Open Praxis, vol. 12 issue 4, October–December 2020, pp. 527–540 (ISSN 2304-070X)

What About Reuse? A Study on the Use of Open Educational Resources in Dutch Higher Education

Marjon Baas
Saxion University of Applied Sciences & Leiden University (The Netherlands)
m.a.a.baas@iclon.leidenuniv.nl

Robert Schuwer
Fontys University of Applied Sciences (The Netherlands)
r.schuwer@fontys.nl

Abstract

Extensive research has taken place over the years to examine the barriers of OER adoption, but little empirical studies has been undertaken to map the amount of OER reuse. The discussion around the actual use of OER, outside the context in which they were developed, remains ongoing. Previous studies have already shown that searching and evaluating resources are barriers for actual reuse. Hence, in this quantitative survey study we explored teachers' practices with resources in Higher Education Institutes in the Netherlands. The survey had three runs, each in a different context, with a total of 439 respondents. The results show that resources that are hard or time-consuming to develop are most often reused from third parties without adaptations. Resources that need to be more context specific are often created by teachers themselves. To improve our understanding of reuse, follow-up studies must explore reuse with a more qualitative research design in order to explore how these hidden practices of dark reuse look like and how teachers and students benefit of it.

Keywords: Open Educational Resources, OER, Higher Education, Adoption, Reuse

Introduction

The movement around Open Educational Resources (OER) focuses on making educational resources available to all through the use of open licenses. These licenses enable a teacher to reuse, revise, remix, redistribute and retain the resource (Wiley, n.d.) and thereby enabling a teacher to align resources to their own teaching needs (Belikov & Bodily, 2016). Teachers can search for OER in online repositories in which the number of OER available is growing continuously (Creative Commons, 2017). Online repositories implement drivers that contribute to reuse by providing indicators to encourage reuse through intentionality, versioning, licenses, granularity, open formats, quality assurance or a community of users (Santos-Hermosa et al., 2017). Yet, despite the vast number of OER available in online repositories, too little is known about the use of these resources by teachers. The discussion around the actual use of these resources, outside the context in which they were developed, remains ongoing. Even though some studies explore the repurposing of resources within a specific course (Greaves et al., 2010; Windle et al., 2010; Wills & Pegler, 2016) and provide insights into the process of adapting resources to specific teaching needs, these findings are results of funded projects on OER adoption. These findings do not illustrate the day-to-day procedure teachers follow in selecting and using resources outside such dedicated OER projects. This might imply that either adoption is not taking place, or that so-called 'dark reuse' takes place frequently, intervening in the practices around OER adoption. The term 'dark reuse' was posed by Wiley (2009) and describes the fact that teachers either receive resources through their personal contacts or already have a database of resources

Reception date: 10 July 2020 • Acceptance date: 30 October 2020
DOI: https://dx.doi.org/10.5944/openpraxis.12.4.1139

collected over time. It could be that these resources are open and that teachers are thereby engaging with OER, however without being aware of doing so. Yet, there is scant insight available into the amount of reuse of OER and to what extent 'dark reuse' might be prevalent. Only a small number of studies explore OER adoption into detail. In this study, we will therefore contribute to this research area by gaining insights into teachers' reuse behavior.

Adoption of OER

Extensive research has taken place over the years to examine the barriers of OER adoption. Based on a desk research, Cox & Trotter (2017) formulated the OER Adoption Pyramid to visualize the different factors that account for OER adoption. The basic necessities are access to (1) infrastructure and the (2) permission of the institute to use and/or create OER. When that is accounted for, then it is important that teachers have (3) awareness of OER and how it differs from other educational resources. Recent studies, however, show that this is often not yet the case since teachers are unsure about the defining characteristics of OER (Baas et al., 2019). If teachers have awareness, then they also need the (4) capacity to find, use, create and/or upload OER. All this, however, is still reliant of the (5) availability of relevant OER with requisite quality. Only when all these five factors are in place, teachers might be fortified to engage with OER (volition). When teachers engage with OER, several key practices are defined in different OER engagement models. Gurell (2008) defined five practices: finding, composing, adapting, reusing and sharing OER. Clements & Pawlowski (2012) also defined five practices in their re-use process for teachers reusing OER: search, evaluate, adapt, use and possible share OER. Stagg (2014) developed an OER continuum model specific for a Higher Education context based on a literature review and prior models. The author also included a relevant development in this model, namely that of Open Educational Practices. Open Educational Practices can be defined as "practices which support the (re)use and production of OER through institutional policies, promote innovative pedagogical models, and respect and empower learners as coproducers on their lifelong learning path" (Andrade et al., 2011, p. 12). The continuum model approaches OER adoption from the teachers' perspective and includes the following five, not necessarily linear, phases: awareness / access (basic replacement), sharing a newly authored OER, passive practitioner remix, active practitioner remix, student co-creation. Pulker and Kukulsma-Hulme (2020) developed a model describing the activities that teachers engage with when they search for, use and adapt OER. Again, five categories were defined: finding inspiration, re-appropriating, reflecting, learning and developing, and sharing in closed spaces.

