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## Children's beliefs concerning their school performance at the end of the first grade in Finland

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# Children's beliefs concerning their school performance at the end of the first grade in Finland

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## ABSTRACT

This study examines primary-school children's beliefs about their school performance at the end of their first school year in Finland and feedback that they have received, and furthermore possible gender differences between these beliefs. Children from Grade 1 ( $N = 544$ ), approximately 7 years old, were interviewed. The data were assessed using problem-driven content analysis and inductive reasoning. The analysis revealed ten categories of children's beliefs regarding their school success and failure. The results showed that more than one-third of the children believed that they were succeeding well at school. More boys than girls mentioned that they succeeded in mathematics, and more girls than boys mentioned that they succeeded in literacy. Based on the interviews, teachers rarely gave feedback. Even less feedback was reportedly given by teachers when the children believed that they were performing poorly. Therefore, different modes of giving feedback and the way feedback is provided should be carefully considered.

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Beliefs; school performance; feedback; gender differences; teacher's role

## Introduction

Numerous studies have shown that early school years are significant for later school performance and academic success (e.g. Hamre & Pianta, 2001; Viljaranta, Lerkkanen, Poikkeus, Aunola, & Nurmi, 2009). In particular, the significance of a child's self-concept of ability at the beginning of their schooling has been studied intensively (e.g. Arens et al., 2016; Bong & Skaalvik, 2003; Dapp & Roebers, 2018; Marsh & Martin, 2011; Musu-Gillette, Wigfield, Haring, & Eccles, 2015). Children starting school typically manifest a high level of motivation (e.g. Lerkkanen, Kikas, Pakarinen, Poikonen, & Nurmi, 2013) and a self-concept of a learner (Wigfield & Eccles, 2000). In the early school years, one's self-concept as a learner is based on a social comparison among peers and feedback obtained from the environment (Weidinger, Steinmayr, & Spinath, 2019). Finland has one of the highest international indexes of gender and social equality in society (United Nations Development Program, 2018; World Economic Forum, 2018). Also, the Finnish school system has been considered as equal for all. For example, it provides highly equal educational opportunities irrespective of the students' socio-economic background, gender, and place of residence (Väljjarvi & Sulkunen, 2016). However, gender differences in school achievements have increased over the last decade despite government actions. For example, recent PISA (OECD, 2019) results have shown that boys' performance in reading achievement has been declining over past decades compared to girls and the differences between boys and girls are now the fifth largest among OECD countries. This discrepancy

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makes Finland an interesting context to investigate gender differences in early school years and give empirical evidence on the potential early effects of nature and nurture in a Finnish school environment. An important factor is to consider teacher's perception of gender in early years classrooms because teachers play an important role in the development of a child's self-concept of a learner (Aunola, Leskinen, Onatsu-Arviolommi, & Nurmi, 2002; Watts et al., 2015), and a positive self-concept of ability is related to better learning outcomes and higher academic achievement when children direct their behaviour and effort in their learning situations (Wigfield et al., 1997). It has also been demonstrated that children's negative beliefs and self-concepts as learners formed during the early school years are difficult to change (Patrick, Mantzicopoulos, Samarapungavan, & French, 2008). Thus, it is of great importance to increase our understanding of the formation of children's self-concepts of ability at the beginning of their school careers when they start to receive more systematic feedback on their performance. This study draws on sociocultural approach to learning and development (Vygotsky, 1978) which highlights learning through interactions between teacher, students, and peers in the classroom. In the current qualitative study on individual beliefs, we have focus on the interaction between teacher and students and furthermore we wanted to give voice to children themselves about learning experiences they have met in their learning interaction.

Children's self-concepts as learners and their motivation to learn have been studied extensively, as have their connections to learning outcomes (e.g. Viljaranta et al., 2009; Wigfield & Karpithian, 1991) using self-ratings and the comparison between low learning outcomes, learning difficulties, and lack of motivation (e.g. Nurmi, Hirvonen, & Aunola, 2008). However, young children's own understandings of their abilities have seldom been studied (Freedman-Doan et al., 2000). Children's perceptions of their own performance have been examined (e.g. Eccles, O'Neill, & Wigfield, 2005; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Wigfield et al., 2015), as have students' areas of interest, and on the other hand, things that children do not yet know (Skaalvik, 1994). Furthermore, the importance of feedback in building one's self-concept as a learner has been examined in detail (e.g. Dermitzaki & Efklides, 2000; Pesu, Viljaranta, & Aunola, 2016), especially from the perspective of formative assessment and feedback delivery (Hattie & Timperley, 2007). What has not yet been studied is the child's perceptions of his or her own competence in conjunction with the provision of feedback. In addition, possible gender differences in young children's self-reported beliefs and in sources of feedback have also not yet been considered. Finally, the feedback received by children about their school success or failure has not been studied before in terms of the young children's own voices.

Consequently, the aim of the present study was to examine primary-school children's own beliefs concerning their school performance. In addition, we were interested in the possible gender differences in children's beliefs, as well as in the children's beliefs about the feedback they received.

### ***Children's achievement-related beliefs and gender differences***

Achievement-related beliefs play a vital role in school settings by directing students' behaviour and effort in learning situations (e.g. Bandura, 1997; Eccles et al., 2005; Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). Children's beliefs about themselves, such as their expectations of success, and the values placed on achieving a task are also influenced by perceptions of other people in the environment (Eccles & Wigfield, 2002). Even young children have justified beliefs about their own abilities before the beginning of formal schooling (e.g. Eskelä-Haapanen, Lerkkanen, Rasku-Puttonen, & Poikkeus, 2017). However, first graders' self-beliefs generally differ across subjects and activities (Eccles, 1993). In addition, boys in the first grade typically manifest high interest and beliefs in physical competence and math, while girls show more interest in reading and music (Eccles, 1993; Freedman-Doan et al., 2000; Marsh & Yeung, 1998). There is no previous research on gender differences in how young girls and boys themselves, based on their own beliefs, conceptualise their school performance and the feedback they receive. Children with similar performance levels

may even have very different opinions of their abilities (Wigfield & Eccles, 2002), and those self-beliefs are mostly focused on academic performance (e.g. Sylva, 1994).

