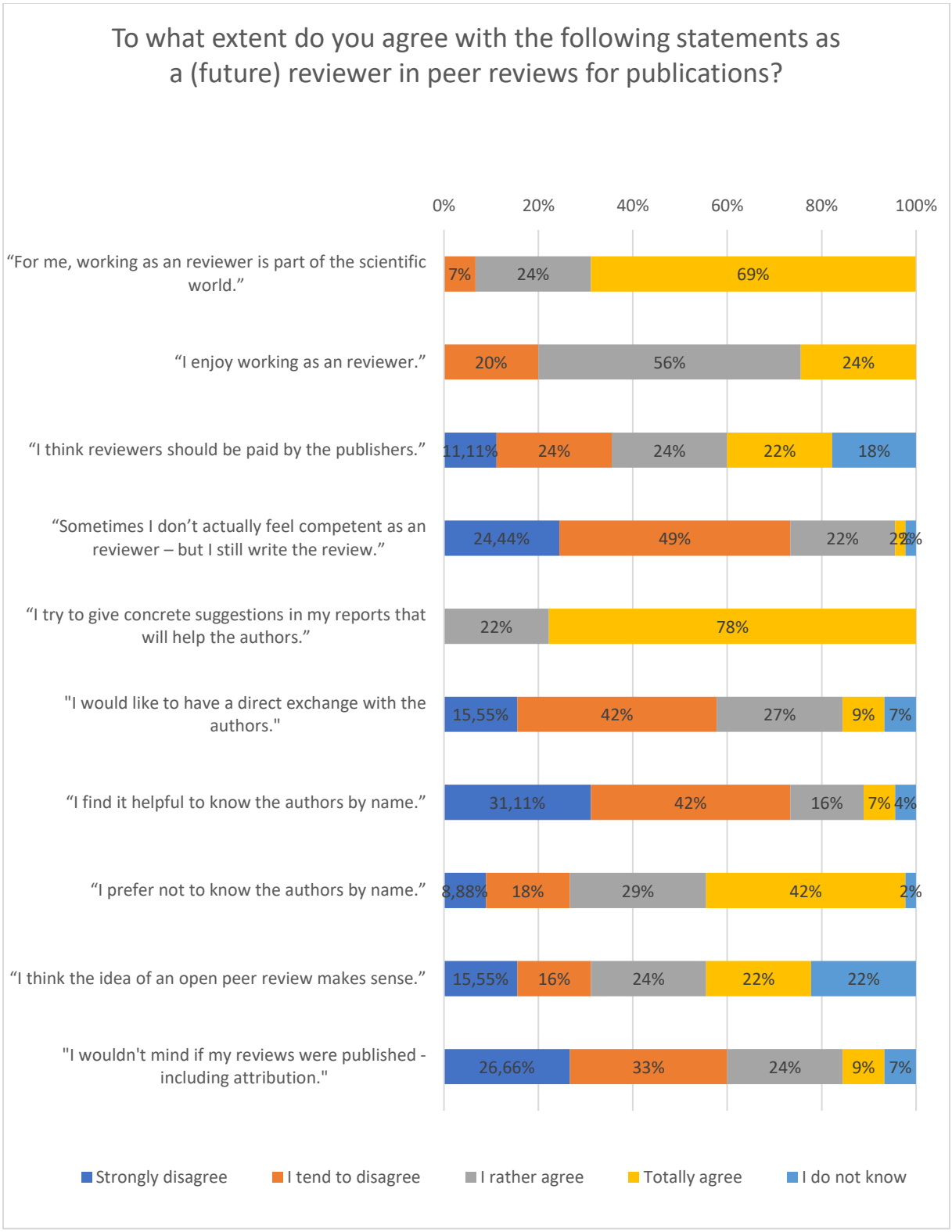
What is interesting is the agreement or disagreement with the statement that reviewers should be paid by the publishers: 35.55 percent (16 people) disagree or somewhat disagree with this statement. 46.66 percent (21 people) completely or somewhat agree. Eight people were undecided and said "don't know".

Almost a quarter of those surveyed (11 people) stated that they sometimes do not feel competent as a reviewer, but still write the review. It is important to all reviewers to give the authors concrete suggestions. More than half do not want direct contact with the authors (26 people).

More than half of those surveyed (27 people) refused to publish their reports by name. However, the idea of an open peer review process is viewed more positively. Only 14 people reject this. However, even ten people can't decide (“don't know”).

The majority of those surveyed agreed that it was not helpful to know the authors by name (33 people). Consequently, 32 people prefer not to know the authors.

Figure 6: Attitudes towards the peer review process as a reviewer – n=45



Free text answers

At the end of the survey, there was the opportunity to respond to the question “Do you have any comments about the peer review or the survey?” using free text, which several participants also took advantage of.

One person pointed out that attitudes towards peer review processes can change over the course of a scientific career, depending on the scientific field in which one works. The survey does not take this fact into account. Another person noted critically that “the results of a survey like this are largely predictable. […] It would have made more sense to make the individual pros and cons, the strengths and weaknesses the topic and to allow for a substantive argument.” The “discursive debates” are important because the “question about securing scientific knowledge Quality cannot be edited using flat ‘agree (dis)agree’ formats.” It should be noted here that it is not the aim of the survey or this article to comprehensively discuss the topic of scientific quality assurance. Rather, it was made clear in the introductory text to the survey that the aim is to obtain an initial assessment of the importance of peer review by scientists.