While all these models are based on literature reviews and empirical studies, insights into teachers' actual use of OER is still limited. Even though adoption itself is not the goal (Ehlers, 2011), integrating OER in education can lead to better teaching practices and learning experiences for students (Rolfe, 2017). However, as visible in previously discussed models, it requires that teachers are aware of the defining characteristics of OER and adapt and revise resources if necessary, in order to consciously engage with OER. Nonetheless, this consciousness is often an issue and it is suggested that many practices of OER adoption happen 'below the radar' (Baas et al., 2019; Beaven, 2018), which is better known as 'dark reuse' (Wiley, 2009).

Dark reuse

Dark reuse describes the OER practices that are hidden. These practices are hidden, because teachers are either not aware that they are using OER, teachers receive resources from their colleagues (which might be OER), or teachers already have resources in their personal collections.

To explore the phenomena of dark reuse, Beaven (2018) executed an empirical study of OER engagement among language teachers at a distance university. The findings showed that teachers engaged with all five phases of the OER lifecycle model of Gurell (2008). However, most of these practices appeared to be hidden and only took place in private spaces. Beaven therefore concluded that 'dark reuse' is a strong element of teachers' engagement with OER.

Goal of this study

Previous research mainly measured adoption with instruments in which teachers were directly asked about their use of OER. The concept of OER however is often too ambiguous (Baas et al., 2019; Schuwer & Janssen, 2018). Therefore, to explore reuse it seems better to base that on teachers' practices in general without explicitly mentioning the term OER. In order to be able to fully reach the potential of OER in the Netherlands, it is of importance to gain more insights into the current state of reuse. Especially, since adoption of OER is a main theme within the Dutch Higher Education system. In 2015, the Ministry of Education published its Strategic Agenda in which the educational ambitions for the next 10 years were described. With regards to OER the following was formulated: "I call on institutes and their teaching staff to share their educational resources and to use materials from their colleagues both inside and outside their institutes" (Ministry of Education, Culture and Science, 2015, p. 30).

As previous studies in the Netherlands have already shown that the activities 'search' and 'evaluate' are barriers for actual reuse (Baas et al., 2019; Schuwer & Janssen, 2018), we will focus explicitly on practices of teachers who have already successfully searched and evaluated resources. Hence, this study aims to analyze the current state of reuse by teachers, in which we will analyze which resources are used by teachers, how they are adapted and to what extent these resources are accessible to others. This maps on the activities 'adapt', 'use' and 'share' in the model of Clements & Pawlowski (2012).

Method

Participants

To gain an overview of the current situation regarding reuse and whether 'dark reuse' might be prevalent, teachers in the Netherlands were invited to participate in an online questionnaire. The questionnaire was deployed in three runs:

1. A community of teachers in a Bachelor Nursing program in 12 Dutch Universities of Applied Sciences (September – October 2018)
2. Teachers in a Bachelor ICT program in one Dutch University of Applied Sciences (November 2018 – January 2019)
3. All teachers in Dutch Research universities and Universities of Applied Sciences (May 2019 – October 2019)

For each of these runs, an open call was issued in which we used different approaches depending on the context. For run 1, the open call was posted on the community platform and in institutional newsletters. This resulted in a response of 118 teachers, of which 116 were usable to include in the analysis. For run 2, an open call was sent by a direct and personal e-mail which was repeated after one month, and the call was also communicated in the department newsletter. This resulted in a response of 82 teachers, of which 74 were usable to include in the analysis. For run 3, the

open call was regularly sent out by social media and in national newsletters. This resulted in a response of 239 teachers, of which (depending on the question) 129–150 were usable to include in the analysis. Combined, a total of 439 teachers from 32 higher education institutes participated in the three runs of the questionnaire. The general characteristics of the participants for run 1 and run 3 can be found in Table 1. For run 2 the demographic questions were not included in the survey, because this could potentially compromise the anonymity of the respondents (all being employed in the same department).