Children's expectancies for success predict how they manage different tasks (Wigfield et al., 2006) and how their positive beliefs of their own abilities affect the direction of their effort in certain tasks (Wigfield et al., 2015). Several decades ago, research established some awareness of how, on the one hand, school shapes children's beliefs of their success and academic performance (Sylva, 1994), but on the other, children's own beliefs of themselves as learners have a powerful influence on their academic performance (e.g. Weidinger et al., 2019; Wigfield et al., 2015). Motivated young children with positive beliefs about their competences at school typically show high effort and engagement in learning (Wigfield, Eccles, & Rodriguez, 1998), do well at school (Eccles, 1993), and choose more challenging activities (Bandura, 1997). In contrast, a decrease in one's self-concept of ability has been associated with lower academic performance (Nurmi & Aunola, 2005).

In one study, Hicks, Liu, and Heyman (2015) examined the beliefs of children and the self-disclosure of their performance. The results revealed that, especially among young children (3–7 years old), reporting on their own positive school success was more common than reporting on negative performance, and the more positive and supportive the peer environment, the more self-disclosure of both positive and negative school performance. We also know that learning motivation and competence beliefs typically decline during elementary school years (e.g. Bouffard, Marcoux, Vezeau, & Bordenleau, 2003; Spinath & Spinath, 2005b), although there are differences between school subjects and genders (e.g. Meece & Miller, 2001; Weidinger et al., 2019).

### ***Teacher's role as provider of feedback***

Teachers' instructional practices and the feedback they provide in daily interactions are important for children's learning, motivation, and competence beliefs (Lerkkanen & Pakarinen, 2019). Teachers are the most important source of feedback for children with respect to their competences (Spinath & Spinath, 2005a) and self-concepts (Leflot, Onghena, & Colpin, 2010) at the beginning of their school years. It has also been shown that caring teachers are aware of and sensitive to the needs of their students and adjust their instruction and practices according to students' individual needs (Hamre et al., 2013). Furthermore, according to Burnett's (2002) study, there is a relationship between feedback, teacher-student relationships, and students' perceptions of the classroom environment. Specifically, students who felt that they frequently received negative feedback from their teachers also reported a more negative relationship with them, and students who reported having positive relationships with their teachers perceived the classroom environment in a positive way and also reported that they received more general feedback. Gender differences were also found in Burnett's (2002) study, with boys receiving more negative feedback than girls did, and girls reporting closer teacher relationships than boys. Brophy (1981) also found differences in teachers' feedback practices between genders in a study conducted four decades ago. In this case, girls did not receive feedback at all when they answered incorrectly but received regular positive feedback when delivering the expected correct response. In contrast, boys did not always receive positive feedback, even if their answer was correct, and they were often criticised when forming their answers (Brophy, 1981).

Stipek and Maclver (1989) investigated the possible causes of the decline of a child's self-concept of ability and found teachers' evaluative feedback to be one of them. Evaluative feedback can sometimes be based, for example, on teachers' beliefs that children with high academic motivation invest a greater amount of effort in their schoolwork (Upadyaya, Viljaranta, Lerkkanen, Poikkeus, & Nurmi, 2012). Moreover, students absorb feedback differently from each other, and feedback is sometimes perceived as unclear and even unsupportive of learning (Harris, Brown, & Harnett, 2014; see also Hattie, Gan, & Brooks, 2016). Timely formative assessment supports children's conceptual understanding and engagement in learning tasks, takes children's prior knowledge and experiences into account, provides the right level of challenge, develops one's competence, and supports

revisions to one's work (Darling-Hammond, Flook, Cook-Harvey, Barron, & Osher, 2020). Providing feedback is one aspect of teachers' high quality classroom practices (Hattie & Timperley, 2007). Teachers should not forget the significance of an emotionally supportive role when giving feedback to their students, as this ensures their motivation and engagement (e.g. Hamre & Pianta, 2005; Hattie, 2009).

Feedback is considered to be one of the most powerful influencing factors on learning and achievement, and it serves as a link between learning outcomes, content, and pedagogy (Harris et al., 2014; Hattie & Timperley, 2007). However, there is a limited amount of research on young children's beliefs concerning their school performance and how they absorb and process feedback they receive (e.g. Harris et al., 2014; Hattie et al., 2016). Therefore, it is important to determine what young children themselves think about the feedback they receive after beginning their formal schooling, as this might have a strong effect on the development of their self-concepts as learners.

### ***Finnish Educational system***

In Finland, compulsory formal education consists of nine years of comprehensive schooling, with a relatively late school entry at the age of seven. Before that, children attend preschool education. Children usually attend the nearest elementary school in their neighbourhoods. Classroom teachers usually teach every subject in grades 1–6. The Finnish national core curriculum for basic education (2014) emphasises diversity in assessment methods, assessment practices that guide and promote learning, and the importance of formative assessment. It also stipulates that information on each pupil's study progress must be given to the pupil and guardians on a sufficiently frequent basis and should be delivered in ways other than report cards. In the Finnish national core curriculum for basic education (2014), the subjects taught, including physical education and handicraft, are the same for boys and girls, and the children study in mixed groups.

### ***Aim of the present study***

The aim of the present study was to examine first-grade children's beliefs concerning their school performance. In addition, we were interested in the possible gender differences in children's beliefs, as well as in children's beliefs about the feedback that they received about their school performance. The research questions were formulated as follows:

1. What kinds of beliefs about their school performance (e.g. positive belief of success or negative belief of failure) do children have at the end of their first school year?
2. Are there gender differences between the beliefs of girls and boys at the end of the first school year?
3. What kind of feedback do children perceive from their teacher and others according to their school performance?

## **Method**

### ***Participants and procedure***

This study is part of a larger longitudinal investigation concerning teacher and student wellbeing and interaction (TESSI; Teacher and Student Stress and Interaction Study, Lerkkanen & Pakarinen, 2016–2017). In addition, the study investigated children's academic skills and motivation as well as parental beliefs and practices. The sample of the present study consisted of 544 Finnish primary-school children (boys,  $n = 270$ ; girls,  $n = 274$ ) at the end of their first school year (age 7–8 years). The ethics committee of the university approved the study before the commencement of the data collection in 2017.

