Master thesis – Educational Science and Technology

Exploring opportunities for digital sharing of academic results: preferences of parents and teachers

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1. Abstract

Technology supporting communication is self-evident. However, in Dutch primary schools, it does not seem self-explanatory to digitally communicate academic (Cito and method) results with parents. The findings of this study show that there is a foundation for sharing academic results through a digital platform, like *Ouderportaal* from ParnasSys.
The results of this explorative field study with the quantitative data from two questionnaires filled in by 182 teachers and 99 parents show that both parents and teachers want more digital sharing of academic results as opposed to merely face-to-face communication.

This study explores the opportunity for the OP to grow and improve since more parents and teachers would like to use digital media for sharing and receiving academic results. Moreover, digitalization and automatization of sharing results with learning goals, and example questions could reduce the workload for teachers and enhance the satisfaction of parents.
Key words: Primaryschool, education, parents, teachers, digital communication, sharing academic results, digital media

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2. Problem statement

Topicus is the owner of the Dutch student monitoring system (SMS) ParnasSys. This SMS system allows primary schools to monitor students' results, including standardized tests, such as Cito, curriculum-based tests, classroom observations and diagnostic conversations. ParnasSys is used by 82% of the primary schools in the Netherlands. Besides the SMS, ParnasSys has several additional optional products that schools can use (fig. 5, Appendix A). The product the current study focusses on is "Ouderportaal" (OP, 'Parent Portal' in English).

OP is an application that can be customized by the school, by (de)activating each of twelve different modules. For example, schools can decide to share results on standardized tests, results on curriculum-based tests, notes, absences and other relevant information about students directly with their parents. An estimated 32% of the Dutch primary schools using ParnasSys currently use OP. It appears that the *results* page, (which contains the curriculum-based and standardized test sharing module) is by far the most popular page among parents: from the 651.088 parents who have access to OP, 192.952 unique visitors logged in from March 15th to April 15th 2019) and about 92% of those parents opened the page with academic results (see Appendix B). This is remarkable, since half of the schools using OP have not activated the result page module of the OP. So, parents who do not have access to the result page barley use the OP.

Although this page seems quite popular among parents, schools have been complaining about the way academic results (method and non-method results) are shared. This is due to the complexity of sharing data with parents and the limited range of possibilities of sharing different results and notes with parents. It is now only possible to share isolated grades with OP without any context. Based on informal evaluations and customer support feedback from the ParnasSys helpdesk, it appears that both parents and teachers (users of OP) lack context in the current presentation of academic results and that this hinders the communication about these results. Research shows that communication could have a positive influence on students' education. It appears that if parents experience parent-teacher communication as good, it will increase the intrinsic motivation of a child and increase academic results (Bardroff, Zieger & Tan, 2012; Seitsinger, Felner, Brand & Burns, 2008).

Topicus therefore expressed the wish to enhance their knowledge about digital parent-teacher communication related to academic results. They want to know what parents' and

teachers' wishes are according to digital result communication, and whether OP can help to improve digital communication. Topicus would like to use this knowledge for improving the curriculum-based and standardized test results page from OP.

This led to the following research question;
MQ: *Is there foundation for sharing academic results through a digital platform, and if there is in what way can Topicus improve Ouderportaal, so that it optimizes parents' and teachers' satisfaction of digital sharing academic results?*

3. Theoretical framework

Parent-teacher communication in primary schools has proven correlations with students' achievements (Goodall, 2016; Smit, Sluiter, & Driessen, 2006; Ho, Hung, & Cheng, 2013; (Thompson, Mazer, & Grady, 2015; Graham-Clay, 2005). Previous studies discovered many advantages when good, effective and enough teacher-parent communication about students' results takes place. However, what media should be used for this communication, and what kind of communication fits this media best has not been explored (Bordalba & Bochaca, 2019). Goodall (2016) suggests that combining different media for parent-teacher communication, traditional as well as digital, in order to take advantages to the strengths of both kinds of media would be ideal. At this point, some schools only use face-to-face communication, whereas other schools also use digital communication (Bordalba & Bochaca, 2019). This study focusses on specific communication forms about academic results. Since there are two major, common types of student achievement in primary education in The Netherlands, a distinction was made between Cito (standardized tests) and curriculum material tests. To understand and interpret teachers' and parents' preferences regarding sharing academic results, it is essential to know the common ways of sharing academic results. Also, it is necessary to explore the willingness of teachers and parents to use digital devices to communicate academic results, and it will be beneficial to explore existing literature on (digital) parent-teacher communication.

3.1 How schools mostly communicate academic results

Since 2015, it is mandatory for Dutch primary schools to use a student monitoring system (SMS) to follow the children's academic results in mathematics and language. However, there are no requirements for (digital) parent-teacher communication according to the Dutch government (Rijksoverheid, 2015). It appears that there is a growing trend in the usage of digital devices for parent-teacher communication on the assumption that increased communication will enhance children's academic results (Thompson et al., 2015; Bordalba & Bochaca, 2019). Nevertheless, there seem to be major differences in this trend between different schools and school systems. For example, Olmstead (2013) explored the use of social media in American parent-teacher communication. Two-third of the interviewed parents indicated that they use individual social media such as WhatsApp to communicate with the teachers of their children. However, Dutch research concluded that only 30% of parents use social media for communication with teachers (Bokdam, Tom, Berger, Smit, &

Rens, 2014). Unfortunately, it is unclear which content is (mostly) communicated via social media. Because of the likely inequality of school systems between different countries the theoretical framework of this study mostly focuses on research evidence from The Netherlands.

Bokdam et al. (2014) investigated among 253 primary school teachers how they communicate with parents. In Table 1, the three least common and five most common ways of communication between parents and teachers according to 253 teachers who cooperated in this research are shown (Bokdam et al., 2014). It is not surprising that all respondents indicate that they use face-to-face communication. In the Netherlands, so-called 'ten-minute conversations' are often planned two or three times a year, related to the school reports or grade cards. In these conversations, parents and teachers discuss children's school results and progress within about ten minutes (hence the name). Also, Table 1 shows that in 2014 91% of the schools were using paper letters. Furthermore, the majority (67%) of the schools did not use digital parent platforms to communicate with parents. However, it must be noted this research was published five years ago, and technological innovations probably will lead to different possibilities and use nowadays. Also, what the content was from the communication is not mentioned in the research, so it is impossible to say whether the media is used for sharing academic results as well.

Table 1. *Dutch primary schoolteachers' communication methods*

Way of communication	Percentage of teachers
Ten-minute conversation about progress (face-to-face)	100%
Conversations about used action plans (face-to-face)	94%
Parent information meetings (face-to-face)	93%
Paper letters	91%
E-mail (digital contact)	89%
Teachers visiting the children's home (face-to-face)	35%
Digital parent platform (digital contact)	33%
Social media (digital contact)	30%

Note: Not all results from the original source are shown. *Source:* Bokdam et al. (2014)

3.2 Suitability of using digital devices for parent-teacher communication

There is a growing emphasis on using digital devices for parent-teacher communication assuming that it has numerous benefits compared to non-digital communication (Bokdam et al., 2018; Thompson, 2008; Bordalba & Bochaca, 2019). Convenience, immediacy, and efficiency are heralded as core strengths of digital communication tools such as online platforms, and email compared to face-to-face, phone, and paper contact (Bordalba & Bochaca, 2019). In addition, integrating digital communication in the parent-teacher communication system can help schools to communicate to a broad parent community without a lot of effort (Graham-Clay, 2005). Besides, parents are willing and even prefer the use of lean digital devices (only text or pictures) to receive information about instrumental topics (e.g. academic results) from teachers. They state it to be convenient and easy to use (Thompson, et al., 2015).