Table 1: General characteristics of participants in run 1 and run 3 (n = 243)

Characteristic	Categories	Total	
		n	%
Gender	Male	95	39.1
	Female	141	58.0
	Other / do not want to say	7	2.9
Age	≤ 25 years	0	0.0
	26 - 35 years	48	19.8
	36 - 45 years	77	31.7
	45 - 55 years	71	29.2
	> 55 years	47	19.3
Teaching experience	0 - 2 years	34	14.0
	3 - 5 years	67	27.6
	6 - 10 years	56	23.0
	> 10 years	85	35.0

During data collection several actions were undertaken to manage ethical issues. Data collected in the questionnaires were anonymous as teachers were invited indirectly, making it impossible to trace a response back to an individual.

Procedure

In the open call, the research objectives were explained after which teachers could choose to fill out the questionnaire. To be able to analyze the current state of reuse, the first question was aimed to select teachers that are actively involved in teaching. If a participant selected that they were not a teacher in the past or current academic year or if they did not use any digital resources in their courses, they were redirected to the end of the survey. Based on these questions, our target group has been defined. From the 439 responses, 53 were not in the target group.

Questionnaire

The questionnaire was designed to gain more insights into the extent of reuse. Before administering each run, the questionnaire was tested by 15 teachers to optimize the instrument. This resulted

in some minor changes for some items between the three runs of the questionnaire, which will be discussed in detail in the next sections.

Field of study

To be able to understand the context in which teachers teach, three questions were asked. In run 1 and 2, the field of study was clear (Nursing respectively ICT). In run 3, teachers were asked to select the field of study of the course from a list based on the website Studiekeuze123 (https://www.studiekeuze123.nl/), established by the Ministry of Education, Culture and Science. In addition, questions were formulated to understand the level of education (e.g. bachelor or master) and the setting of the course (e.g. if the teacher is part of a team of teaching the course on its own). For the sake of convenience, in the remainder of this article the three runs will be referred to as Nursing (run 1), ICT (run 2) and NL (run 3).

Use of resources

First, teachers got the assignment to take one course in the current or previous year in mind and answer all questions in the questionnaire for that specific course. To gain more insights into the kind of resources that are being used, teachers were asked to select resources that they use in their selected course from an extensive list (e.g. textbooks, presentations, or resources from other courses). As previously mentioned, there were some small differences between the three runs in the questions. One difference is that we added the resource 'digital tool' in ICT due to the fact that in the review of the questionnaire it was commented that this type of resource was missing since ICT teachers often use digital tools. Another difference is that, based on insights of Nursing and ICT, we added the distinction between a non-digital study book and a digital study book in NL.

Origin of resources

To analyze if and how adaptations of resources took place, teachers were asked about the origin for each of the selected resources. Teachers could select multiple answers of

- 'I have developed this material myself and have not or hardly reused material from third parties',
- 'I developed this material myself and mainly reused material from third parties (e.g. by mixing learning material from third parties)',
- 'I have got this material from third parties and did not make any adaptations to it myself',
- 'I have got this material from third parties and have made adaptations to it myself'

For NL and ICT, the fourth option was split into two separate answers:

- 'I have got this material from third parties and have made minor adaptations to it myself',
- 'I have got this material from third parties and have made major adaptations to it myself'.

Explanatory notes were provided to explain the differences between major and minor adaptations. However, in the analysis we combined these two so that it became possible to compare with Nursing.

Access to resources

The last questions of the questionnaire focused on the access of resources that are used in their course. For each resource that they had selected previously, teachers could select multiple answers ranging from: 'Only accessible for students, teachers and other persons in the own institute', 'Accessible to a private group of students, teachers and other persons, not necessarily from the own institute', 'Unlimited access for everyone from all over the world', to 'I do not know'.

Volition to reuse resources

In NL, we also wanted to gain more insights into teachers' volition to reuse resources and their awareness regarding OER. It became clear in the previous runs of the questionnaire that this information could provide institutes with a better understanding of teachers' behavior regarding reuse. Teachers' volition to reuse resources was measured with a selection list of possible motives based on Jhangiani et al. (2016).