The participants were recruited from eight municipalities in central Finland. At the beginning of the study, the students' parents were asked to provide written consent for their own and their children's participation in the study (August 2017). Each parent filled in their questionnaire at the end of their child's Grade 1 year (March–June). In the final part of the questionnaire, the parents were asked to interview their child regarding their beliefs about their own school performance.

### ***Measuring children's beliefs***

The children's beliefs were collected by open-ended questions regarding their school performance at the end of their first school year. The children's parents were instructed to ask their child four open-ended questions sequentially and to write down the answers in the child's words as precisely as possible (similar procedure in Eskelä-Haapanen et al., 2017). During the interviews, it is essential to promote interactional adult–child processes and be aware of child's communicative competence (Danby, 2002; Danby, Ewing, & Thorpe, 2011), for this reason, the interview conducted by the parents was justified.

The four questions were as follows: (1) In what do you perform especially well at school? (2) How do you know this? (3) What is there at school that you do not yet know? and (4) How do you know this?

### ***Data analysis***

The children's beliefs concerning their school performance were identified using qualitative problem-driven content analysis and inductive reasoning (Krippendorff, 2013; Patton, 2015). The analysis was conducted as follows:

1. The first author conducted several thorough readings of the students' transcribed texts. Every child was given a unique identification (ID) number.
2. The response forms of the boys and girls were separated into two different piles, and the analysis was performed sequentially for both genders. There were no other genders.
3. Verbatim texts were used to find analytical paths, such as parallel and consistent expressions, from the choice of suitable texts to answer the first research question.
4. The previous procedure was repeated for the second research question.
5. The previous procedure was repeated for the third research question.
6. Many children were not able to specify their answers, stating, for example, 'I am not able to answer'. There were also some blank answers, meaning that no answer was given at all. In addition, one child provided either no response or many responses. The total numbers and percentages of the analyzed expressions are shown in Tables (Tables 1–4).
7. The theoretical literature and prior empirical studies on children's beliefs about their schooling and feedback they receive were consulted to deduce categories from emerging expressions (Patton, 2015). Careful examination and constant comparison based on discussions between the researchers were also used to deduce categories (Patton, 2015).
8. The analysis revealed 10 categories connected to children's beliefs about their success at school, along with 10 categories connected to children's beliefs about their failure during the first school year. These categories could be further synthesised to form four core categories. A total of six categories were synthesised from the sub-categories of children's received feedback when performing successfully (13 categories) or failing at school (11 categories).

Direct quotations have been added to improve trustworthiness and make practices invisible. The translations of the extracts from the data used in the reporting were carefully checked by a native English speaker.

## Results

This study examined primary-school children's beliefs concerning their own school performance, specifically in terms of the kind of positive beliefs of success or negative beliefs of failure they had. Also of special interest were gender differences in children's beliefs about their school performance. In addition, we considered children's beliefs about the feedback they received concerning their school performance and the gender differences in the received feedback.

### Beliefs of children's school success

We found 10 categories of success that focused mostly on school subjects and formal schoolwork (see Table 1). Children were asked, 'In which subjects do you perform especially well at school?' There could be one or several expressions of successful performance from the same child.

The children were found to actively form views and have precise beliefs concerning their success and failure at school. There were much more positive than negative beliefs about school performance (see also Table 2). More than one-third of the children responded that they had achieved successful school performance. One girl said, 'School tasks are so easy, and I can complete them always without help'. The most prominent categories were learning connected to school subjects. More boys (71.9%) than girls (62.4%) mentioned that they experienced success in *mathematics*, stating, for example, 'I'm very good in maths' (boy), while more girls (52.9%) than boys (44.8%) mentioned that they performed well in *literacy*, with one girl indicating, 'I am especially good in reading and writing'. Boys (36.3%) also expressed that they were better at *physical exercise* than girls (22.6%), with one boy stating, 'I am good at exercises and sports'. *Handicraft*, in contrast, was much more of an area of expertise for girls (36.9%, e.g. 'Handicraft is fun and easy') than boys (18.5%). Boys felt more successful in *plays and games* ('I am really good at playing games') than girls did. 'Coping with friends' was formed from expressions like 'I am really good at making friends' (boy) and 'I always listen to my friend's opinions and help others' (girl). The difference between genders was also noticeable in *drawing* ('I like a lot drawing and I am very good in it', said one girl). The category of *self-confidence* meant that children answered more generally that 'everything is easy for me', 'I can already everything', or 'I am good in everything'. More girls (6.9%) than boys (1.1%) thought that they were good at music. The category of *not able to specify* meant that the child stated something like 'I do not know' or 'I am not able to answer'.

### Children's beliefs of their failure at school

The analysis also revealed ten categories of children's beliefs regarding their own failure in school (see Table 2). The children were asked, 'What is there at school that you do not yet know?' There could be no or several expressions from the same child.

**Table 1.** Children's beliefs regarding their success at the end of the first school year (total number of expressions was 1,100 [511 from boys and 589 from girls]).

Categories of success-related beliefs	Boys (n = 270)		Girls (n = 274)		Total (N = 544 children)	
	f	%	F	%	f	%
1. Mathematics	194	71.9	171	62.4	365	67.1
2. Literacy	121	44.8	145	52.9	266	48.9
3. Physical education	98	36.3	62	22.6	160	29.4
4. Handicraft	50	18.5	101	36.9	151	27.8
5. Plays and games	14	5.2	4	1.5	18	3.3
6. Coping with friends	12	4.4	13	4.7	25	4.6
7. Drawing	11	4.1	57	20.8	68	12.5
8. Self-confidence	4	1.5	14	5.1	18	3.3
9. Music	3	1.1	19	6.9	22	4.0
10. Not able to specify	4	1.4	3	1.1	7	1.3



**Table 2.** Children's beliefs about their failure at the end of the first school year (total number of expressions was 521 [264 from boys and 257 from girls]).