However, various research showed that parents and teachers tend to use lean digital media (like OP) mostly for communicating simple and practical information instead of communication about a student's personal development and growth (Bordalba & Bochaca, 2019; Vogels, 2002; Smit & Driessen, 2017). So, although communication with digital devices could be suitable for sharing academic results, and parents are willing to use digital devices for communication with teachers, little is known about the reasons for an apparent lack of digital communication about academic achievement. And little is known about what digital media would be suitable for what kind of communication (Bordalba & Bochaca, 2019). Bordalba and Bochaca (2019) advise teachers to see parents as partners for digital communication and suggest rich media (video messages) as a possible solution since teachers are primarily concerned about the characteristics of the context of the communication. Thompson (2008) suggests that digital messages with verbal cues and context decrease the chance of misinterpretation and misunderstandings. However, what kind of context should (not) be added in order to reduce misinterpretation is not mentioned. Furthermore, it appears that the preference for face-to-face communication is related to a lack of confidence of teachers using digital communication resources. Bordalba and Bochaca (2019) show that teachers blame their lack of experience with digital media to their age. On the other hand, teachers also lack confidence in parents: teachers complain about parents lacking digital skills and losing their passwords, leading to more workload for teachers since they are confronted with those problems.

Despite the barriers that can be identified, digital communication also seems to have clear advantages, and could probably also be used for sharing academic results. However, digital media for communication is not self-evident to use for a primary school although it seems to give opportunities for improving parent-teacher communication (Goodall, 2016). Olmstead (2013) suggest that this might be due to the lack of research in this area.

It is uncertain to say whether digital communication is ideal for sharing academic results. Knowledge about reducing chances of misinterpretation related to sharing academic results digitally is necessary to give an answer to the question whether digital communication can be suitable for communication about academic results, and if so: how to optimize OP.

3.3 Sharing academic results

Theories about how to communicate the academic results of a child vary in literature. There are different perspectives about the **frequency** of sharing as well as the **expectations** from parents and teachers according to sharing academic results.

3.3.1 Frequency

Communication between parents and teachers has been related to the improvement of students' results (Graham-Clay, 2005; Kraft & Rogers, 2015). On average, parents and primary school teachers have face-to-face contact 6–10 times a year (Bokdam et al., 2014; Boonstra, 2018; Thomson, 2008). Smit, et al., (2006) found that the social-economic status of parents is related to the frequency of the contact.

To enhance the contact between parents and teachers, scholars advise weekly or even constant insight for parents in students results (Graham-Clay, 2005; Kraft & Rogers, 2015). Constant insight in results is possible with OP if schools activate the test results page. All the results added in ParnasSys are then automatically shared with parents.

It appears that giving parents a constant and transparent insight into the academic results of their child reinforces the parent-teacher relationship in terms of trust and respect. This enhances the students' learning motivation which can have a positive effect on academic results (Graham-Clay, 2005). According to Kraft and Rogers (2015), a weekly message to parents emphasizing behaviors students need to adopt in order to improve their results reduces the number of dropout students with 41% compared to students whose parents did not receive those messages. Graham-Clay (2005) found in her research study that many scholars have conducted research on short messages (notes or videos) to communicate on a daily or weekly base with parents. The results of these studies show that a short note can be sufficient for

building a strong relationship between teachers and parents as long as the communication is frequent enough to engage parents and to monitor students' success (Graham-Clay, 2005).

3.3.2 Teachers' and parents' perspectives

Primary schools share academic results with parents in various ways. Some schools use face-to-face contact, where other schools use digital devices or both. There might not be 'one perfect approach' to sharing academic results since schools are different, parents have different expectations and teachers have different perspectives on communication and sharing results (Adriaens, Grinsven, Woud & Westerik, 2016). Therefore, it is relevant to explore these expectations and perspectives in order to provide schools with guidelines in selecting communication channels and the frequency of sharing academic results.

Parents. Parents' expectations about teacher-parent communication in general differ, depending on e.g. socio-economic status (SES) and religion (Smit, et al., 2006; Vogels, 2002). Vogels (2002) illustrates that Dutch religious parents with a high SES are on average more critical about the information they receive and less satisfied with the communication than Dutch parents with a lower educational and/or non-religious background. Hornby and Lafaele (2011) found that parents with a high level of education (university/university of applied science) have a different perspective on parent-teacher communication than parents with a lower level of education. Parents with a higher SES focus on interconnectedness with teachers, in contrast to working-class parents who experience that school and home relationships are and should be separated since they are aware of differences between them and the teacher. Moreover, working-class parents are less likely to have access to resources, and more likely to have problems associated with language, culture or childcare. Smit, et al., (2006) found that parents with a lower SES have on average communicate less with teachers than parents with a higher SES. However, maintaining good communication seems extremely important for those children as well (Smit, et al., 2006). Perspectives and expectations from parents can significantly differ based on background characteristics like religious and educational backgrounds. Background characteristics can have an influence on the frequency of the communication, whether it has an influence on the preferred content of the communication about academic results is not known.

Teachers. It appears that the perspectives of teachers on parent-teacher communication are mainly influenced by cultural differences between parents and teachers,

value differences between parents and teachers and workload (Colombo, 2004; Adriaens, et al., 2016). Teachers and parents with similar values, tend to have more positive relationships than teachers and parents with (widely) different values since teachers are more likely to understand the perspectives of parents with values that are close to their own (Kim, 2009). Digital communication could fade cultural differences since it has more distance and can be more general and computerized.

Workload is another factor influencing the teachers' communication and frequency of sharing results. The Ministry of Education in the Netherlands stated that teachers experience a high workload; teachers graded their workload an eight out of ten (Adriaens, et al., 2016). More than half of the participating teachers (55%) mentioned experiencing a high workload due to parents' high demands, and receiving many questions from parents as one of the factors negatively influencing their work. One-third of those teachers mentioned that the high demands parents have is in their top three factors influencing work negatively. Digital communication has the potential to reduce workload, since sharing results, contexts and learning goals could be computerized and this possibly reduces questions parents have about grades.

Digital media used to share academic results should serve a diversity of users with different expectations, values, cultures, and languages. Schools too often choose a "one size fits all" communication approach, even though parents' and teachers' expectations and backgrounds often differ significantly (Tom, Berger, Smit, and Rens, 2014). However, previous research was mainly focused on the different expectations and perspectives with regard to teacher-parent relationships as well as general communication. Therefore, OP should provide sufficient options for schools to customize the application for their school, their teachers and their parent population. Also, it seems valuable to facilitate the possibility to frequently share short messages to enhance parent-teacher contact. If schools would like to improve their parent-teacher relationships by enhancing the frequency of sharing academic results and context, OP could facilitate this.

The current research also aims to explore whether the numbers from Bokdam et al. (2014) about the communication methods Dutch schools use are still accurate since the prior research is five years old, and the use of digital communication in primary schools has been growing (Thompson, et al., 2015).

In general, the focus of this study is to find an answer to the main question: *Is there foundation for sharing academic results through a digital platform, and if there is in what way can Topicus improve Ouderportaal, so that it optimizes parents' and teachers' satisfaction of digital sharing academic results?*

Since there are knowledge gaps about how academic results are communicated nowadays, how the chance of misinterpretation when communicating academic results with parents could be reduced and what the exact wishes of parents and teachers who are currently using OP are regarding this tool, the following sub-questions have been formulated:

Sub-question 1: *How and how frequently are academic results currently shared with parents?* ***Sub-question 2:*** *To what extent are teachers and parents satisfied with the current way and frequency of sharing academic results?*
Sub-question 3: *What are parents' and teachers' preferences regarding the content and frequency when it comes to digitally sharing academic results?*

4. Method

In this chapter, the method, respondents, and results of the questionnaire are shown. The method section contains a description of the questionnaire and the respondents.

4.1 Research design

The method used in this research is an explorative field study. An explorative design is a suitable approach because there are not many studies about the way primary school teachers share results and communicate with parents (Bordalba & Bochaca, 2019). The main purpose of this study is to gain insight into teacher-parent communication about children's academic achievements. This is done by giving answers on the sub-questions; in what way parents and teachers are communicating about the child's results, and whether parents and teachers are content with this way of communicating. The quantitative data will be collected using a questionnaire.