Awareness

In NL, two items were used in which teachers were asked to self-report their level of awareness of openness. First, teachers were asked whether they were familiar with open licenses (e.g. Creative Commons). If their answer was yes, a follow-up question was posed in which teachers were asked whether they checked the open license for rights to adapt the resource. Answer options ranged from 'I (almost) always do', 'I sometimes do', 'I (almost) never do'.

Analysis

The first phase of the analysis was to analyze each data set individually. Descriptive analysis was undertaken to gain insights for each run. After the analysis of each data set, we made a comparison document of changes we made in the three questionnaires. Based on this overview, we decided to exclude some questions from further analysis across the three runs. Then, we combined the data sets for the questions that were similar in nature. We kept record of the origin of the data, so that we could compare the results across the three runs. We performed chi-square tests to examine differences between the three runs.

Findings

Field of study

For the runs Nursing and ICT, the field of study was already set, respectively Health for Nursing and Science and Computer Science for ICT. All courses within these two runs, as taken in mind by teachers when answering the questionnaire, are offered in the Bachelor phase. For the run NL, the field of study was unknown. Therefore, in this questionnaire teachers were asked to define their field of study and the phase of the program in which the course was offered. Teachers (n=150) teach in a wide range of fields, but most often stated are Health (22.7%), Science and Computer Science (14.7%), Economy and Business (14.0%), and Educational Studies (12.0%). Most courses are taught in the Bachelor phase (80.2%).

Additionally, we wanted to examine if teachers were part of a teacher team for their selected course or whether they teach the course alone. The result show that in all three runs teachers are most often part of a teacher team, respectively 96.6% at Nursing, 83.3% for ICT and 72.7% for NL.

Use of resources

In each selected course several resources are used by teachers. The result show that presentations, exercises, videos, and pictures are used the most. Interactive games and (part of) a digital course created by a third party are used the least. Resources that are mentioned under 'Other' are digital pinboard (e.g. Padlet), Mentimeter, digital microscopy, live coding demos, online conferences (webinars), discussion forums and user manuals. What we can derive from the results (Table 2) is that there are little differences in the use of resources between the three runs. The main differences can be found in the use of assessments, (parts of) digital courses and interactive games.

Table 2: Use of resources (%) within each run

Resources	Run		
	Nursing (n=116)	ICT (n=74)	NL (n=129)
Presentations	95.7%	85.1%	88.4%
Exercises	83.6%	93.2%	77.5%
Videos	81.9%	75.7%	73.6%
Pictures	79.3%	60.8%	58.9%
Articles	68.1%	47.3%	58.1%
Assessments	61.2%	24.3%	59.7%
Study book	45.7%	41.9%	48.1% (non-digital) 51.9% (digital)
Digital tool	-	33.8%	40.3%
(part of) course of 3rd party	11.2%	32.4%	33.3%
(part of) course of colleagues	27.6%	40.5%	24.8%
Interactive games	27.6%	8.1%	16.3%
Other	12.9%	21.6%	13.2%

Note: n = number of teachers reporting to use this resource in their self-selected course

Measure of reuse

To find out about the origin of the learning materials, the results for all three runs were combined (see Table 3). The results show that most resources are from third parties without adaptations. This accounts especially for videos (68.5%), pictures (53.7%), articles (82.5%) and courses of third parties (50.7%). Assessments (59.1%), exercises (45.6%), interactive games (45.1%) and presentations (41.7%) are often self-developed with little or no reuse. It appears that resources

that are self-developed with reuse of resources does occur little, while reusing resources of third parties with adaptations most often occurs for courses developed by colleagues (57.3%) and third parties (41.3%).

Table 3: Measure of reuse (%), combined for all three runs (n=314)

Resources	Measure of reuse (%)			
	Self-developed no reuse	Self-developed reuse mainly	Third parties no adaptation	Third parties with adaptations
Presentations	41.7%	22.5%	6.2%	29.6%
Exercises	45.6%	15.4%	14.8%	24.3%
Videos	12.5%	7.8%	68.5%	11.3%
Pictures	10.6%	8.5%	53.7%	27.2%
Articles	3.5%	4.5%	82.5%	9.5%
Assessments	59.1%	12.2%	16.0%	12.7%
Study book	19.0%	9.5%	54.4%	17.1%
(part of) course of 3rd party	1.3%	6.7%	50.7%	41.3%
(part of) course of colleagues	6.3%	6.3%	30.2%	57.3%
Interactive games	45.1%	9.9%	29.6%	15.5%
Other	34.0%	10.6%	44.7%	10.6%
Total (n)	537	233	763	441

Note: The options digital tool and non-digital study book are left out, because these options were not included in all three runs.