Categories of failure beliefs	Boys (n = 270)		Girls (n = 274)		Total (N = 544 children)	
	f	%	F	%	f	%
1. No failure	78	28.9	106	38.7	184	33.8
2. Literacy	75	27.8	38	13.9	113	20.8
3. Mathematics	23	8.5	42	15.3	65	11.9
4. Hard tasks	16	5.9	12	4.4	28	5.1
5. Handicraft	14	5.2	12	4.0	26	4.8
6. Drawing	13	4.8	9	3.2	22	4.0
7. Physical education	10	3.7	12	4.4	22	4.0
8. Music	3	1.1	–	–	3	0.6
9. Not able to specify	20	7.4	19	6.9	39	7.2
10. No answer	12	4.4	7	2.6	19	3.5

The category of *no failure* consisted of expressions that clearly indicated the child's belief in their abilities and strong performance when asked about those things that were not yet known at school. Such children perceived that school tasks and homework were easy, and they learned easily without help, so they would indicate that they already knew everything at school (boys: 28.9%; girls: 38.7%). They stated, for example, 'There is nothing I cannot do at school; well, sometimes I have difficulties with my mittens' (girl), or, 'Everything is so easy at school' (boy). More boys (27.8%) than girls (13.9%) expressed that they had difficulties or did not perform well in *literacy*. 'I am not a fluent reader, although I already can read some things. For example, yesterday, I read a sign on the side of the road', said one boy. In turn, one girl stated, 'I sometimes do not remember the letters. Writing is so hard'. Girls (15.3%) found *mathematics* harder at school than boys (8.5%). For example, according to one girl, 'I'm a really bad performer in difficult math calculations' (girl), whereas one boy said, 'I do not know how to make difficult additions and subtractions yet'. Some children expressed beliefs about *hard tasks* that were 'far too difficult' (boys: 5.9%; girls: 4.0%). There were slight differences between the beliefs of boys and girls about performance in *physical education* and *music*, and in general, these subjects were perceived as fun and easy. The category of *not able to specify* meant that the child stated, for example, 'I do not know', or 'I cannot answer', while the category of *no answer at all* meant that there was a blank space on the interview form.

### Children's beliefs of feedback they receive

Finally, we examined children's beliefs regarding received feedback. The analysis revealed six categories of children's beliefs of received feedback based on their good school performance (see Table 3). The children were asked, 'In which subjects do you perform especially well at school?' followed by, 'How do you know this?' There could be one or several expressions of feedback received from the same child.

There were three sub-categories under the category *focused on tasks*. Good performance without help was expressed, for example, as 'I can immediately do the tasks as they should be done' (boy) and 'I can always do all the tasks correctly, and I immediately understand the teacher's instructions without help' (girl). Easy tasks were expressed by simply stating that tasks were easy or that they were easy to perform. Good remarks were expressed, for example, by stating, 'There was only one time that I did not get the highest remark on my tests' (boy), or 'The math test went well' (girl). Boys (15.2%) expressed their self-concepts as learners by referring to their quicker performance compared to others; in contrast, girls (6.2%) stated things like, 'I can do all the tasks and do them faster than others'. However, girls (15.3%) expressed somewhat more confidence than boys (11.5%) when assessing their good school performance. According to one girl, 'In my own opinion, my drawings are great'. Both boys and girls equally expressed their better performance compared to others: 'I

**Table 3.** Received feedback based on children's success beliefs (total number of expressions was 738 [361 from boys and 377 from girls]).

Categories of feedback	Sub-category	Boys (n = 270)		Girls (n = 274)		Total (N = 544)	
		f	%	F	%	f	%
1. Focused on tasks	Good performance without help	94	34.8	106	38.7	200	36.8
	Easy tasks	62	23.0	60	21.9	122	22.4
	Good remarks	13	4.8	13	4.7	26	4.8
2. Self-concept of success	Quick performance compared to others	41	15.2	17	6.2	58	10.7
	Own opinion of good performance	31	11.5	42	15.3	73	13.4
	Better performance compared to others	12	4.4	12	4.3	24	4.4
3. Motivation	Pleasant tasks	27	10.0	29	10.6	56	10.3
	A lot of practicing done	22	8.1	25	9.1	47	8.6
4. Feedback provider	Teacher	20	7.4	36	13.1	56	10.3
	Parents	16	5.9	27	10.0	43	7.9
	Peers	8	3.0	3	1.1	11	2.0
5. Not able to specify		9	3.3	5	1.8	14	2.6
6. No answer		6	2.2	2	0.7	8	1.5

am happy when I can perform tasks better than others', said one boy, and 'I always do extra tasks more than others in our class', said one girl. Children's *motivation* as a core category of receiving feedback was expressed with the categories of pleasant tasks and a lot of practice. These showed only some differences between boys and girls. Both a boy and girl stated, 'The school tasks are nice' and 'I know I perform well because I have practiced a lot'. Both boys and girls stated that 'I really like those things at school in which I perform well'. Approximately 10% of the children's expressions indicated that they received feedback from their teachers when they performed well. Girls received more feedback from their teachers and parents than boys regarding their good school performance. The children's peers also provided feedback about their good school performance. 'My teacher has called me a math master', said one boy. According to one girl, 'I wasn't before able to complete my math tasks during lessons, but nowadays, I even get additional tasks. Teachers praise me and tell me how well I have performed, and I agree. I used to make mistakes with my reading, but now I'm also better in reading'. According to another girl, 'The teacher and my friends have praised my about my reading'. One boy said, 'My parents have praised me'. 'My mother has told me I am good at school', stated a girl. 'My friends have told me that I am the best reader in our class' said another boy, and 'I am good at handicraft and maths and my friends praise me a lot for those', reported another girl. The category *not able to specify* meant that the child stated, for example, 'I do not know' or 'I cannot answer'.

The analysis revealed six categories of children's beliefs of received feedback based on their poor school performance (see Table 4). After the children were asked, 'What is there at school that you do not yet know?', their parents prompted the question 'How do you know this?' Only one expression of feedback was received from each child.