One person pointed out problems that are also discussed in the chapter to the state of research on the peer review process. The authors would often not know the reviewers, but conversely they could often draw conclusions about the authors based on the topic of the publication. Reviewers often lack the incentive to look more closely at a publication, so they don't read it carefully or they focus on simple points of criticism: “Sometimes you get the impression that the article wasn't read carefully enough. Then strange feedback arises.” The incentive system for reviewers would therefore have to be improved. One person demands that the reviewers should be paid by the publishers.

Several reviews on a publication are sometimes contradictory. Reviewers would demand changes that would not improve the publication, and criticism was often not formulated constructively.

Two people also point out the role of the editorial team in the peer review process. These could be a control body for the quality of the reports and should definitely give their own assessment of the publication.

There was also feedback on the topic of disclosing the names of the reviewers and the open peer review process. One person wrote: “Following publication it would be interesting to know the names of the reviewers.” Another person thinks that “the anonymity of both the author and the reviewer is important for a neutral and impersonal assessment.” One person also sees a danger in conducting the peer review process completely publicly. This could then become “small-scale” and “opinionated” because both the authors and the reviewers want to make a name for themselves.

Two people commented generally positively on the peer review process. This increases the quality of the contributions and allows you to develop yourself further. “The expert knowledge of the reviewers as well as their communicative competence and empathy […] are of central importance.” The possible role of editors was also pointed out twice. These are “of central importance when choosing experts”.

A cross-publisher definition, i.e. generally binding standards for the peer review process, would also be desirable. At the very least, journals should disclose their procedures and standards transparently, which is unfortunately not always the case.

Conclusion

In the open access research project, considerations from the sociology of science and media theory were already pointed out (Getz et al. 2020, p. 12ff.; Getz et al. 2022), which are also helpful for interpreting the results of this study. As early as 1971, Luhmann described that the quality assurance of scientific publications must precede their reception, since this can no longer be done by the readers themselves. The reason for this is that the constant overall increase in scientific publications is offset by only limited awareness on the part of researchers. In order to cope with the complexity of scientific publications, to assess thematic relevance and to check the accuracy of research results, mechanisms are needed to relieve individuals. Luhmann formulates this as follows: “The cursory orientation

towards symptoms takes the place of the thing itself that is meant. Reputation is drawn from symptoms and itself serves as a symptom of truth" (Luhmann 1972, p. 237). The peer review process plays a crucial role here, as the answers show.

In addition, there is a strong economization of science. Knowledge published in "high-ranking" journals has increasingly become a commodity since the last quarter of the last century, driven by the pricing of the major academic publishers. Science, which was not commercial in its origins, became a billion-dollar market due to the immense price increases for journals by scientific publishers.

In addition to this economization of knowledge, digitalization is also bringing about a change in formal scientific communication. "Although clearly the greatest communications medium of our time, the Internet is also the world's largest copy machine" (Malcolm 2002). Research results can be shared quickly. Distinguishing facts from fake news is also becoming a challenge in science. This is where examining the truthfulness of research results through the peer review process becomes particularly important.

Ultimately, the issue of reputation is crucial for researchers. This is attributed to researchers, and the scientific publication system or - in Luhmann's words - the "presence at renowned places" (Luhmann 1972, p. 237) plays a central role.

The survey shows that the participants are well versed in the peer review procedures commonly used in VET research and also consider these to be indispensable as quality assurance processes. Accordingly, only the minority would like more information about the peer review process. Nevertheless, publications that are not peer-reviewed are also considered relevant.

Overall, survey participants would also like to see more peer-reviewed publications. There is great agreement that this form of publication is important for one's academic career. The assumption is that these publications have a reputation-enhancing effect. Peer-reviewed publications are also considered important for your professional career. Accordingly, attempts are made to publish specifically in peer-reviewed journals. However, the reviews themselves are considered less relevant. Overall, the idea of

opening up the peer review process is met with skepticism. This also applies to the idea of mutual exchange between authors and reviewers. These results contradict the results from the open access research project, in which open and discursive procedures were rated better (Weiland 2022).

The activity as a reviewer is perceived as an integral part of scientific operations. In general, survey participants are happy to work as an reviewer. Less than half of those surveyed think that they should be paid as reviewers. The reviewers themselves consider themselves to be trying to make concrete suggestions for improvement to the authors.

As in other scientific disciplines, the peer review process is important in the field of vocational training. It ensures quality and – in the spirit of Luhmann – exclusivity and thus reputation. Due to the lack of comparative figures, it cannot be assessed whether more or less reviews are published in the field of VET than in other disciplines. At least there are a relatively high number of journals that use the peer review process.

Critical aspects were also mentioned in the free text answers to the survey. Open peer review procedures seem to be approached with a certain degree of reluctance; the double-blind procedure is the most widespread and accepted, even though research on the subject of peer review has shown many fundamental problems with the procedure and in particular the supposed advantages of it double-blind procedure is questionable. The role of the publishers was marginally discussed in the survey, but should be questioned, as the reviewers could be viewed as unpaid editorial employees of the publishers. This situation currently seems to be accepted as inherent to the scientific system.

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publication series, the journal “Berufsbildung in Wissenschaft und Praxis – BWP” and the structure of the VET Repository. Dr. Rödel is the institute’s open access officer.