It appears that teachers use different practices for different types of resources. All four types of reuse are present. Most emphasis is on the use of resources from third parties without adaptations, which accounts mostly for articles, videos, study books and pictures. Resources from third parties with adaptations is most often focused on (part of) courses made by colleagues or third parties. Easier to develop resources, like assessments, exercises and presentations, are most often self-developed without reuse.

A closer analysis of the differences in reuse between the three runs gives the results in Table 4. A χ^2-test on the differences revealed a significant difference in reuse between the two runs ICT and Nursing ($\chi^2(3) = 11.68$, $p<0.05$). Analysis shows that teachers from ICT apply more reuse of learning material from third parties than those from Nursing. An explanation for this might be the greater awareness of reuse by teachers in ICT, fed by their programming practices where they massively reuse and adapt open source software.

A closer analysis of the differences in practices of reuse and the teaching experience gives the results in Table 5. A χ^2-test on the differences revealed a significant difference in reuse dependent on teaching experience ($\chi^2(9) = 31.19$, $p<0.05$). Further analysis of the data shows that teachers with an experience < 2 years make more use of existing materials. A possible explanation is that 32 of the 34 teachers from this group are in a team teaching the course (94%). Being less experienced,

they most likely will mainly use the learning materials from their (more experienced) colleagues. In contrast, teachers with an experience of >10 years are more likely to develop their learning materials (with and without reuse of material from third parties) than teachers with less experience. A possible explanation is that they have created and gathered these learning materials during their career as a teacher and thereby created their own library of learning materials.

Table 4: Origin of learning materials (%) in Nursing and ICT

Origin	Nursing (n=830) (N=116)	ICT (n=394) (N=74)	NL (n=889) (N=124)
I have developed this material myself and have not or hardly reused material from third parties	23.3%	19.3%	33.0%
I developed this material myself and mainly reused material from third parties	12.3%	7.6%	12.1%
I have got this material from third parties and did not make any adaptations to it myself	41.6%	44.2%	37.1%
I have got this material from third parties and have made adaptations to it myself	22.9%	28.9%	17.8%

Note: N= # respondents; n= # responses. The question was answered for each learning material they use, therefore n>N. The % is taken from N.

Table 5: Origin of learning materials and teaching experience

Origin	Teaching experience			
	0-2 years (n=233) (N=34)	3-5 years (n=443) (N=66)	6-10 years (n=390) (N=54)	> 10 years (n=622) (N=82)
I developed this material myself and mainly reused material from third parties (e.g. by mixing learning material from third parties)	11.6%	12.6%	13.1%	11.6%
I have developed this material myself and have not or hardly reused material from third parties	16.3%	26.6%	29.5%	32.8%
I have got this material from third parties and did not make any adaptations to it myself	45.1%	37.7%	37.4%	39.1%
I have got this material from third parties and have made adaptations to it myself	27.0%	23.0%	20.0%	16.6%

Note: N= # respondents; n= # responses. The question was answered for each learning material they use, therefore n>N. The % is taken from N.

Measure of access to resources

Respondents were asked to whom the learning materials they used where accessible. The results show that most resources are only accessible for persons within the own institute (see Table 6).

Only a small proportion is available for a select group of people while resources like videos (48.4%), articles (50.0%), digital courses of a third party (45.2%), and pictures (41.0%) are available to all.

Table 6: Measure of access for used resources (%), combined for all three runs

Resources	Measure of access (n=311)			
	Institute	Private group	Unlimited access	Don't know
Presentations	82.2%	12.2%	2.4%	3.1%
Exercises	79.2%	13.3%	4.5%	3.0%
Videos	35.8%	8.1%	48.4%	7.7%
Pictures	40.1%	10.1%	41.0%	8.8%
Articles	24.7%	18.3%	50.0%	7.0%
Assessments	84.0%	10.4%	4.3%	1.2%
(part of) course of 3rd party	30.1%	9.6%	45.2%	15.1%
(part of) course of colleagues	70.3%	14.3%	4.4%	11.0%
Digital studybooks	47.7%	24.2%	20.1%	8.1%
Interactive games	50.0%	18.3%	25.0%	6.7%
Other	42.0%	18.0%	34.0%	6.0%

Note: The options digital tool and non-digital study book are left out, because these options were not present in all three runs.