The category of *focused on tasks* was analyzed in terms of three sub-categories. Poor performance was very often expressed with examples like, 'Tasks just go wrong' (boy), or 'Letters are lost when writing and I cannot remember what they look like' (girl). Boys (39.3%) expressed poorer performance on tasks more often than girls (32.1%) did. In contrast, when the children were asked about the feedback they received for their poor performance, they expressed that they already knew everything and managed everything at school. In particular, girls (38.0%) showed good performance in their expressions, in contrast to boys (16.3%). 'I get bad remarks on math tests' (boy) and 'It shows in my test results' (boy) are examples of expressions in the category of bad remarks. The children's self-concepts of success emerged as their own opinions of poor performance, tardy performance compared to others, and the need for help. Children gave clear examples of their own understanding of poor performance: 'You will notice it yourself' (boy), and 'Then there just comes an idea to my mind that I don't know well enough' (girl). Tardy performance compared to others

**Table 4.** Received feedback based on children's failure beliefs.

Category	Sub-category	Boys (n = 270)		Girls (n = 274)		Total (N = 544)	
		f	%	f	%	f	%
1. Focused on tasks	Poor performance	106	39.3	88	32.1	194	35.7
	Good performance in everything	44	16.3	104	38.0	148	27.2
	Bad remarks	3	1.1	4	1.5	7	1.3
2. Self-concept of success	Own opinion of poor performance	30	11.1	15	5.5	45	8.3
	Tardy performance compared to others	11	4.1	–	–	11	2.0
	Need for help	7	2.6	2	0.7	9	1.7
3. Motivation	No interest in schooling	5	1.8	4	1.5	9	1.7
4. Feedback provider	Teacher	5	1.8	5	1.8	10	1.8
	Parents	–	–	2	0.7	2	0.3
	Peers	–	–	–	–	–	–
5. Not able to specify		15	5.6	9	3.3	24	4.4
6. No answer at all		44	16.3	41	14.9	85	15.6

appeared only in the boys' expressions, with statements like, 'My drawings are far poorer compared to others', or 'Others do not end up in remedial education'. The need for help refers to the child not being able to cope with the tasks without help: 'I often ask for help', said one boy. The expression, 'I am just not interested' referred to the child's lack of motivation.

Only 17 children received feedback when performing poorly. One girl stated that 'Mother told me that I do not yet perform well'. Only five boys and girls reported in their expressions about receiving feedback from their teachers when performing poorly: 'I cannot yet write the words correctly and the teacher points out or says this when we are checking homework' (boy). According to another boy, 'The teacher has to repeat things to me over and over again, and my reading is still very slow. I find it difficult. I don't like reading at all'. One girl reported, 'Well, once I showed my tasks to the teacher, and she said that those were not right'. Children did not report receiving feedback from their peers when they failed to perform well.

## Discussion

The aim of the present study was to gain a deeper understanding of Finnish children's beliefs concerning their school performance at the end of their first school year. Specifically, we were interested in the kinds of beliefs regarding their success or failure in school performance that children have. Furthermore, we explored possible differences in beliefs between girls and boys. Finally, we examined the kinds of feedback children received according to their school performance.

The results showed that the children had positive beliefs about their success in different school subjects, coping with friends, and the sense that everything was easy at school. Young children's self-concepts regarding math and reading have been examined in the literature, and our findings are in line with the reports that boys typically demonstrate more beliefs in good math performance than girls do; in addition, girls demonstrate better performance beliefs with respect to literacy (e.g. Aunola et al., 2002; Eccles, 1993; Herbert & Stipek, 2005). It is also possible that girls are actually better performers in literacy than boys are; therefore, girls would also have better self-concepts in literacy, and they may value literacy more (see also Wigfield et al., 1997). A previous study by Eccles (1993) showed that first-grade boys typically showed interest in physical education and maths, while girls showed more interest in music and literacy. It is also worth noting that research conducted in the pre-primary education context shows that the kinds of expectations children had before their formal schooling (Eskelä-Haapanen et al., 2017) children also reflect their good performance in these subject areas at the end of the first grade.

According to previous studies, achievement-related beliefs direct children's efforts to perform well in certain subjects (e.g. Bandura, 1997; Eccles et al., 2005; Wigfield et al., 2006). Spinath and Spinath (2005b) also found that enjoyable tasks are connected with progress in learning and the

motivation to learn more (see also Wigfield & Eccles, 2000). Furthermore, the children in the present study expressed their beliefs that they were good at getting along with friends. Previous studies have shown that being able to accompany existing friends to the same classroom and make new friends seemed to be very important for the children at the beginning of their school years (Eskelä-Haapanen et al., 2017; Pianta, 1999). Girls expressed much more than boys did in their beliefs that they were good performers in handicraft and drawing. This result is quite the opposite of the findings in Freedman-Doan et al. (2000) study, which showed that both boys and girls selected drawing and painting as activities at which they were best, with boys even more than girls. It may be possible that teachers can easily offer different tasks according to gender, or girls naturally like crafting and drawing more than boys do.

More than a third of the girls and almost a third of the boys had high self-concepts as good performers at school. It is acknowledged that when children are starting their schooling, they typically have high motivation (Lerkkanen et al., 2013; Wigfield & Eccles, 2000), which may be unrealistic and even too optimistic. Going back to the previously established understanding of children's beliefs in their good school performance in math and literacy, the beliefs in one's own poor performance in the same subjects were completely parallel: boys reflected their performance in literacy as being poor, and girls' beliefs in their poor performance in math was revealed.

The teacher's role as feedback provider was quite rare according to the children's reports, although it has been determined elsewhere that teachers' feedback is essential for promoting children's learning, motivation, and competence beliefs at the beginning of schooling (Lerkkanen & Pakarinen, 2019; Spinath & Spinath, 2005a), as well as their positive self-concepts as learners (Leflot et al., 2010). Furthermore, feedback is critical for a successful future school career (Viljaranta et al., 2009), and early encounters with success and failure are powerful shapers of one's self-concept as a learner (Viljaranta et al., 2009). Only 10% of the children felt that they received feedback from their teachers when they performed well, and they received even less feedback when performing poorly. Girls reported receiving feedback slightly more often than boys, especially when they performed successfully. Similar findings also emerged in Brophy's (1981) study. Even if children have a positive self-concept as learners at the beginning of their schooling, there is a risk of this weakening or being lost without encouraging feedback. Teachers should concentrate on giving ongoing targeted feedback to promote children's self-concepts as learners and enhance their learning (Hattie & Timperley, 2007). There should also be further instructional support for teachers' and children's interactions in the classroom (Hamre et al., 2013). In particular, corrective feedback is powerful in the beginning of one's school career when it is specifically related to new skills and tasks (Hattie & Timperley, 2007). One child reported finding success in mathematics when the teacher praised him. According to Hattie and Timperley (2007), feedback targeted at the personality is rarely effective. But still, it can promote classroom quality when the teacher is emotionally supportive (Hamre & Pianta, 2005).