4.2 Materials

In order to explore the way student achievement is currently shared, whether teachers and parents are content with this way, and to identify preferences from both perspectives, two questionnaires were developed: one intended for parents, and one for teachers. The questionnaires were designed using information derived from literature in combination with drafts, and wishes from users merged by the service desk from ParnasSys. The goal of this research is to find communication preferences about children's school achievements.

In order to design the questionnaire, the descriptive survey method was used (Boudah, 2011). This fits the current study since it helps to provide a broad picture of the parent-teacher communication in primary schools (Boudah, 2011).

The questionnaires contain items about frequency, communication methods and the content of the communication. The academic results include the results of Cito and method questions. Since there are two major, common types of student achievements in primary education in The Netherlands, a distinction was made between Cito (standardized tests) and curriculum material tests. Cito tests are less frequently administered than method tests.

The questionnaire contains some other questions about ParnasSys as well, those questions are not relevant for this study and not mentioned any further. Table 2 shows which items are related to which topics. Appendix C shows the translated questions used in the questionnaire. In order to enable comparisons between answers from parents and teachers, the

two questionnaires are as much alike as possible. All the questions were cross-checked and discussed with two experts from Topicus, and two experts from the University of Twente to check their relevance. After this, the questionnaire was tested with two parents and two teachers, which led to two questions being rephrased.

The link to the digital questionnaire was shared with parents and teachers via various social media channels such as Facebook, Twitter, and LinkedIn. The respondents could participate in the research by using the link or the quick response code (QR) to go to the website where the questionnaire was published. Also, flyers were used to promote the study (Appendix D) during the Nationale onderwijs tentoonstelling, an educational event.

Table 2, *Construction questionnaire questions*

Subjects		Example questions/statements teacher and parent questionnaire	Answer options
Frequency	Teacher	How often do you share results with parents, and what do you think about the frequency of sharing result with parents?	1. Direct when known 2. Every month the average grades 3. Every month all the grades 4. A few times a year 5. One time a year 6. Never
	Parent	How many times would you like to receive information about the results?	
Way of communication	Teacher	How are you sharing the results from your students with parents?	1. Online platform for all the parents of the same grade 2. Online platform for parents of one child 3. Email 4. Conversation with appointment 5. Conversation without appointment 6. On paper 7. No sharing or don't know
	Parent	If you are having a question for the teacher of your child, which medium would you most probably use to ask this question?	
Content of communication	Teacher	I think the results are clear if only grades are showed.	1. True 2. False Possible to add explanation
	Parent	I like it if I can always see the results from my child online.	

4.3 Procedure

Before the collection of data started, the BMS Ethics Committee of the University of Twente was asked permission for conducting this study. When respondents started filling in the questionnaire, they were first informed about the goal. Subsequently the respondents were asked whether they fit the conditions of the research. Conditions for the teachers to participate were: a minimum of one-year work experience, currently working in a Dutch primary school, and having experienced at least two parent-teacher conversations about the academic results of a child. The conditions for the parents were: a minimum of one child currently in a Dutch primary school, and having participated in at least two parent-teacher conversations about the

(academic) results of their child. If the respondents fitted the conditions, they were asked to answer the questions. At the end of the questionnaire, the demographic details were asked. Finally, the respondents were thanked and asked whether they wanted to stay informed about the results of this study via e-mail. The questionnaire took approximately 15 minutes to fill in.

4.4 Respondents

The questionnaire was open to respondents from 14 January 2019 to 1 February 2019. After the questionnaire had been closed for response, 381 teachers and 186 parents filled in the questionnaire. Out of those respondents, 182 teachers, and 99 parents filled in the questionnaire for 100%. Most teachers who did not finish the questionnaire stopped filling in the questionnaire at 17% (they stopped after the second matrix question, about how many times they would like results to be shared). Most parents who did not finish the questionnaire did this at 3% (they stopped after or during the first matrix, question one). For the analyses, only data from fully completed questionnaires are used. A possible explanation why questionnaires were not completed could be the challenging interface of the Matrix from the questionnaire on mobile phones.

The age range of the teachers is 21 to 65 years old (*M=35.2, SD=10.7)*. The age range of the parents is 30 to 59 years old (*M=40.7, SD=6.4)*. Other characteristics of the respondents are described in Table 3 and Table 4. Note that parents were requested to fill in the questionnaire about one child of their choice.

Table 3, *Sample Characteristics of Teachers (N = 182)*

Characteristics of teachers		***N***	***%***
Grade teaching	Lower grade teacher (grade 1, 2, 3)	91	31,2%
	Middle grade teacher (grade 4,5)	84	28.8%
	Higher grade teacher (grade 6,7,8)	117	40.1%
Work experience in years	< 2 years	29	16.1%
	2 - 5 years	49	27.2%
	6 - 10 years	26	14.4%
	11 – 20 years	48	26.7%
	> 20 years	28	15.6%
Age	< 25 years	38	20.1%
	25 – 30 years	49	26.9%
	31 – 41 years	43	23.6%
	> 41 years	50	27.5%
Gender	Male	8	4.4%
	Female	72	95.6%

Table 4, *Sample Characteristics of Parents (N = 99)*

Characteristic parents		***n***	***%***
Grade child	Lower grade (grade 1, 2, 3)	32	31.7%
	Middle grade (grade 4,5)	30	29.7%
	Higher grade (grade 6,7,8)	39	38.6%
Highest degree	University	22	22.5%
	University of applied science	55	56.1%
	Secondary vocational education	13	13.3%
	Other	8	8.2%
Age	< 2 years	0	0%
	25-31 years	3	1.6%
	31-41 years	47	25.5%
	> 41 years	41	45.1
Gender	Male	13	13.1%
	Female	84	84.9%

5. Results

For this chapter, the results from the teacher questionnaire (TQ) and parent questionnaire (PQ) are analyzed and summarized in various tables. The current way and preferred way of sharing Cito and method results are presented, as well as the difference between the current and preferred method of sharing, for both parents and teachers. Furthermore, differences between the teacher's and parent's perspectives are analyzed. Finally, parents' and teachers' wishes with regards to sharing Cito results are described.

5.1 Way of sharing academic results

To find out how parents and teachers are currently sharing academic results, the two questionnaires (PQ and TQ) included a matrix question. The first question in the questionnaire (A) explored how results are currently shared with parents. The second question (B) explored how respondents prefer results to be shared. To determine whether respondents are satisfied with the current way of sharing, the difference between the current way of sharing and the wanted way of sharing is analyzed. Finally, differences between parents' and teachers' wishes are analyzed.

5.1.1 Current way of sharing method and Cito results

The question asking about the way teachers and parents currently share academic results explores in which way method results and Cito results are communicated with parents. In both questionnaires, the conversation with an appointment is the most chosen option (Table 5). Remarkably, parents and teachers have different opinions on how results are currently shared. A chi-square test was performed to compare results from parents and teachers about sharing academic results. Remarkable differences were that significantly fewer teachers than parents state that Cito results are only shared online $X^2(4, N= 281) =6.66, p < 0.01$. And significantly more parents than teachers state that method results are not shared with them at all, $X^2(4, N= 281) =13.07, p < 0.01$. More significant ($p < .05$) differences between parents' and teachers' perspectives on how results are currently shared are displayed in Table 5.

5.1.2 Preferred way of sharing method and Cito results

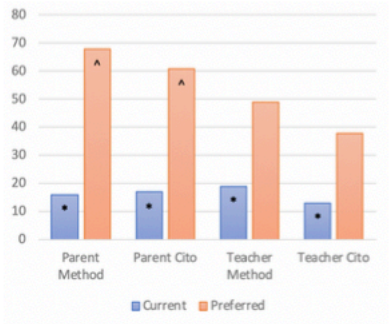
The second question in both questionnaires (TQ and PQ) asked in what way the respondents would prefer Cito and method results to be shared. Remarkable are the differences between parents and teachers and their wishes for online and offline sharing. Significant more parents would like Cito results to be shared online, $X^2(4, N= 281) =6.67, p = .0098$. In contrary significant more teachers would like method and Cito results to be shared offline only, M.: $X^2(4, N= 281)12.98 =, p= .00032,$ C.: $X^2(4, N= 281) = 12.22, p = .00047$.