Teachers' awareness and volition of reuse

Only in the NL run the awareness of teachers on open was measured with a question on open licenses. Main goal was to examine whether teachers consciously examine whether resources are open. The result show that most teachers in run NL (n=124) are familiar with open licenses (79%), but that only around a third of this group (almost) always check the open license when reusing resources. These results, as visible in Table 7, show that familiarity with open licenses is relatively high, but a correct attitude when reusing learning materials is relatively low (~35-40%) and independent of whether materials are adapted or not.

Table 7: The percentage of teachers that check on open license (n=97)

Reuse	Check on open license when reuse (%)		
	(almost) always	sometimes	(almost) never
With adaptations	39.2%	25.8%	35.1%
Without adaptation	35.4%	28.1%	36.5%

In the NL questionnaire, we also explored teachers' volition to reuse resources (see table 8). Teachers' main reasons are to gain new ideas (77.4%), as it is efficient (69.4%), and because the resources are of high quality (60.5%). In contrast, policy is hardly mentioned as a motivation to adopt OER (5.6%).

Table 8: Volition to adopt OER (n=124)

Volition	Total	
	n	%
As a source of inspiration and to gain new ideas	96	77.4
Efficiency (time gain)	86	69.4
The resource is of high quality (e.g. from a reputable institution)	75	60.5
As a means to realize a desired pedagogical design	55	44.4
As an addition to the mandatory resources	52	41.9
The resources are from a colleague that I trust	48	38.7
It is the policy at our institute / faculty	7	5.6
Other	8	6.5

Discussion and conclusion

To be able to fully reach the potential of OER in the Netherlands, it is of importance to gain more insights into the current state of reuse. Therefore, the aim of this study was to analyze the current state of reuse by teachers. We analyzed which resources are used by teachers, how they are adapted and to what extent these resources are accessible to others. The results are discussed in this section.

Origin and Access

In general, is important to note, that the results show that the opinions on what can be considered learning materials are very diverse. This becomes especially clear when one looks at the materials mentioned under 'Other' that range from specific tools to online materials and webinar. This could be explained by the lack of a common definition of learning materials. The UNESCO Recommendation mentions in their definition of OER "... learning, teaching and research materials in any format and medium..." (UNESCO, 2020, p. 2–3), without any details of what is meant by learning and teaching materials and what the differences are between those two terms. The definition of OER by the William and Flora Hewlett Foundation describes (open) educational resources as "... include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" (Weller et al., 2015, p. 1). To develop support and policies for reuse of learning materials, a more precise definition is necessary to assure the full spectrum of learning materials is covered.

The origin of resources differs for the different types of resources. Resources for which development is hard or time-consuming (like videos, study books and pictures) are most often reused from third

parties without adaptations. It is not surprising that access to these resources is often unlimited, since these resources are already made available online by third parties. Resources that need to be more context specific or are on specialized subjects are created by teachers themselves. These resources are mainly presentations, assessment and exercises. Access of these resources is most often limited to the own institution. Our results on the limited access to resources by others, is in line with the findings of Rolfe (2012). She stated that local sharing is more common than the formal way of sharing. This can be considered as evidence that dark reuse is a common practice in higher education in the Netherlands.

Awareness and Volition

Even though most teachers in the NL run were familiar with open licenses, only a third of this group examines the license when reusing resources. A correct attitude regarding reuse is limited. While recent research suggests that awareness of OER is increasing (Seaman & Seaman, 2020), this does not automatically suggest that formal, proper reuse might increase as well. It could be that resources are reused or shared without proper attribution, which will only increase to the amount of dark reuse. While it might be quicker and easier for teachers to use resources without checking how to properly refer to the original resource, it is important to stress the consequences of doing so. It does not only lead to not rewarding the author of the resource for its work, but also an increased risk to receive an institutional claim on improper use of copyrighted materials form the Dutch organization 'Stichting Pro' (n.d.).

When we examined teachers' volition to adopt OER, it showed that it is often a source of inspiration or that it is efficient to reuse. This might explain somewhat why most teachers reuse without checking the license. A striking result is that policy is hardly a motivation of teachers to adopt OER. This could mean that there either is no (open) policy at the institution, the policy is unknown to the teacher or that it provides no source of motivation. While for some institutions an OER policy has been a starting point to increase adoption (Schuwer & Janssen, 2018), other institutes might increase adoption from a more bottom-up approach.

Dark Reuse

Based on our results, it is very likely that dark reuse might be more prevalent than official adoption of OER. Whereas previous research indicate that limited adoption could be explained due to teachers' lack of awareness, our results show that even if teachers are aware of open licenses, checking the licenses before reuse is not self-evident. We could therefore conclude that although it might appear that teachers do not or limited adopt OER as made clear in recent research in the Netherlands (Baas et al., 2019; Schuwer & Janssen, 2018), teachers might actually engage more often with OER than the numbers might suggest. This conclusion is in line with the findings of Beaven (2018) who stated that most OER practices are "hidden and take place in private spaces".

Limitations and Future Research

Although the results of this study gain insights into the amount of OER reuse, there are also some limitations to this study. First, the findings are based on quantitative self-reports of teachers. Although this has some downsides, this was a conscious decision since we wanted to explore teachers' behavior regarding reuse across more than one instance, as suggested by Beaven (2018). However, follow-up studies must explore reuse with a more qualitative research design in order to explore how these hidden practices look like and how teachers and students benefit of it. Second, some small changes

were made in the questionnaire over the runs due to feedback we got from the participants. This resulted in some slight differences and although we accounted for that in the results, it is important to note that the three runs are not fully comparable. Future research could explore whether it is possible to design a basic questionnaire that could be set out longitudinally among teachers to analyze reuse.

Concluding Remarks

Our goal is to update the data available about reuse in the Netherlands, especially since this study showed that dark reuse might be prevalent. We will do this by creating a so-called OER reuse hub, similar to the OER Research Hub (n.d.) of the OU UK (http://oerhub.net). Here institutes can find research instruments, outcomes, more information about OER or get in touch with experts. The current version of the questionnaire and the dataset are already available at Schuwer & Baas (2020) (https://doi.org/10.17026/dans-zz9-bang). Hopefully, this will be a start to gain more insights into reuse behavior among teachers and effects of measures to increase effective reuse.

References

Andrade, A., Ehlers, U.-D., Caine, A., Carneiro, R., Conole, G., Kairamo, A.-K., … Holmberg, C. (2011). *Beyond OER: Shifting focus to open educational practices* (pp. 1–191). Open Education Quality Initiative. Retrieved from https://oerknowledgecloud.org/sites/oerknowledgecloud.org/files/OPAL2011.pdf

Baas, M., Admiraal, W., & Van den Berg, E. (2019). Teachers' Adoption of Open Educational Resources in Higher Education. *Journal of Interactive Media in Education, 2019*(1), 9. https://doi.org/10.5334/jime.510

Beaven, T. (2018). 'Dark reuse': An empirical study of teachers' OER engagement. *Open Praxis*, *10*(4), 377–391. https://doi.org/10.5944/openpraxis.10.4.889

Belikov, O.M., & Bodily, R. (2016). Incentives and barriers to OER adoption: A qualitative analysis of faculty perceptions. *Open Praxis*, *8*(3), 235–246. https://doi.org/10.5944/openpraxis.8.3.308

Clements, K. I., & Pawlowski, J. M. (2012). User-oriented quality for OER: Understanding teachers' views on re-use, quality, and trust. *Journal of Computer Assisted Learning*, *28*(1), 4–14. https://doi.org/10.1111/j.1365-2729.2011.00450.x

Cox, G.J., & Trotter, H. (2017). An OER framework, heuristic and lens: Tools for understanding lecturers' adoption of OER. *Open Praxis*, *9*(2), 151–171. https://doi.org/10.5944/openpraxis.9.2.571

Creative Commons (2017). *State of the Commons*. Retrieved from https://stateof.creativecommons.org

Ehlers, U.D. (2011). From Open Educational Resources to Open Educational Practices. *eLearning Papers*, 1–8.

Greaves, L., Roller, S. & Bradley, C. (2010). Repurposing with a purpose: A story with a happy ending. *Journal of Interactive Media in Education*, *2010*(1), Art. 5. https://doi.org/10.5334/2010-5

Gurell, S. (2008). *Open Educational Resources Handbook 1.0 for Educators*. Center for Open and Sustainable Learning. Retrieved from http://www.lulu.com/shop/seth-gurell/open-educational-resources-handbook-for-educators-version-10/ebook/product-17400463.html

Jhangiani, R., Pitt, R. Hendricks, C, Key, J. & Lalonde, C. (2016). *Exploring Faculty Use of Open Educational Resources at British Columbia Post-Secondary Institutions*. BCcampus, Victoria, British Columbia. Retrieved from http://oro.open.ac.uk/45178/1/BCFacultyUseOfOER_final.pdf

Ministry of Education, Culture and Science (2015). *The value of knowledge. Strategic agenda for higher education and research 2015–2025*. Retrieved from https://www.government.nl/documents/reports/2015/07/01/the-value-of-knowledge

OER Research Hub (n.d.). *Oerhub: Researching Open Education*. Available at http://oerhub.net

Pulker, H. & Kukulska-Hulme, A. (2020). Openness re-examined: teachers' practices with open educational resources in online language teaching. *Distance Education, 41*(2), 216–229. https://doi.org/10.1080/01587919.2020.1757412

Rolfe, V. (2012). Open educational resources: staff attitudes and awareness. *Research in Learning Technology*, *20*(1). https://doi.org/10.3402/rlt.v20i0/14395

Rolfe, V. (2017). Striving Toward Openness: But What Do We Really Mean? *The International Review of Research in Open and Distributed Learning*, *18*(7). https://doi.org/10.19173/irrodl.v18i7.3207

Santos-Hermosa, G., Ferran-Ferrer, N., & Abadal, E. (2017). Repositories of Open Educational Resources: An Assessment of Reuse and Educational Aspects. *The International Review of Research in Open and Distributed Learning*, *18*(5). https://doi.org/10.19173/irrodl.v18i5.3063

Schuwer, R. & Baas, M. (2020). *Questionnaire and dataset: What about reuse? A study on the use of open educational resources in Dutch higher education*. DANS. https://doi.org/10.17026/dans-zz9-bang

Schuwer, R., & Janssen, B. (2018). Adoption of Sharing and Reuse of Open Resources by Educators in Higher Education Institutions in the Netherlands: A Qualitative Research of Practices, Motives, and Conditions. *The International Review of Research in Open and Distributed Learning, 19*(3). https://doi.org/10.19173/irrodl.v19i3.3390

Seaman, J. & Seaman, J. (2020). *Inflection Point: Educational Resources in U.S. Higher Education, 2019*. Bay View Analytics. Retrieved from https://www.onlinelearningsurvey.com/reports/2019inflectionpoint.pdf

Stagg, A. (2014). OER adoption: a continuum for practice. *RUSC. Universities and Knowledge Society Journal, 11*(3), 151–164. https://doi.org/10.7238/rusc.v11i3.2102

Stichting PRO. (n.d.). Over Stichting PRO. Retrieved from https://www.stichting-pro.nl/nl/over-stichting-pro

UNESCO (2020). *Draft Recommendation on Open Educational Resources*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000370936

Weller, M., de los Arcos, B., Farrow, R., Pitt, B., & McAndrew, P. (2015). The Impact of OER on Teaching and Learning Practice. *Open Praxis, 7*(4), 351–361. http://dx.doi.org/10.5944/openpraxis.7.4.227

Wiley, D. (n.d.) *Defining the 'Open' in Open Content and Open Educational Resources*. *Educational Resources*. http://opencontent.org/definition

Wiley, D. (2009). *Dark Matter, Dark Reuse, and the Irrational Zeal of a Believer*. https://opencontent.org/blog/archives/905

Wills, S. & Pegler, C. (2016). A Deeper Understanding of Reuse: Learning Designs, Activities, Resources and their Contexts. *Journal of Interactive Media in Education*, *2016*(1), p. 10. https://doi.org/10.5334/jime.405

Windle, R., Wharrad, H., McCormick, D., Laverty, H., & Taylor, M. (2010). Sharing and reuse in OER: experiences gained from open reusable learning objects in health. *Journal of Interactive Media in Education*, *2010*(1). https://doi.org/10.5334/2010-4