The findings presented here have some practical implications for teachers. First, the importance of feedback cannot be denied, especially in the learning of young children (Hamre et al., 2013; Hamre & Pianta, 2005; Hattie & Timperley, 2007) when one's self-concept as a learner is still being shaped (Arens et al., 2016; Dapp & Roebbers, 2018). Feedback should be focused on the task, the learning process, and the child's behaviour. School children should always be aware of targeted goals to regulate their behaviour and direct their learning toward these goals with the help of the teacher's feedback. According to Hattie and Timperley (2007), both teachers and children should also be aware of where they are going, how they are getting there, and what is happening next; in other words, anticipation should be encouraged through feedback. Attention should be paid to enhancing dialogue and facilitating warm collaboration between children and teachers (e.g. Hamre et al., 2013), because in an emotionally supported classroom, giving feedback with regards to failure does not weaken a child's self-concept as a learner. Furthermore, during teacher education, more emphasis should be placed on student teachers' acquisition of knowledge regarding the effect of feedback on children's self-concepts as learners and thereby support positive learning practices.

## Limitations

There are some limitations that need to be considered, also considering study's reliability review. First, the children's answers were not compared to their actual skill level, success in academic subjects, or the teachers' reflections on children's achievement. This above mentioned could be considered in future studies. Second, the results are based on the children's reports, and the home learning environments and the teachers' instructional practices were not examined. Furthermore, the feedback given by the teachers was not observed but it was interpreted by researchers based on children's answers. Third, we did not directly ask about the kind of feedback the teachers gave, so the children's thoughts about feedback at the interviews could have been a bit random. Young children's beliefs regarding teachers' feedback should therefore be studied more thoroughly in the future. Fourth, some answers were short, so, in the future clarifications could be asked straight from children in connection with the recorded interviews. Finally, we did not know the reason for the lack of answers in some cases. Some of the unanswered questions could be attributed, for example, to the child not being at home or awake when the parents completed the questionnaires.

## Conclusion

The present study makes important contributions to the literature on children's beliefs of their school performance at the early stages of schooling. Specifically, this work is among the few studies to examine young children's own beliefs of their individual learning outcomes at the end of the first school year. It is important to give even young children their own voices to better address their needs and develop instructional practices respectively. Accordingly, data were gathered from children interviewed by their parents and using open-ended questions and not through Likert-scaled options. Existing research mostly concerns children's interest and self-concept of ability but is typically not able to address reasons behind these perceptions and beliefs. The present study, however, can help us to understand the development of children's self-concept of ability as learners by addressing children's beliefs on their skills and the areas that cannot yet do so well, as well as how they know these issues. It is important to gain understanding on how children themselves perceive their skills and how their perceptions are built and developed. The children seemed to have quite a precise belief of their own learner self-concepts when expressing their successes and failures during the first school year. The children also expressed how they knew what they already could and could not yet do so well at school, and this was perceived as receiving feedback. These results can be used to implement modes of teaching and give specific feedback to support learning in those subjects and contents that children seem to have the most difficulties with as learners, promote collaboration with parents and designing curriculum. Furthermore, the differences between the boys' and girls' beliefs can also be considered to motivate them and cultivate their positive self-concepts as learners. For the children to positively continue along the school path, it is essential that there is classroom interaction that supports formative assessment, and children's successes and failures in learning and behaviour should be made visible through feedback. In addition, teachers should receive adequate training on the development of children's self-concept of ability and the importance of giving timely, specified, and targeted feedback during already teacher education and furthermore during in-service teaching.

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## References

- Arens, A. K., Marsh, H. W., Craven, R. G., Yeung, A. S., Randhawa, E., & Hasselhorn, M. (2016). Math self-concept in pre-school children: Structure, achievement relations, and generalizability across gender. *Early Childhood Research Quarterly*, *36*, 391–403.
- Aunola, K., Leskinen, E., Onatsu-Arviolommi, T., & Nurmi, J.-E. (2002). Three methods for studying developmental change: A case of reading skills and self-concept. *British Journal of Educational Psychology*, *72*, 343–364. doi:10.1348/000709902320634447
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Bong, M., & Skaalvik, E. M. (2003). Academic self-concept and self-efficacy: How different are they really? *Educational Psychology Review*, *15*, 1–40. doi:10.1023/A:1021302408382
- Bouffard, T., Marcoux, M.-F., Vezeau, C., & Bordeleau, L. (2003). Changes in self-perceptions of competence and intrinsic motivation among elementary schoolchildren. *British Journal of Educational Psychology*, *73*(2), 171–186. doi:10.1348/00070990360626921
- Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research*, *51*(1), 5–32. doi:10.3102/00346543051001005
- Burnett, P. C. (2002). Teacher praise and feedback and students' perceptions of the classroom environment. *Educational Psychology*, *22*(1), 5–16. doi:10.1080/01443410120101215
- Danby, S. (2002). The communicative competence of young children. *Australian Journal of Early Childhood*, *27*(3), 25–30. doi:10.1177/183693910202700306
- Danby, S., Ewing, L., & Thorpe, K. J. (2011). The novice researcher: Interviewing young children. *Qualitative Inquiry*, *17*, 74–84. doi:10.1177/1077800410389754
- Dapp, L. C., & Roebers, C. M. (2018). Self-concept in kindergarten and first grade children: A longitudinal study on structure, development, and relation to achievement. *Psychology (Savannah, Ga)*, *9*, 1605–1629. doi:10.4236/psych.2018.97097
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97–140. doi:10.1080/10888691.2018.1537791
- Dermitzaki, I., & Efklides, A. (2000). Aspects of self-concept and their relationship to language performance and verbal reasoning ability. *The American Journal of Psychology*, *113*(4), 621–637. doi:10.2307/1423475
- Eccles, J. S. (1993). School and family effects on the ontogeny of children's interests, self-perceptions, and activity choices. In J. Jacobs (Ed.), *Nebraska symposium on motivation, 1992: Developmental perspectives on motivation* (pp. 145–208). Lincoln: University of Nebraska Press.
- Eccles, J. S., O'Neill, S. A., & Wigfield, A. (2005). Ability self-perceptions and subjective task values in adolescents and children. In K. A. Moore, & L. H. Lippman (Eds.), *What do children need to flourish? The search institute series on developmentally attentive community and society* (pp. 237–249). Boston, MA: Springer. doi:10.1007/0-387-23823-9\_15
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values and goals. *Annual Review Psychology*, *53*, 109–132. doi:10.1146/annurev.psych.53.100901.135153
- Eccles, J. S., Wigfield, A., Harold, R. D., & Blumenfeld, P. (1993). Age and gender differences in children's self- and task perceptions during elementary school. *Child Development*, *64*, 830–847. doi:10.1111/j.1467-8624.1993.tb02946.x