More parents than teachers would like to use an online platform for the parents of one child for sharing academic results, M.: $X^2(4, N= 281)7.43 =, p= .0064$, C.: $X^2(4, N= 281) = 6.82, p = .009$. Parents mostly (M.: 53.5%, C.:47.5%) prefer a combination of online and offline sharing of results, whereas teachers mostly (M.: 39.6%, C.: 49.5%) prefer sharing academic results offline.

5.1.3 Satisfaction about the way of sharing method and Cito results

The questionnaires did not ask the respondents whether they are satisfied with the current way of sharing academic results, therefore the current way of sharing and the preferred way of sharing Cito and method results are compared. Differences between the current and preferred way of sharing are presented in Table 5. Both parents and teachers would like significantly more sharing through an online platform for the parents of one child (see also Figure 1). Both parents and teachers seem to prefer significantly less 'only offline sharing' than there is now. Remarkably, parents' preferred way of sharing is for every medium for sharing higher or the same than the current way of sharing. Teachers' preferred way of sharing academic results is for every medium lower (except for an online platform for the parents of one child).

Figure 1, ***Parents' and teachers' current and preferred usage (%) of an online platform for parents of one child.***



* There is a significant difference (P< 0.05) between the current and preferred way of sharing.
^ There is a significant difference (P< 0.05) between the results from the PQ and the TQ.

Table 5, *Preferred and current way(s) of sharing method and Cito results according to parents and teachers.*

Parents N = 99 Teachers N = 182 n (%)	Online platform for all the parents of the same grade		Online platform for parents of one child		Email		Conversation with appointment		Conversation without appointment		On paper		No sharing or don't know	
	Current	**Preferred**	**Current**	**Preferred**	**Current**	**Preferred**	**Current**	**Preferred**	**Current**	**Preferred**	**Current**	**Preferred**	**Current**	**Preferred**
Parents														
Method	2 (2.0%)	2 (2.0%)	16 (16.2%)^	67 (67.7%)**	4 (4.0%)**^	22 (22.2%)**	61 (61.6%)**	58 (58.6%)	10 (10.1%)**	16 (16.2%)	24 (24.2%)**	33 (33.3%)	21 (21.2%)**^^	4 (4.0%)
Cito	0	3 (3.0%)	17 (17.2%)^	60 (60.6%)**	4 (4.0%)^	19 (19.2%)**	63 (63.6%)**	63 (63.6%)	0	5 (5.1%)	32 (32.3%)**	40 (40.4%)	12 (12.1%)^^	2 (2.0%)
Teachers														
Method	11 (6.0%)	6 (3.3%)	34 (18.7%)^	89 (48.9%)	30 (16.5%)^	9 (4.9%)	146 (80.2%)^	115 (63.2%)	72 (39.6%)^	48 (26.4%)	93 (51.1%)^	58 (31.9%)	5 (2.7%)	9 (4.9%)
Cito	3 (1.6%)	5 (2.7%)	24 (13.2%)^	69 (37.9%)	4 (2.2%)	2 (< 1%)	150 (82.4%)^	128 (70.3%)	18 (9.9%)	22 (12.1%)	97 (53.3%)^	64 (35.2%)	11 (6.0%)	15 (8.2%)

	Only digital sharing		Digital and non-digital sharing		Only non-digital sharing	
	Current	**Preferred**	**Current**	**Preferred**	**Current**	**Preferred**
Parents						
Method	7 (7.1%)^^	25 (25.3%)	14 (14.1%)*^^	53 (53.5%)*	59 (59.6%)^^	17 (17.2%)*
Cito	11 (11.1%)*^^	25 (25.3%)**	9 (9.1%)^^	47 (47.5%)*	67 (67.7%)^^	26 (26.3%)*
Teachers						
Method	7 (3.8%)^^	31 (17.0%)	52 (28.6%)	72 (39.6%)	118 (64.8%)^^	72 (39.6%)
Cito	4 (2.2%)^^	21 (11.5%)	29 (15.9%)^^	60 (33.0%)	139 (76.4%)^^	90 (49.5%)

^ There is a significant difference (P< 0.05) between the current and preferred way of sharing.
^^ There is a significant difference (P< 0.01) between the current and preferred way of sharing.
* There is a significant difference (P< 0.05) between the results from the PQ and the TQ.
** There is a significant difference (P< 0.01) between the results from the PQ and the TQ.

5.2 Current frequency

Both questionnaires contained a question about how frequently results are currently shared, and how content the respondents are about this frequency. The complete results are presented in Appendix E, the compact results about the satisfaction are presented in Table 6.

Remarkable are the differences in opinion between parents and teachers about how frequently results are shared. There is a significant ($p < .05$) difference in opinion between parents and teachers regarding the frequency of current sharing of method results. The differences between parents and teachers in their answers about the frequency of current sharing of Cito results are not significant, X^2 (4, N=182) = 9.12, ($p > .05$).

5.2.1 Satisfaction about the current frequency.

Parents' and teachers' satisfaction with the frequency of sharing results differ significantly. Approximately half of the participating parents are satisfied with the frequency of the method results being shared and 70.9% of the parents are content about the frequency Cito results are being shared (Table 6.). Over 90% of the teachers are satisfied with the frequency of the method results being shared and all the teachers (100%) are satisfied with the frequency of Cito results being shared. The sample for parents' and teachers' Cito sharing satisfaction consisted of 137 teachers and 79 parents. The differences are X^2(1, N=216) 33.48. P <.00001. The sample for parents' and teachers' method sharing is X^2(1, N=216) 37.53. P <.00001.

The results about the way academic results (should be) are shared showed that the opinions about how frequently and even whether academic results should be shared with parents are different between parents and teachers, but teachers mutually agree. One teacher answered that all academic results are shared more than enough and added, '*we think that academic results should never be shared with parents without a conversation. We combine observations with the results. Parents take academic results alone too seriously.*' Another teacher who answered that academic results are shared more than enough added that the pressure on Cito and method tests is already way too high. *'I think that those results should not be shared with parents without a conversation.'* There were parents who said that results are shared not enough who mentioned that they would like to know more about the results to make it possible to help their children more with homework. It can, therefore, be questioned whether these parents only answered the question about the frequency, or also included other aspects of communication about results in their satisfaction score.

Table 6, *Differences (between parents and teachers) in satisfaction of the frequency, and the frequency of sharing academic results*

	Parents (N=75)		Teachers (N=158)	
	Method	Cito	Method	Cito
Frequency				
Directly when known	17 (18.3%)	15 (15.8%)	44 (24.7%)	26 (14.3%)
Monthly all the grades	0	0	2 (1.1%)	1 (<1%)
Few times a year	44 (47.3%)**	54 (56.6%)**	122 (68.5%)	133 (73.1%)
Once a year	9 (9.7%)**	14 (14.1%)**	0	7 (3.8%)
Never	23 (24.7%)**	11 (11.1%)	10 (5.6%)	10 (5.5%)
Satisfaction				
More than enough	18 (19.4%)**	23 (24.2%)**	83 (46.6%)	105 (59%)
Enough	23 (24.7%)	29 (30.5%)	64 (36%)	53 (33.5%)
Not enough	34 (36.6%)**	23 (24.4%)**	11 (6.2%)	0
Content**	41 (54.7%)**	52 (69.3%)**	147 (93%)	158 (100%)
Not Content	34 (45.3%)**	23 (30.7%)**	11 (7%)	0

* This difference is a significant (P<.05) difference between the results from the PQ and the TQ.
** This difference is a significant (P<.01) difference between the results from the PQ and the TQ

5.3 How to present Cito results

To explore how teachers and parents would like Cito results to be shared, two ways of sharing Cito results are shown in the questionnaires. First, the results from one individual Cito from one child is shown, and after that the results from a series of Cito results are shown.

5.3.1 Displaying the results from one Cito

The third section of the questionnaire was about the possible context that could be added with the Cito results. The first questions explored how and whether respondents would like Cito results to be shared. After that, the questionnaire explored how those Cito results should be shown and which information the respondents considered to be relevant.

The multiple-choice question shows that most teachers (64.29%, n=117) state that it is not meaningful to share Cito results without any explanation (Table 7). Amongst those teachers, 36 (30.77%, n=117) indicated that they would prefer to add comments to the Cito

results. Eleven teachers mentioned that they believe parents should be able to monitor all results at any time, thus not only grades.

Most parents (80.82%, n = 80) would like to see more information added to the isolated results. Besides that, many of them (76.77%, n= 76) would like to have constant insights into all of the Cito results.

One question in the questionnaire asked what would be the preferred way of showing Cito results according to the respondents. The results are displayed in Table 7. Respondents had four options; the options are shown in Figure 2.

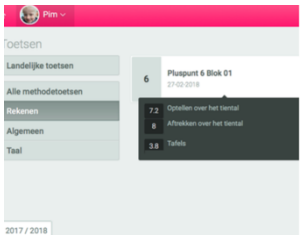
Table 7, ***How to share Cito results according to parents and teachers.***

	(1) Result with learning goal	(2) Result with learning goal + example question	(3) Result with learning goal + an example question + overview of the made mistakes	(4) Only results/ no results at all.
Teachers (N=179)	19 (10.6%)	68 (38.0%)	67 (37.4%)	25 (14.0%)
Parents (N=99)	19 (19.2%)	29 (29.3%)	42 (42.4%)	9 (9.1%)

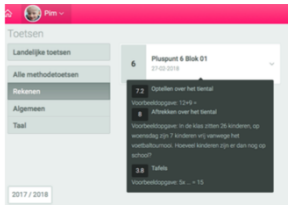
* This difference is a significant (P<.05) difference between the results from the PQ and the TQ.
** This difference is a significant (P<.01) difference between the results from the PQ and the TQ

Figure 2, ***Print screens of answer options about how to share Cito results.***

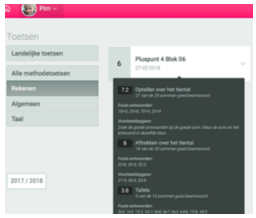
(1) Result with learning goal



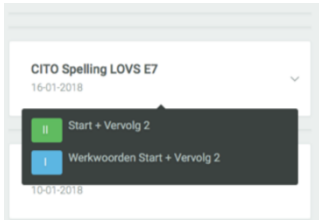
(2) Result with learning goal + example question



(3) Result with learning goal + an example question + overview of the made mistakes



(4) Only results/ no results at all.



Most teachers chose option two (38.0%, n=68) where an example question has been added. The most given arguments are that parents should have insights into the learning goals of their children and that parents could help their children when they have those insights. This is in line with the wish from parents to have more insights into the results of the learning goals as shown in *way of communication*. Option three was chosen 67 times (37.4%); thirty teachers mentioned that this way is the most transparent for parents. Some teachers do not want to share Cito results at all (14%, n=25). The most given arguments for this are statements like '*I rather share grades face-to-face', 'I would like to share learning goals instead of grades or percentages', or 'I don't want the emphasis to be on grades*.

Most parents (42.4%, n=42) chose option three where *made mistakes* are shared as well. Arguments from parents included something about having more insights into the child's results or about increasing the chance to know how to help their children. Some parents (9.1%, n=9) stated that they don't need to have online insights into the Cito results at all. They give reasons like *'I don't need to know everything'* or '*I would like to hear those things face-to-face'*.

5.3.2. Displaying a set of Cito results

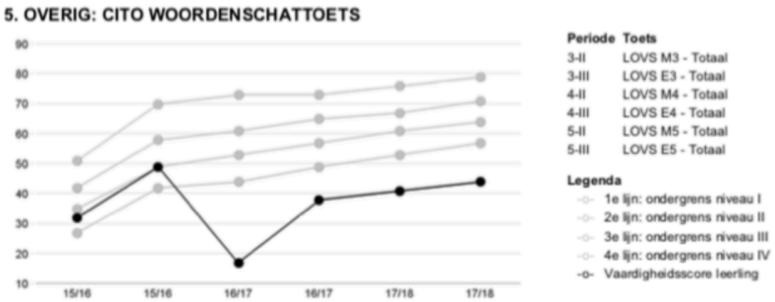
Cito results can be shared with parents by showing trend graphs that include the child's results of one subject over time. To know how teachers and parents prefer those results to be shared, a question about those graphs had been added. The respondents could choose between two extremes on a two-point scale. The results are displayed in Table 8. A figure that is related to the answers to this question is shown in Figure 3. Most respondents state that more explanation needs to be added to the graphs. Respondents prefer current Cito results to be displayed together with Cito results from other years (Table *8*).

Table 8, ***Opinion about Cito graphs ParnasSys***

Teachers (N=180) - Parents (N=99)	Teachers	Parents
I know those graphs / I never saw them.	165 (91.7%) ** / 15 (8.3%)**	68 (68.7%) / 31 (31.3%)
No explanation is needed for those graphs / Explanation is needed for those graphs	65 (36.8%) / 115 (64.3%)	41 (41.4%) / 58 (58.6%)
It is good to show how the child is doing relative to other years / This is not necessary	169 (93.9%) / 11 (6.1%)	95 (96.0%) / 4 (4.0%)
I would like permanent insight in the Cito results of my child / This is not necessary	-	71 (71.7%) / 28 (28.3%)

* This difference is a significant (P<.05) difference between the results from the PQ and the TQ.
** This difference is a significant (P<.01) difference between the results from the PQ and the TQ

Figure 3, ***Example graph from OP.***



6. Conclusion and discussion

Technology supporting communication is self-evident nowadays. However, in Dutch primary schools, it does not seem self-explanatory to communicate academic (Cito and method) results with parents digitally. This study aimed to investigate what teachers' and parents' preferences are regarding sharing academic results through an online platform (like OP). In order to determine these preferences, (1) the current and preferred way of sharing academic results, (2) the satisfaction about the current way and frequency of sharing results, and (3) the preferred content when sharing Cito results digitally have been explored. This study was conducted using two questionnaires, one for parents and one for teachers).

This research shows that there is an opportunity for OP to grow and improve since parents and teachers would like to use more digital media for sharing and receiving academic results. Moreover, digitalization and automatization of sharing results as well as learning goals and example questions, could potentially reduce the workload for teachers and enhance the satisfaction of parents.

Current and preferred way of sharing academic results

The study from Bokdam et al. (2014) showed that a scheduled meeting is the most common way for parent-teacher communication. This is in line with the findings of the current study that shows that the most common way for sharing academic results according to both parents and teachers is through an appointment enabling face-to-face communication (Table 3). The results from the current study also show that both parents and teachers want to increase the digital sharing of academic results instead of merely face-to-face communication. Furthermore, it appears from this study that significantly more parents than teachers ($p>.05$) desire digital sharing of academic results. The reason for this arguably being that teachers fear an increase in work pressure, since they already experience an increase in work pressure due to general parent-teacher communication (Adriaens, et al., 2016). Since both parents and teachers desire more communication through an online platform about academic results, using OP could very well meet these needs. According to Bokdam et al. (2014) 33% of Dutch teachers already communicate through an online platform (like OP), however, the current study shows that only 19% of teachers use an online platform. This discrepancy could be due to the fact that this study only includes communication about academic results and therefore does not involve all parent-teacher communication.

The satisfaction with the frequency of sharing results

From the current study, it has become clear that parents and teachers have different perspectives on how frequently results are being shared. Almost a quarter of the parents state that method results are never shared with them, and less than 6% of the teachers state they never share method results. Around three-quarter of the teachers state that they share Cito results a few times a year, while only 57% of the parents indicate that they receive Cito results a few times a year.

It is also clear that the satisfaction about the frequency of sharing the results significantly differences between parents and teachers. Teachers are far more satisfied with the frequency in which academic results are being shared compared to parents. While all teachers (100%) are content about the frequency of sharing Cito results, only 68% of the parents are content about this. And while 90% of the teachers are content about the frequency of sharing method results, only 55% of the parents are.

A possible explanation for those differences between parents and teachers could be the homogeneity of the parents' sample; while this sample consisted of primarily high-SES parents, teachers tend to cater to the entire school's SES population. According to Vogels (2002), parents with a higher SES are more critical about the communication with teachers in general, so there is a probability that the SES of parents has an influence on their perceived satisfaction about communicating academic results.

Another possible explanation is that teachers take all results they share into consideration; the results for the whole class, as well as results for an additional test of one child, while parents only take their own child's results into consideration. The differences between Cito and method results can be justified because Cito results only appear two to three times a year, while method tests are taken more than 10 times a year.

The preferred content of the shared digital Cito results

The current research explored what content teachers and parents prefer; individual Cito results on an online platform or a set of Cito results on an online platform. The majority (81%) of parents would like to see more context besides only individual Cito results and most of them (77%) want constant insight into those results. Almost half of the parents would like to see the results in combination with learning goals, example questions and mistakes the student has made. Teachers' opinions are more spread about the details of the content that should be shared with the Cito results. Around 38% of the teachers would like to see learning goals and an example question added and 37.4% of teachers would like to see made mistakes added to

those learning goals and example questions. A possible explanation for these outcomes could be that teachers already see the context from the academic results, they see the child in the school context which makes it easier to interpret the academic results. Parents see the child out of school context which makes interpretation of results without context and explanation harder. The most common argument teachers gave for their choice of adding context was that transparency would increase the involvement of parents with school, and would give them the opportunity to help students. This is in line with previous research that calls for more parent participation to motivate students in their schoolwork (Bordalba & Bochaca, 2019; Thompson et al., 2015). Teachers also stated that more context could prevent misinterpretation, which is in line with findings from Thomson (2008) that suggests that digital messages with verbal queues and context decrease the chance of misinterpretation and misunderstandings.

Almost all respondents (94% of the teachers and 96% of the parents) prefer to see Cito results in relation to Cito results for the same subject from other schoolyears, presented in, for instance, a graph like shown in Figure 3. The open questions show that the reason parents would like to know more about the results is that they want to help their child if necessary.

Both parents and teachers would like to see more results to be shared digitally, but it has to be an addition to face-to-face communication about the results. To satisfy both parents and teachers when sharing results, a few conditions have to be taken into account. Teachers find it important that sharing the results will not add more workload to their daily job. Teachers already experience a high workload in primary education (Adriaens, et al., 2016) so it is necessary that using OP does not add workload, and possibly even reduces workload by sharing digital academic results more efficiently.
This could be achieved by automatically sharing academic results that teachers add to ParnasSys.

Most teachers want parents to be content and give parents the possibility to help their child with the schoolwork. However, some teachers prefer to keep certain information for themselves in order to decrease the pressure of grades on students. Parents find it important to know more about the content of the results. They want as much information as possible as frequently communicated as possible which could be achievable for teachers when using a digital platform.

The findings of this study show that it is safe to say there is a foundation for sharing academic results through a digital platform like OP from ParnasSys. This research shows that

there is an opportunity for OP to grow and improve since parents and teachers would like to use more digital media for sharing and receiving academic results. Moreover, digitalization and automatization of sharing results, learning goals and example questions could reduce the workload for teachers and enhance the satisfaction of parents.

6.1 Design limitations

The current research had some limitations. The first limitation is that the research included an insufficient number of respondents to draw overall conclusions about Dutch primary schools which affected the generalizability of study results. To increase the generalizability, more respondents from different kinds of primary schools, with different SES statuses, different religious backgrounds, work experiences, and ages are necessary. Another limitation is that the current research focusses on the academic Cito and method results. There is a possibility that schools share more types of academic results which have not been taken into account in the current research.

The questionnaires used for this study had some limitations as well. First, some of the questions had not been formulated in the most effective way. This has possibly led to missed opportunities finding relevant answers to some questions. One example was that the questionnaire asked participants about the religion and the form of their primary school. Participants could only give one answer, although there are primary schools that fit in more than one box (like a religious Dalton school). Not all questions from the questionnaires were relevant for the research since some questions were formulated on behalf of ParnasSys. This made the questionnaires longer than necessary which might have affected the number of participants who completed the questionnaire. In the end, 285 participants failed to complete the entire questionnaire.

Furthermore, it was notable that some of the participants did not give relevant answers to the questions asked. An example is a question about what context the participants would like to see with the results. Answers like T: '*I am against Cito results'*, and T:'*I think our work pressure is too high'* were given. The final limitation is that the questionnaire was conducted in the name of ParnasSys. This could be seen as a benefit but also as a downside since it might have influenced the opinion of the participants. However, there is no evidence for this.

6.2 Theoretical relevance

This research provides insights into up to date demands for sharing academic results between teachers and parents in primary schools in the Netherlands. This study is valuable for research because it contributes to the knowledge about parent-teacher communication regarding academic results. It supplements the knowledge about what kind of media is suitable for sharing information about academic results, which has not been explored before according to Bordalba and Bochaca (2019). Until now, the only related subject that has been investigated is the way of communicating, focusing on a minority group of parents (Kim, 2009). On top of that, previous research has not focused on Dutch primary schools. However, this research focuses on the communication about academic results of children, communication being a very broad concept capturing more subjects than sharing academic results only. More research about other subjects within the concept of communication is needed to be able to draw overall conclusions about parent-teacher communication.

6.3 Future research

To know more about (digital) parent-teacher communication regarding academic results, further research is required. Firstly, more research is required to find the influences of differences in perspectives, satisfaction, and opinions between parents mutually; it would be useful to know what those differences rely on and how schools could serve all parents. Further research should also discover whether parents' and teachers' preferences are the same for other (non)academic results like for example results on behavior or work motivation, and whether a digital platform is still desired when it comes to communicating other results or communication goals. Finally, it would be useful to explore whether different types of schools, religions, and SES are related to the preferences of parents, this could explain differences in opinions and help schools to use the most suitable way of communication for their parent population.

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Appendix

A. Ouderportaal (OP)

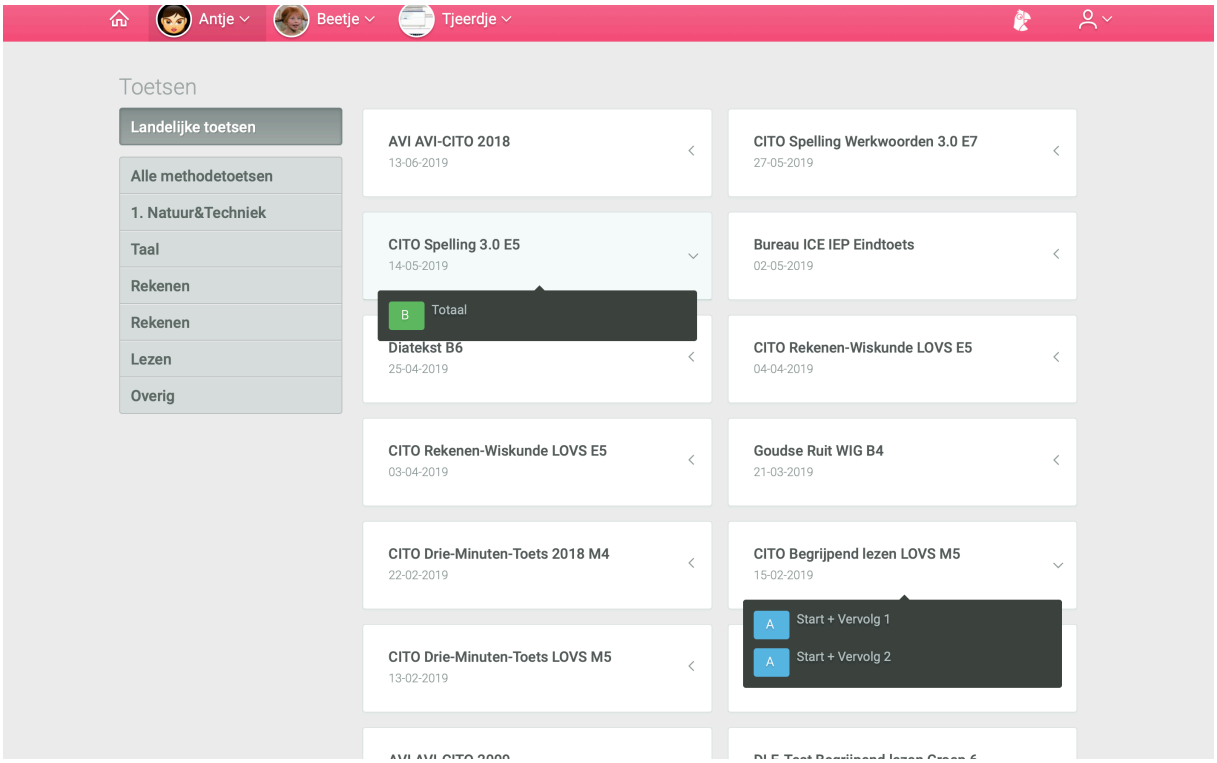


Figure A1. **Test result page (parents' view)**

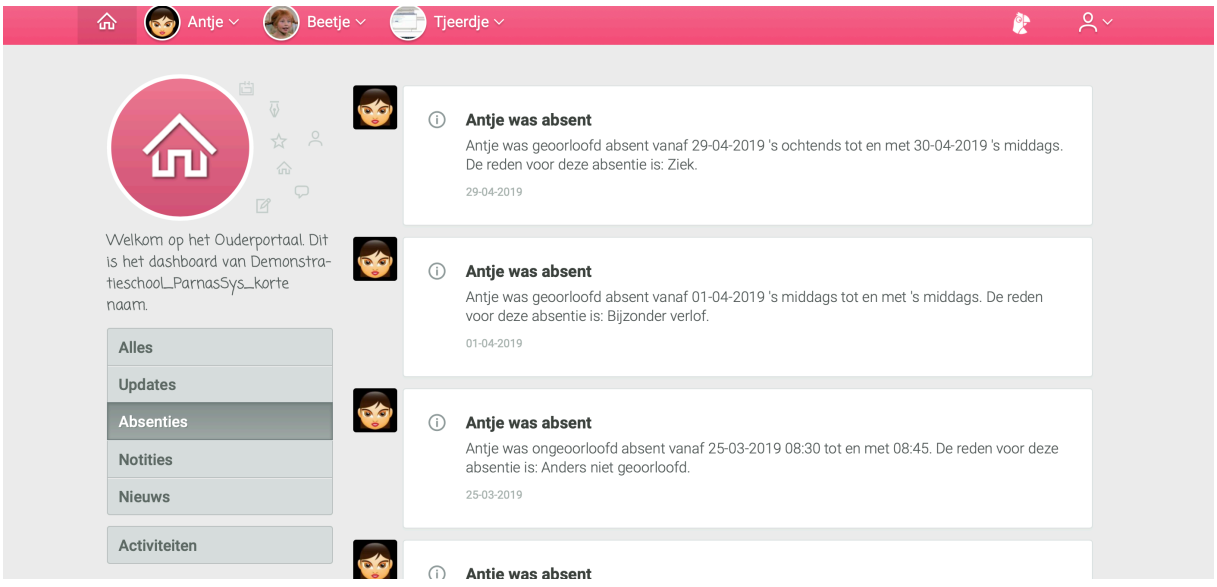


Figure A2. **Absence page (parents' view)**

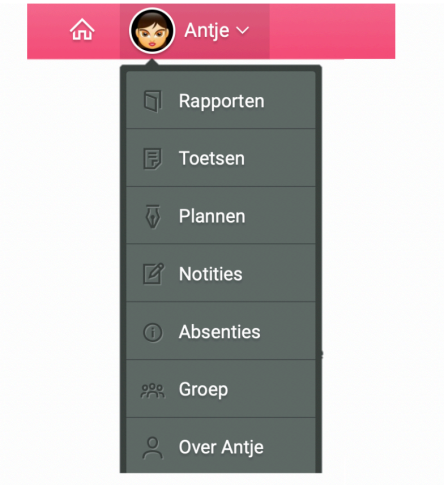


Figure A3. **Dropdown menu with all the module options (parents' view)**

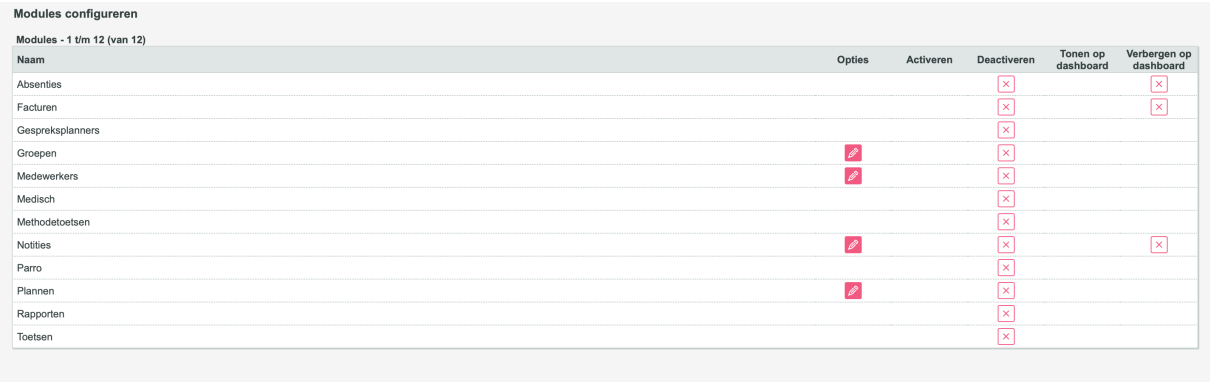


Figure A4. **Activating and de-activating module options (schools' view)**

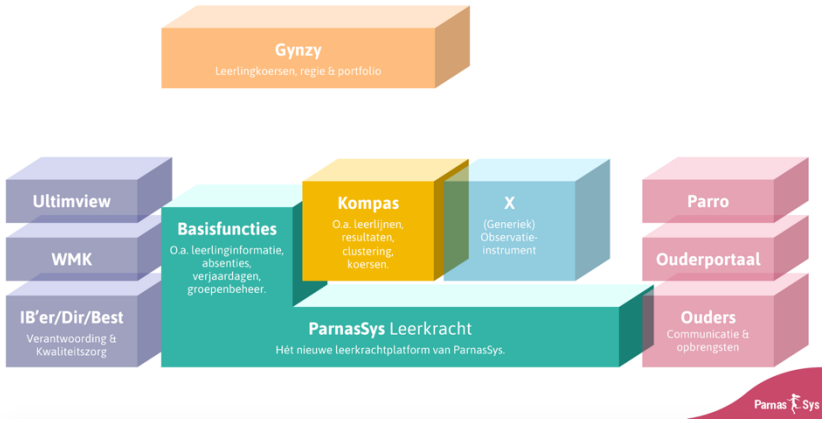


Figure A5. **Overview of products owned by ParnasSys.**

B. Numbers of Ouderportaal users

Table B1, *Number of schools using modules from Ouderportaal (OP) with parents*

Modules of Ouderportaal	Schools with module enabled
Family	1307
Demographics	1308
Absences	1181
Parro	1167
Medical	1067
Teachers	947
Notes	521
Appointment planner	~~419~~
Bills	~~229~~
Timetable	306
Non method tests	884
Method tests	857
Total OP schools	**1819**
Total ParnasSys schools	**5703**

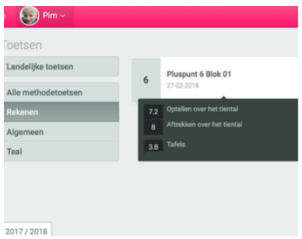
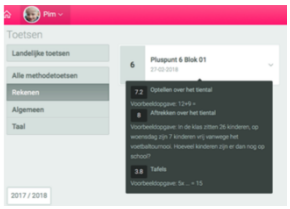
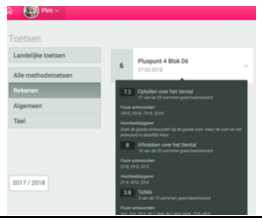
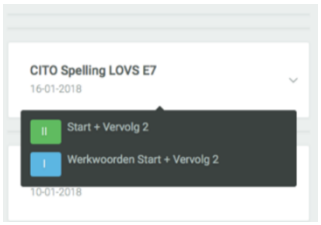
Note, the source of those numbers is the database of ParnasSys in March 2019.

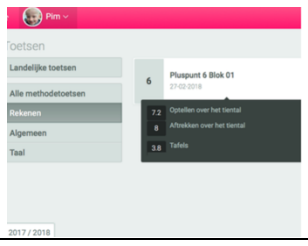
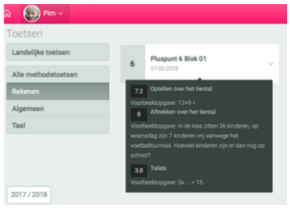
Table B2, *Number of Ouderportaal modules one school is using*.

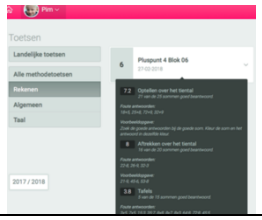
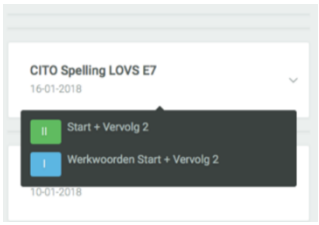
Number of modules using	Number of schools
0	1
1	54
2	35
3	56
4	82
5	122
6	126
7	119
8	169
9	211
10	203
11	194
12	150

C. Teachers' and Parents' questionnaire (translated)

Teachers' questionnaire (translated)		
Question number, Subject	**Question**	**Answer options**
Q1, way of communication	How do you share Cito/method results with parents?	Online platform for all of the parents of the same grade Online platform for parents of one child Email Conversation with appointment Conversation without appointment On paper No sharing or don't know
Q2, way of communication	How would you prefer to share Cito/method results with parents?	Online platform for all of the parents of the same grade Online platform for parents of one child Email Conversation with appointment Conversation without appointment On paper No sharing
Q3, Frequency	How frequently do you share method/ Cito results with parents?	Immediately when known Monthly all averages of the grades Monthly all the grades A few times a year Once a year never
Q4, Frequency	I think this frequency is ..	More than enough Enough Not enough
Q5, Frequency	If you are not content about this frequency explain here why you are not content.	Open
Q9, content of communication	What statement fits your opinion?	I know those graphs / **I have never seen them before.** No explanation is needed for those graphs / **Explanation is needed for** those graphs It is good to show how the child is doing related to other years / **This is not necessary** I would like to give permanent insight in the Cito

		results of my child / **This is not necessary**
Q10, content communication	Which option do you prefer? **(1) Result with learning goal**  **(2) Result with learning goal + example question**  **(3) Result with learning goal + an example question + overview of the made mistakes**  **(4) Only results/ no results at all.**  	Option 1, because.. Option 2, because.. Option 3, because.. Option 4, because..
Q11, content communication	Do you think that sharing Cito results this way is effective? Why?	Open
Q12, Characteristics	How many days a week do you work? What is your gender? How many years of work experience do you have? What grades do you teach? What is your date of birth?	1-5 days Male/female <2, between 2-5, between 6-10, between 11-20, >20 1, 2, 3, 4, 5, 6, 7, 8 open
Parents' questionnaire (translated)		
Question number, Subject	**Question**	**Answer options**
Q1, way of communication	How are method/Cito results shared with you?	Online platform for all of the parents of the same grade Online platform for parents of one child Email Conversation with appointment Conversation without appointment On paper No sharing or don't know
Q2, way of communication	How would you prefer Cito/method results to be shared with you?	Online platform for all of the parents of the same grade

		Online platform for parents of one child Email Conversation with appointment Conversation without appointment On paper No sharing
Q3, Frequency	How frequent are method/ Cito results shared with you?	Direct when known Monthly all averages of the grades Monthly all the grades Few times a year Once a year never
Q4, Frequency	I think this frequency is ..	More than enough Enough Not enough
Q5, Frequency	If you are not content about this frequency explain here why you are not content.	Open
Q9, content of communication	What statement fits your opinion?	I know those graphs / **I never saw them.** No explanation is needed for those graphs / **Explanation is needed for** those graphs It is good to show how my child is doing relative to other years / **This is not necessary** I would like permanent insight in the Cito results of my child / **This is not necessary**
Q10, content communication	Which option do you prefer? **(1) Result with learning goal**  **(2) Result with learning goal + example question** 	Option 1, because.. Option 2, because.. Option 3, because.. Option 4, because..

	(3) Result with learning goal + an example question + overview of the made mistakes  **(4) Only results/ no results at all.** 	
Q11, content communication	Do you think that sharing Cito results in this way is effective? Why?	Open
Q12, Characteristics	How many days a week do you work? What is your gender? What is your level of education? What grade is your child in? What is your date of birth?	1-5 days Male/female Open 1, 2, 3, 4, 5, 6, 7, 8 open

D. Flyer used to promote the questionnaire

E. Results parents' and teachers' opinion about the frequency of communication.

Table E.1, *Current frequency sharing results according to parents and teachers*

n (%)	Immediately when known		Monthly all the averages of the grades		Monthly all the grades		A few times a year		Once a year		Never		Total	
	Parents	**Teachers**	**Parents**	**Teachers**	**Parents**	**Teachers**	**Parents**	**Teachers**	**Parents**	**Teachers**	**Parents**	**Teachers**	**Parents**	**Teachers**
Method														
More than enough	12	32	-	-	-	1	3	47	-	-	3	3	18 (19.4%)	83 (46.6%)
Enough	2	6	-	-	-	1	17	53	1	-	3	4	23 (24.7%)	64 (36%)
Not enough	-	-	-	-	-	-	18	10	5	-	11	1	34 (36.6%)	11 (6.2%)
No opinion	3	6	-	-	-	-	6	12	3	-	6	2	18 (19.4%)	20 (11.2%)
Total	17 (18.3%)	44 (24.7%)	0	0	0	2 (1.1%)	44 (47.3%)	122 (68.5%)	9 (9.7%)	0	23 (24.7%)	10 (5.6%)	93	178
Cito														
More than enough	8	19	1	-	-	-	10	75	3	5	1	6	23 (24.2%)	105 (59%)
Enough	4	3	-	1	-	1	20	43	5	1	-	3	29 (30.5%)	52 (29.2%)
Not enough	-	-	-	-	-	-	12	-	5	-	6	-	23 (24.4%)	-
No opinion	3	4	-	-	-	-	12	15	1	1	4	1	20 (21.1%)	21 (11.8%)
Total	15 (15.8%)	26 (14.3%)	1 (1.0%)	1 (<1%)	-	1 (<1%)	54 (56.6%)	133 (73.1%)	14 (14.1%)	7 (3.8%)	11 (11.1%)	10 (5.5%)	95	178