Why Teachers Share Educational Resources

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Why Teachers Share Educational Resources: A Social Exchange Perspective

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Introduction

In 2009, the Dutch government launched the Wikiwijs project to increase the use, development and sharing of digital learning materials. Wikiwijs mainly offers Open Educational Resources (OER) through a freely accessible website. Although not all resources are freely available, most of Wikiwijs's learning materials are published under an open licence. Even though part of the educational resources is provided by the project itself, Wikiwijs relies largely on voluntary contributions by individual teachers who develop digital learning materials. As most of the educational resources Wikiwijs offers come at no cost, teachers need to be willing to share their own resources without any financial compensation.

In this chapter, we address the issue of teachers' sharing behaviour with respect to OER. Using social exchange theory as a basis and empirical research on knowledge-sharing behaviour from within this framework, we explore possible determinants of OER-sharing behaviour. Our conjectures regarding these determinants are then tested empirically through a large-scale survey study.

In organisational research, knowledge sharing has been found to be a critical success factor for most profit organisations (e.g., Grant 1996; Davenport and Prusak 1998). Research shows, however, that it is hard to motivate people to use knowledge-sharing systems that are based on information and communications technology (ICT) (Cabrera and Cabrera 2002). Moreover, knowledge-sharing behaviour amongst teachers has received limited attention by scholars or organisational experts. One reason for this is that knowledge sharing may seem less important in a non-profit setting. Knowledge may often be considered of limited strategic value to teachers or school management as most of the subject-related knowledge that teachers possess is passed on through textbooks or formal teacher training. However, OER can be considered as a new kind of knowledge, which can be used to diversify teaching activities or to gain new insights into other teaching

methods for a particular subject. As such, sharing OER may be a valuable way to disseminate knowledge or insights. Although these knowledge-sharing activities may not contribute to any strategic advantages, they might prevent teachers from reinventing the wheel. By recycling other teachers' ideas, teaching activities may improve and course preparation time could possibly be reduced. Sharing OER should, thus, be considered as knowledge-sharing behaviour and an effective method to help teachers with professional development and to support them in improving their content knowledge and pedagogical skills.

Sharing OER as a Social Exchange Process

An important question asked by Cabrera and Cabrera (2005) is why one should share knowledge, such as OER, when it is possible to "take a free ride" on the OER other teachers have supplied, especially if sharing may at first sight seem to remain unrewarded.

According to social exchange theory (Homans 1958), teachers may have motives to share learning materials other than financial rewards. One possible reward for sharing OER could be the prestige a teacher acquires or the recognition (i.e., the reputation) one gets for the shared work. In the study described below, social exchange theory is used as a framework to explain why teachers would want to share digital learning materials. According to this theory, it is initially expected that teachers will weigh the costs and benefits of sharing, which will in turn determine whether or not they will share.

Another construct in social exchange theory is the concept of trust. Trust is related to the extent to which one believes the rewards can actually be acquired. According to Wang and Noe (2010), social exchange theory has been the most commonly applied framework for studying knowledge-sharing behaviour. As we have argued that sharing OER can be considered a form of knowledge sharing, we believe social exchange theory can be successful in explaining teachers' OER-sharing behaviour as well.

We will discuss the three central concepts of social exchange theory: cost, reward and trust, and present previous empirical studies in support of our conjectures regarding OER-sharing behaviour. We will conclude with several hypotheses based on social exchange theory.

Costs Involved in Sharing OER

One can assume that there are different costs associated with sharing OER. A first factor we identified is anxiety associated with sharing. In other contexts than education, this anxiety has been associated with an individual's expectations to lose a competitive advantage (Renzl 2008). In the context of OER, loss of a competitive advantage is rarely considered by teachers because it is highly unlikely that sharing OER would lead to a reduction of one's value for the organisation. Yet, anxiety with respect to sharing OER may be related to the fear a teacher experiences when his or her work is evaluated by others. Indeed, in a study by Bakker et al. (2006), it was found that employees were less inclined to share knowledge with colleagues who were perceived as very capable. That study may suggest that employees are afraid to share knowledge if they fear that others, who they believe are more capable than they are, may criticise them or depreciate their work.

We believe that teachers need to feel sufficiently self-confident in order to have the intention to share OER. When teachers consider themselves to be sufficiently skilled in developing OER and believe that their contributions will provide an added value, they will be more inclined to share. This "knowledge self-efficacy" (or confidence in their knowledge) is considered a cost for two reasons:

- A lack of knowledge self-efficacy may lead to anxiety.

- A lack of pedagogical and ICT-related skills would require an investment on the part of the teacher. In order to be able to effectively develop OER, a teacher would probably need to invest time and effort in training activities with respect to his or her pedagogic and ICT skills, which can be seen as a considerable cost.

To summarise, we consider knowledge self-efficacy as a possible determinant of sharing intention in our study, as previous research on knowledge-sharing behaviour has confirmed the importance of this factor (e.g., Cabrera et al. 2006; Lee et al. 2006).

A second cost is the time invested in the development of OER. Hew and Hara (2007) found in a qualitative study that one of the most frequently cited costs, inhibiting knowledge sharing in online communities, is employee concern about the time commitment. We expect that if teachers perceive they have invested a lot of time in developing OER, they will be less inclined to actually share their OER, especially when the benefits of sharing are considered to be low. Another study also found that the more time one expects to need for sharing knowledge through online repositories, the less likely it becomes that employees will actually share (Kankanhalli et al. 2007). Based on these findings, we believe that when teachers perceive the sharing activity to be an additional cost on top of the development cost itself, this reduces the likelihood of sharing OER. We call this latter cost the "technological cost," which refers to the effort one must make to use ICT tools to share OER (which may be as simple as copying files to a CD-ROM or a memory stick in the case of sharing with a direct colleague, or logging into a Wiki for Web-based OER sharing).

Rewards Involved in Sharing OER

Although there is no financial compensation involved in sharing OER, a number of possible benefits can be identified which may motivate teachers to share. We will consider the benefits of reputation, altruism and reciprocity. Reputation refers to the recognition teachers could possibly receive from sharing their OER. When other teachers perceive a teacher's OER as valuable, this specific teacher may be regarded as more capable than others. Wang and Noe (2010) mention that "impression management" may be an important reason why employees choose to share knowledge. Moreover, several scholars (Tiwana and Bush 2001; Hemetsberger 2002) believe that participants in online communities may become motivated to share knowledge through the use of "reputation points" in online communities. Similarly, by sharing OER, we believe teachers may have a way to show their competencies to other colleagues, thus improving their reputation.

An improved reputation is thus hypothesised to be a possible reward of OER-sharing behaviour.

Altruism implies that teachers see OER sharing in itself as pleasant. Teachers who share OER for altruistic reasons generally have a good feeling about the behaviour

itself. Altruism may be considered to be an intrinsically motivating factor, as teachers who share because of altruistic motives generally feel no need for any external rewards to perform a behaviour. This is in stark contrast with reputation, which motivates people for reasons external to the behaviour itself.

We believe altruism may be an important predictor of teachers' sharing intentions, probably more than reputation, given that previous studies have shown that teachers are motivated primarily by intrinsic factors (De Cooman et al. 2007). Moreover, some researchers believe that extrinsic incentives may hinder the free flow of knowledge in organisations (Wasko and Faraj 2000) and therefore the relative importance of extrinsic and intrinsic motivators should be studied. Finally, in an exploratory study by Lee et al. (2006), the enjoyment of helping others was found to be one of the most cited reasons for knowledge sharing in online discussion boards, providing empirical evidence for our assumption that altruism plays a key role in OER-sharing behaviour.

Reciprocity implies that teachers share OER because they believe others will do so as well. In a sense they trust that, by sharing their OER, they set an example for other teachers. The effect of reciprocity may also be perceived in another sense: that teachers who perceive that their colleagues share OER feel obliged to do so as well (this is known as the "descriptive norm"). We therefore believe that reciprocity is positively related to teachers' intentions to share OER. Reciprocity can also be considered as a cost: teachers may feel they are being exploited when they share their own OER without receiving anything in return. In this study, however, we consider reciprocity to be a possible positive determinant of sharing behaviour. The possibility of exploitation will be taken into account by looking at the impact of trust on sharing, which we discuss in the next section.

Trust and Sharing OER

Social exchange theory predicts that, ultimately, trust plays a role in the decision to perform a certain behaviour. Several authors (Mayer et al. 1995; Jones and George 1998; Dirks and Ferrin 2001; Chiu et al. 2006) state that trust is an important factor in cooperation and knowledge sharing. Mayer et al. (1995) define trust as the "willingness of a party to be vulnerable." This can be interpreted in several ways: Renzl (2008) considers the possible loss of an individual's unique competencies as a result of knowledge sharing to be an important factor which hinders knowledge sharing. We believe that by sharing OER, an individual teacher may not risk losing his or her uniqueness, but we think trust may affect OER-sharing behaviour in other ways. In line with Mayer et al.'s view of trust as a vulnerability issue, we believe trust may play a key role in people's willingness to share OER. The importance of trust has thus far received little attention in the knowledge-sharing literature (Wang and Noe 2010).

In this study, we consider trust in relation with reciprocity and with reputation. As both reputation and reciprocity can be considered as extrinsic factors, the satisfaction of these motivators depends on a third party, in this case other teachers or even the school management. We thus believe that the impact reputation and reciprocity have on teachers' intentions to share OER will strongly depend on the trust teachers have that their colleagues will somehow contribute to the satisfaction of these extrinsic factors (i.e., enhance their reputation and exchange OER). If teachers believe that sharing OER will not be noticed by other teachers,

they will probably be less likely to share OER because this will not strengthen their reputation. Similarly, if teachers share because of reciprocal reasons, they will be less inclined to do so if they expect that other teachers will not share their OER as well. This corresponds with the work of Empson (2001), who found that fear of exploitation is an important determinant of knowledge sharing: not getting something in return will result in a lower intention to share knowledge.

The Current Study

In the current study, we try to identify determinants of a teacher's intention to share OER, in order to find out how OER-sharing behaviour can be stimulated. In general, it is expected that teachers are more likely to share OER when the perceived benefits outweigh the costs. Trust will strengthen the relationship between rewards and intention to share. This results in the following hypotheses:

> *Hypothesis 1:* Self-efficacy, technological cost and development cost will be negatively related with teachers' intentions to share OER.

> *Hypothesis 2:* Altruism, reputation and reciprocity will be positively related with teachers' intentions to share OER.

> *Hypothesis 3:* The relationships of reputation and reciprocity will be moderated by trust. As trust increases, these relationships will become stronger.

Method

Sample and Procedure

Teachers from primary, secondary and higher education were contacted through an online panel to participate in our study ($N = 1,568$). The distribution of our sample with respect to education type, age and gender is shown in Table 13.1. Based on information from 2009 (CBS 2009), we found the deviations from the Dutch teacher population distribution to be relatively small.

Table 13.1: Distribution of the study sample with respect to teacher age and gender, by education type

Education type	Number in sample	% Women	Median age in years (standard deviation)
Primary	629	82.0	42.38 (12.73)
Secondary	819	55.2	44.77 (12.40)
Higher	120	49.2	41.73 (13.00)

Measures

The dependent variable (i.e., teachers' intentions to share OER) was measured using one item that could be rated on a seven-point response scale ranging from fully agree to fully disagree. The item was: "When I develop digital learning materials or when I adapt existing materials, I would freely share them with others." The other items, which measure different aspects of costs, rewards and trust related to sharing OER, are shown in Table 13.2.

For technological cost, altruism, reputation and reciprocity scale scores were calculated by averaging the scores on the constituting items. The internal consistency (Cronbach's alpha) for these scales is reported in Table 13.3 and was considered satisfactory.

Table 13.2: Overview of the independent variables used in this study

Note: The dimensions under study are marked in bold. Items tapping into these dimensions are numbered 1 to 13.

Item no.	Dimension/Item
	SELF-EFFICACY
1	The OER I develop would have an added value for other teachers
2	I have the necessary ICT skills to develop OER
	TECHNOLOGICAL COST
3	Sharing OER on the Internet (e.g., on a website or through Wikiwijs) would require little effort
4	Sharing OER with my colleagues at school would require little effort
	DEVELOPMENT COST
5	It will take a lot of time to develop and share OER
	ALTRUISM
6	I like to share OER with others
7	Sharing OER with others would make me feel good about myself
	REPUTATION
8	Other teachers will show me more respect when I share OER
9	My reputation will improve when I share OER with other teachers
	RECIPROCITY
10	Other teachers share OER and therefore I feel I should do the same
11	Other teachers' OER is very helpful for my teaching activities and therefore I should share my own materials as well
	TRUST
12	I expect that most other teachers would share their OER
13	I expect that other teachers would show their appreciation when I share my OER with them

Analysis

The variables in this study were standardised for analysis. School type was recoded into two dummy variables. Subsequently, a hierarchical regression analysis was performed with: in a first step, the control variables (gender, age and school type); in the second step, the independent variables; and in the third step, the interactions (trust × reputation and trust × reciprocity).

Participants whose predicted value, based on the final model, was more than three standard deviations away from the observed value, were considered as outliers. In total, the responses of 144 participants were excluded in this way.

The analysis was then repeated without these participants and reported in the results section. Descriptive statistics of the sample on the variables under study are reported in Table 13.3.

Table 13.3: Descriptive statistics of the variables under study

Note: Scores can vary between 1 and 7. The upper right part of the matrix contains bivariate correlations between the variables.[a]

Variable	M	SD	α	self-efficacy 1	self-efficacy 2	technological cost	development cost	altruism	reputation	reciprocity	trust 1	trust 2
intention	2.47	1.48		.59	.14	.40	.14	.61	.22	.28	.45	.15
self-efficacy 1	2.93	1.39			.33	.45	.10	.47	.31	.26	.30	.24
self-efficacy 2	3.86	1.80				.53	-.19	.13	.16	.11	-.01*	.09
technological cost	3.19	1.42	.70				-.04*	.44	.23	.30	.28	.15
development cost	3.23	1.73	.90					.20	.09	.07	.13	.07
altruism	2.97	1.38	.90						.47	.43	.54	.31
reputation	3.87	1.47	.83							.47	.37	.58
reciprocity	3.98	1.53	.76								.54	.43
trust 1	3.42	1.50										.37
trust 2	3.97	1.61										

a All correlations are significant at the .05 level, except those marked with an *.

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Results

The results of the hierarchical regression are given in Table 13.4. The final model explained 54.7 per cent of the variance in intention to share ($F(15, 1408) = 115.64$, $p < .001$). The control variables (gender, school type and age) together explain 1.3 per cent of the variance in intention to share. In particular, there is a negative correlation between age and the intention to share OER with other teachers ($\beta = -.09$, $p < .001$). As for school type, there was a small significant difference between primary and secondary education ($\beta = .05$, $p = .02$), indicating that teachers in secondary education seem more willing to share OER than teachers in primary education. Differences between men and women with regard to the intention to share digital learning materials were non-significant.

Of the independent variables in the model, three variables were non-significant. Development cost, reciprocity, and whether teachers have the necessary knowledge and skills to develop digital learning materials did not seem to impact on teachers' intentions to share OER.

Of the remaining variables, the expectations that one's developed material would be useful for other teachers and altruism were the most important predictors of sharing intention, as indicated by the relatively high standardised regression coefficients.

Table 13.4: Hierarchical regression in three steps, with intention to share OER as the dependent variable[a]

Predictor	ΔR^2	β	t/Fchange	p
Step 1	.013		5.76	<.001
gender		.02	.70	.49
age		-.09	-4.54	<.001
secondary*		.05	2.33	.02
higher*		-.01	-.58	.56
Step 2	.535		187.04	<.001
self-efficacy 1		.42	18.98	<.001
self-efficacy 2		-.02	-.93	.35
technological cost		.11	4.56	<.001
development cost		.01	.66	.51
altruism		.32	12.24	<.001
reputation		-.06	-2.27	.02
reciprocity		-.01	-.59	.56
trust 1		.14	5.65	<.001
trust 2		-.07	-3.06	<.001
Step 3	.000		.78	.46
trust 1 × reciprocity		.02	1.09	.27
trust 1 × reputation		-.02	-1.04	.30

a Education type was analysed with two dummy variables marked by a *. The reference category was primary education. Both secondary and higher education are thus contrasted with primary education.

Technological costs exhibited the expected relationship with intention as well: as teachers expect sharing OER will require little effort, they will be more inclined to share.

Contrary to our hypothesis, reputation had a negative relationship with intention, indicating that as teachers expect they will get more respect when they share, their intention to do so will actually decrease.

Both trust with respect to reputation and trust with respect to reciprocity affected teachers' intentions to share OER. Teachers who believe their colleagues will share as well (trust in reciprocity) have a higher intention to share. On the other hand, teachers who believe their colleagues will show them more respect when they share OER seem less inclined to actually share.

In the third step of the regression, two interaction terms were added. Adding these terms did not significantly increase the explained variance in intention to share. None of the tested interactions was significant.

Discussion

The impacts of our conjectured determinants of intention to share OER are discussed below. As we expected that costs, rewards and trust would be important predictors of teachers' intentions to share OER, the discussion is organised according to these dimensions.

Costs

Only two of the four expected costs were significant predictors of teachers' intentions to share. When teachers believe their OER could have an added value for other teachers as well, they will be more inclined to share OER. We believe this perceived added value depends on the confidence teachers have in their pedagogical and ICT skills. Therefore, knowledge self-efficacy was considered as a cost, as a lack of self-efficacy would require a substantial investment on the part of the teacher. This first aspect of knowledge self-efficacy was the most important predictor of teachers' intentions to share OER. The more teachers expect their OER could be useful for their colleagues as well, the more they will be inclined to share.

Technological costs have an impact on the intention to share as well. Although the impact of technological cost was limited, it seems that if teachers expect that sharing OER would take little effort, they will be more likely to share. Our hypothesis regarding the impact of costs on the intention to share is, however, only partially confirmed. The development costs seemed to have no impact on teachers' intentions to share. Although this cost may seem similar to the technological cost, it is different in two important ways.

- The development cost is an investment teachers have to make regardless of their intention to share. In order to be effective teachers, they will probably have to develop some teaching materials themselves, which could be made available as OER.

  The technological cost may require other skills than those necessary to develop OER. Therefore it is not surprising that only the technological cost is considered when teachers decide to share their

OER. Moreover, as we have argued in the introduction, teachers get no competitive (or financial) advantage by keeping educational resources for themselves. As the investment in the development of the educational resources has already been made, teachers may as well share their OER with other teachers, as long as this can be done with a limited additional effort.

The second dimension of knowledge self-efficacy we have considered, having the necessary skills to develop OER, did not have an impact on teachers' intentions to share. Although this factor may not influence the intention to share, possessing the required skills to develop OER is obviously a necessary condition in order for a teacher to be able to share. The descriptive statistics in Table 13.3 show that teachers have average scores on the self-efficacy variable, indicating that teachers' perceived efficacy with regard to the development of OER is only average.

Rewards

As expected, altruism is positively correlated with the intention of sharing OER. Teachers who like the activity of sharing OER as such are more inclined to actually share. Therefore, sharing does not have to be motivated by financial incentives or external pressure. Sharing in itself, with the positive emotions teachers experience when sharing, seems to be a sufficient motivation for them to show this behaviour. More importantly, altruism was found to be the second most important predictor of teachers' intentions to share OER.

As a second possible reward for sharing OER, we considered the positive impact that sharing OER could have on a teacher's reputation. If the shared OER are valued by other colleagues, this could possibly be beneficial for the respect a teacher receives. The results indicate that there is a significant relationship between the expected impact of sharing OER on reputation and intention to share. This impact is, however, in the opposite direction of what was expected. As teachers indicate that they would get more respect when they share OER, their likelihood to actually share seems to decrease. As the correlation between reputation and intention is positive (in contrast with the regression coefficient), a suppression effect seems responsible for this result. Although the impact of reputation was relatively limited, the unexpected direction of its relationship could not be attributed to chance.

The relationship between reputation and intention to share is hard to explain from our current results and might possibly be due to a third factor that was not measured in this study. Deci and Ryan (1985) believe that extrinsic rewards (e.g., monetary incentives or a reputation increase) can have a negative impact on intrinsic motivation. The limited effect of reputation on intention could thus be due to a lower intrinsic motivation to share OER of teachers who share for reasons related to their reputation. This particular effect was found in a study comparing different types of feedback (e.g., a thank-you message versus a relative ranking of contributors) in an online knowledge-sharing system (Cheshire and Antin 2008). The study showed that intrinsically motivated contributors were not affected by the feedback mechanisms (i.e., their number of contributions did not depend on the type of feedback) as compared to extrinsically motivated contributors who were affected by the feedback type.

Finally, the impact of reciprocity on the intention to share was investigated. The analysis showed that the relationship between reciprocity and intention was not significant. Controlling for other variables in the model, the intention to share does not seem to depend on the fact that other teachers share as well. The fact that other teachers' OER could be an added value for one's own teaching practice does not seem to be an incentive for teachers to share OER. Both this finding and the results regarding the impact of reputation are in line with research on teachers' motivation (De Cooman et al. 2007), which found that teachers are mainly driven by intrinsic factors rather than extrinsic rewards. Moreover, other studies on knowledge-sharing behaviour have failed to show an effect of reciprocity as well (e.g., Lin et al. 2009).

Trust

Trust was introduced in this study as a moderator of the relationship between rewards and intention. Both aspects of trust measured were also found to have a main effect on teachers' intentions to share OER. The confidence that other teachers would share their educational resources as well has a positive correlation with the intention to share. This may at first seem inconsistent with the results concerning reciprocity, which showed that the intention of teachers to share does not depend on the sharing behaviour of other teachers. Reciprocity, however, must be considered as a reason why teachers may or may not share OER. Trust with respect to reciprocity, on the other hand, indicates to what extent the necessary conditions are met for reciprocity to play a role in teachers' intentions to share. In the knowledge-sharing literature, trust often refers to an aspect of the organisational climate. Our measure of trust could possibly in part measure this general organisational trust factor as well, hereby inflating the impact of trust with respect to reciprocity.

The second aspect of trust that was measured is the expectations teachers have that other teacher will actually show their appreciation for the shared OER. This was considered as trust regarding the reputation. Contrary to our hypothesis, this variable showed a negative association with the intention to share. The intention to share decreased as teachers' trust in receiving appreciation for their OER increased. Correlations between this aspect of trust and reputation were fairly high, indicating that participants interpreted these items similarly, even though the trust item stressed the aspect of actually receiving respect or recognition.

The Moderating Role of Trust in the Relationship Between Rewards and Sharing

Our data do not support the importance of trust in the relationship between rewards and intention to share. Almost no additional variance was explained when the interactions were added to the model. As reciprocity played no significant role in explaining teachers' intentions, it is of little surprise that the impact of reciprocity does not depend on trust. The fact that we failed to show a significant moderating effect of trust with respect to reputation could be due to the limited impact of reputation as such or, as already mentioned, to the operationalisation of this aspect of trust which was similar to the reputation items.

Implications for Practice and Conclusions

Knowledge of the key determinants of sharing OER by teachers is crucial for initiatives such as Wikiwijs. Knowing why teachers voluntarily share OER can help with creating Web-based environments and strategic policies that foster sharing behaviour. Websites such as www.Wikiwijs.nl could use status points to enhance reputation, or users could be encouraged to evaluate learning materials, thereby showing recognition for the shared materials.

However, although such tools may seem favourable from an intuitive point of view, the results of this study show that such a strategy may not be very effective in promoting the sharing behaviour of most teachers. An improved reputation even seems to have an adverse effect on teachers' intentions to share OER.

The most important predictor in the model proved to be knowledge self-efficacy. When teachers believe that their OER has an added value for others, they will be more inclined to share. In this sense, we believe that online tools that show the appreciation for a certain resource may contribute to the visibility of the resource's use. Next to the download statistics indicating how often a document or image has been downloaded, attention should be paid to the evaluation of the material itself. If teachers notice that their shared OER are also used and appreciated, they will likely be more inclined to share their learning materials in the future. This may seem in contradiction with the finding that reputation has a negative effect on sharing behaviour. However, in this case the OER itself is evaluated and not the developer. The appreciation should therefore instead be shown for the OER itself rather than in the form of status points for the teacher who developed them.

Implications for Practice

It seems that altruistic motives play a key role in teachers' intentions to share OER. This implies that teachers enjoy the behaviour as such, without the need for any extrinsic incentives. It must also be noted that some scholars believe that providing extrinsic motivators to intrinsically motivated people can have a detrimental effect on motivation. Our results therefore suggest that motivating teachers to share OER should focus on intrinsic aspects of the behaviour. An interesting finding, though, is that trust in other teachers' sharing behaviour seems to impact intention as well. Although the impact of that was more limited, it was the third most important predictor. Moreover, as our descriptive statistics suggest, while most teachers have a strong intention to share OER, they nonetheless seem to have less confidence in their colleagues with respect to sharing OER.

We believe this discrepancy should be made apparent in order to motivate teachers to share their OER. We believe that the more teachers perceive that other teachers share as well, the more they will be inclined to share themselves. In other words, sharing OER will thus be increasingly considered as the norm. OER initiatives should therefore try showing that there is a great willingness to share. Websites could use tools to indicate how much new material is added by fellow teachers in a given period.

Although the costs involved in sharing OER seemed to play only a limited role, our results suggest that the more teachers perceive sharing OER to be effortless, the

more they will be inclined to share. Online repositories for OER, such as Wikiwijs, may help contribute to the ease of spreading OER, but should also be developed in such a way that uploading new materials is relatively effortless.

Finally, sufficient ICT and pedagogical knowledge and skills are necessary conditions to enable teachers to develop OER. Although these skills did not seem to correlate with teachers intentions to share OER, they are still a key determinant in the development of digital educational resources. In addition, previous research regarding the use of digital learning materials showed that self-efficacy is an important determinant of the use of digital learning materials in teaching practice (Kreijns et al. 2011; Van Acker et al. 2011). Teachers' knowledge and skills with respect to developing and using OER should thus receive the necessary attention as well.

In conclusion, it seems that teachers' intention to share OER is determined mainly by intrinsic factors such as altruism. Extrinsic reward systems may therefore yield limited results with respect to increasing teachers' willingness to share OER, or may even have an adverse impact.

Limitations and Future Research

The aim of our study was to find possible moderating effects of trust on the relationship between several potential determinants of teachers' intention to share OER. Although a quantitative approach seems best suited to test this kind of hypotheses, we believe the exploratory character of this study could also have benefited from a more qualitative approach. Therefore, we suggest conducting further studies based on social exchange theory, to explore other determinants of OER-sharing intentions. Moreover, such a qualitative approach could also help to explain some of the unexpected findings from our study, such as the negative relationship between reputation and intention to share.

Finally, although our results show that trust is involved in the decision to share OER, future research could focus on other aspects of trust that could possibly impact on sharing behaviour. We believe that one issue that deserves more attention is the vulnerability aspect, with respect to knowledge and skills, to which teachers are exposed when they share educational resources.

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