- Eskelä-Haapanen, S., Lerkkanen, M.-K., Rasku-Puttonen, H., & Poikkeus, A.-M. (2017). Children's beliefs concerning school transition. *Early Child Development and Care*, 187(9), 1446–1459. doi:10.1080/03004430.2016.1177041
- Finnish national core curriculum for basic education. (2014). Helsinki: Finnish National Agency for Education. ISBN 9789521362590.
- Freedman-Doan, C., Wigfield, A., Eccles, J. S., Blumenfeld, P., Arbretton, A., Harold, R. D., & D, R. (2000). What am I best at? Grade and gender differences in children's beliefs about ability improvement. *Journal of Applied Developmental Psychology*, 21(4), 379–402. doi:10.1016/S0193-3973(00)00046-0
- Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72(2), 625–638. doi:10.1111/1467-8624.00301
- Hamre, B. K., & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development*, 76, 949–967. doi:10.1111/j.1467-8624.2005.00889.x
- Hamre, B. K., Pianta, R. C., Downer, J. T., DeCoster, J., Mashburn, A. J., Jones, S. M., ... Hamagami, A. (2013). Teaching through interactions: Testing a developmental framework of teacher effectiveness in over 4,000 classrooms. *The Elementary School Journal*, 113(4), 461–487. doi:10.1086/669616
- Harris, L. R., Brown, G. T., & Harnett, J. A. (2014). Understanding classroom feedback practices: A study of New Zealand student experiences, perceptions, and emotional responses. *Educational Assessment, Evaluation and Accountability*, 26, 107–133. doi:10.1007/s11092-013-9187-5
- Hattie, J. (2009). *Visible learning. A synthesis of over 800 meta-analyses related to achievement*. London: Routledge.
- Hattie, J., Gan, M., & Brooks, C. (2016). Instruction based on feedback. In R. E. Mayer, & P. A. Alexander (Eds.), *Handbook of research on learning and instruction* (pp. 290–324). Milton Park, Abingdon-on-Thames, Oxfordshire, England, UK: Routledge.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81–112. doi:10.3102/003465430298487
- Herbert, J., & Stipek, D. (2005). The emergence of gender differences in children's perceptions of their academic competence. *Journal of Applied Developmental Psychology*, 26, 276–295. doi:10.1016/j.appdev.2005.02.007
- Hicks, C. M., Liu, D., & Heyman, G. D. (2015). Young children's beliefs about self-disclosure of performance failure and success. *British Journal of Educational Psychology*, 33(1), 123–135. doi:10.1111/bjdp.12077
- Krippendorff, K. (2013). *Content analysis. An introduction to its methodology* (3rd ed.). California, CA: Sage Publications.
- Leflot, G., Onghena, P., & Colpin, H. (2010). Teacher–child interactions: Relations with children's self-concept in second grade. *Infant and Child Development*, 19(4), 385–405. doi:10.1002/icd.672
- Lerkkanen, M.-K., Kikas, E., Pakarinen, E., Poikonen, P.-L., & Nurmi, J.-E. (2013). Mothers' trust toward teachers in relation to teaching practices. *Early Childhood Research Quarterly*, 28, 153–165. doi:10.1016/j.ecresq.2012.04.005
- Lerkkanen, M.-K., & Pakarinen, E. (2016–2017). Teacher and Student Stress and Interaction in Classroom (TESSI). doi:10.17011/jyx/dataset/77741.
- Lerkkanen, M.-K., & Pakarinen, E. (2019). The role of parental beliefs and practices in children's motivation in the changing world. In E. N. Gonida, & M. S. Lemos (Eds.), *Motivation in education at a time of global change: Theory, research, and implications for practice* (pp. 151–167). Bingley, West Yorkshire: Emerald Publishing Limited. Advances in Motivation and Achievement, 20. doi:10.1108/S0749-742320190000020008
- Marsh, H. W., & Martin, A. J. (2011). Academic self-concept and academic achievement: Relations and causal ordering. *British Journal of Educational Psychology*, 81, 59–77. doi:10.1348/000709910X503501
- Marsh, H. W., & Yeung, A. S. (1998). Longitudinal structural equation models of academic self-concept and achievement: Gender differences in the development of math and English constructs. *American Educational Research Journal*, 35(4), 705–738. doi:10.2307/1163464
- Meece, J. L., & Miller, S. D. (2001). Longitudinal analysis of elementary school students' achievement goals in literacy activities. *Contemporary Educational Psychology*, 26, 454–480. doi:10.1006/ceps.2000.1071
- Musu-Gillette, L. E., Wigfield, A., Harring, J. R., & Eccles, J. S. (2015). Trajectories of change in students' self-concepts of ability and values in math and college major choice. *Educational Research and Evaluation*, 21, 343–370. doi:10.1080/13803611.2015.1057161
- Nurmi, J.-E., & Aunola, K. (2005). Task-motivation during the first school years: A person-oriented approach to longitudinal data. *Learning and Instruction*, 15(2), 103–122. doi:10.1016/j.learninstruc.2005.04.009
- Nurmi, J.-E., Hirvonen, R., & Aunola, K. (2008). Motivation and achievement beliefs in elementary school: A holistic approach using longitudinal data. *Unterrichtswissenschaft*, 36, 237–254.
- OECD. (2019). PISA 2018 results. Volume I. *What students know and can do*. doi:10.1787/5f07c754-en.
- Patrick, H., Mantzicopoulos, P., Samarapungavan, A., & French, B. F. (2008). Patterns of young children's motivation for science and teacher–child relationships. *The Journal of Experimental Education*, 76, 121–144. doi:10.3200/JEXE.76.2.121-144
- Patton, M. Q. (2015). *Qualitative research and evaluation methods. Integrating theory and practice* (4th ed.). Thousand Oaks, CA: Sage.
- Pesu, L., Viljaranta, J., & Aunola, K. (2016). The role of parents' and teachers' beliefs in children's self-concept development. *Journal of Applied Developmental Psychology*, 44, 63–71. doi:10.1016/j.appdev.2016.03.001

- Pianta, R.-C. (1999). *Enhancing relationships between children and teachers*. Washington, DC: American Psychological Association. doi:10.1037/10314-000
- Skaalvik, E. M. (1994). Attribution of perceived achievement in school in general and in maths and verbal areas: Relations with academic self-concept and self-esteem. *British Journal of Educational Psychology*, 64(1), 133–143. doi:10.1111/j.2044-8279.1994.tb01090.x
- Spinath, B., & Spinath, F. M. (2005a). Development of self-perceived ability in elementary school: The role of parents' perceptions, teacher evaluations, and intelligence. *Cognitive Development*, 20(2), 190–204. doi:10.1016/j.cogdev.2005.01.001
- Spinath, B., & Spinath, F. M. (2005b). Longitudinal analysis of the link between learning motivation and competence beliefs among elementary school children. *Learning and Instruction*, 5(2), 87–102. doi:10.1016/j.learninstruc.2005.04.008
- Stipek, D. J., & MacIver, D. (1989). Developmental change in children's assessment of intellectual competence. *Child Development*, 60, 521–538. doi:10.2307/1130719
- Sylvä, K. (1994). School influences on children's development. *Association for Child Psychology and Psychiatry*, 35(1), 135–170. doi:10.1111/j.1469-7610.1994.tb01135.x
- United Nations Development Program. (2018). *Human development indices and indicators 2018 Statistical update*. The global gender gap report 2018. <https://hdr.undp.org/en/content/human-development-indices-indicators-2018-statistical-update>
- Upadyaya, K., Viljaranta, J., Lerkkanen, M. K., Poikkeus, A. M., & Nurmi, J. E. (2012). Cross-lagged relations between kindergarten teachers' causal attributions, and children's interest value and performance in mathematics. *Social Psychology of Education*, 15, 181–206. doi:10.1007/s11218-011-9171-1
- Väljijärvi, J., & Sulkunen, S. (2016). Finnish school in international comparison. In H. Niemi, A. Toom, & A. Kallioniemi (Eds.), *Miracle of education: The principles and practices of teaching and learning in Finnish schools* (pp. 1–21). Rotterdam: Sense publishers. <https://www.sensepublishers.com/files/9789460918117PR.pdf>
- Viljaranta, J., Lerkkanen, M.-K., Poikkeus, A.-M., Aunola, K., & Nurmi, J.-E. (2009). Cross-lagged relations between task motivation and performance in arithmetic and literacy in kindergarten. *Learning and Instruction*, 19(4), 335–344. doi:10.1016/j.learninstruc.2008.06.011
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Watts, T. W., Duncan, G. J., Chen, M., Claessens, A., Davis-Kean, P. E., Duckworth, K., ... Susperreguy, M. I. (2015). The role of mediators in the development of longitudinal mathematics achievement associations. *Child Development*, 86(6), 1892–1906. doi:10.1111/cdev.12416
- Weidinger, A. F., Steinmayr, R., & Spinath, B. (2019). Ability self-concept formation in elementary school: No dimensional comparison effects across time. *Developmental Psychology*, 55, 1005–1018. doi:10.1037/dev0000695
- Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, 25, 68–81. doi:10.1006/ceps.1999.1015
- Wigfield, A., & Eccles, J. S. (2002). The development of competence beliefs, expectancies for success, and achievement values from childhood through adolescence. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation* (pp. 91–120). Cambridge, MA: Academic Press. doi:10.1016/B978-012750053-9/50006-1
- Wigfield, A., Eccles, J. S., Fredricks, J. A., Simpkins, S., Roeser, R. W., & Schiefele, U. (2015). Development of achievement motivation and engagement. In M. E. Lamb, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science (7th ed., Vol. 3)* (pp. 657–699). Hoboken, NJ, U.S.: John Wiley & Sons Inc. doi:10.1002/9781118963418childpsy316
- Wigfield, A., Eccles, J. S., & Rodriguez, D. (1998). The development of children's motivation in school contexts. *Review of Research in Education*, 23, 73–118. doi:10.2307/1167288
- Wigfield, A., Eccles, J. S., Schiefele, U., Roeser, R. W., & Davis-Kean, P. (2006). Development of achievement motivation. In W. Damon, N. Eisenberg, & R. M. Lerner (Eds.), *Handbook of child psychology: Social, emotional, and personality development (6th ed., Vol. 3)* (pp. 933–1002). Hoboken, NJ, U.S.: John Wiley & Sons Inc.
- Wigfield, A., Eccles, J. S., Yoon, K. S., Harold, R. D., Arbretton, A. J. A., Freedman-Doan, C., & Blumenfeld, P. C. (1997). Change in children's competence beliefs and subjective task values across the elementary school years: A 3-year study. *Journal of Educational Psychology*, 89(3), 451–469. doi:10.1037/0022-0663.89.3.451
- Wigfield, A., & Karpathian, M. (1991). Who am I and what can I do? Children's self-concepts and motivation in achievement situations. *Educational Psychologist*, 26, 233–261. doi:10.1080/00461520.1991.9653134
- World Economic Forum. (2018). <https://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf>