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RESEARCH ARTICLE

Gifted Early Readers' Health Development and Well-Being: A Survey on Teachers' Attitudes, Beliefs, Knowledge and Pedagogical Practices in the Regular Classroom

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ABSTRACT

Children's well-being at school has only recently attracted much attention, in particular when linked to school closure due to the COVID-19 pandemic, the assumption being that children feel well when being able to go to school. However, gifted early readers (i.e., those who have learned to read all by themselves and show good reading skills already at the beginning of primary education) are known to be rather bored in particular in reading lessons if their skills are not promoted according to their accelerated development and needs. Teachers' lack of knowledge how to provide adequate support for gifted early readers has been linked to detrimental effects on these children's development and may lead to their school underachievement at early and/or later stages of formal education.

In this paper, we aim to shed light onto teachers' attitudes, beliefs, and knowledge when dealing with gifted early readers in primary school education to find out whether their pedagogical actions in a regular classroom are adequate to meet the gifted early readers' needs.

In an online questionnaire, primary school teachers from Austria (N = 41) who had active experience with early readers were asked to respond to eleven subscales covering child-, teacher-, and school-related factors as well as pedagogical actions in relation to gifted early readers in primary school on a 5-point Likert-scale.

The results showed that teachers' positive attitudes towards children's advanced skills and beliefs were child-oriented and supportive in general and that they were interested in the child's competences and reading habits. Their actions were in general not inducing bullying. However, their pedagogical actions did not seem to meet the children's needs what might be due to a lack of specific knowledge about gifted children, and early readers in particular.

Teachers in primary school need professional development opportunities such as training courses for the gifted early readers in order to gain more in-depth knowledge about these children's needs and how these can be met with adequate pedagogical actions in the regular classroom, how their skills and knowledge can be best promoted to grant healthy development and to prevent boredom, bullying and academic underachievement.

Introduction

One highly important skill for academic success is reading. While some children lack emergent literacy skills in general upon entry to formal education, others grow up with a variety of early literacy experiences, and some children are even able to read fluently. In countries such as Austria and Germany, reading instruction in the primary classroom is considered to be the duty of primary school teachers – all school books are conceptualized that way. The regular curriculum entails the consecutive instruction of single letters for learning to read and write. While this way of instruction suits children with little literacy experience and limited letter knowledge, those being able to read experience boredom often starting right from the first day or week of formal schooling. This study focuses on those children, the gifted early readers, and their well-being at school which is highly important for children's self-esteem, academic, social and healthy development[1]. The psychological consequences of the Covid-9 pandemic for school children have attracted extremely strong attention with the feelings of boredom, stress, and dissatisfaction being predominant[2] whereas for these gifted early readers, boredom is their usual state in particular when attending reading lessons.

GIFTED EARLY READERS AND READING

Early readers are those children who begin school and have taught themselves to read prior to formal instruction in educational institutions. Importantly, this process was self-initiated and self-motivated (i.e., they have not been instructed by parents, older siblings, kindergarten caretakers etc.). Their high motivation is related to objects and activities (such as reading) and is reported to be manifested as curiosity, high level of thirst and quest for knowledge[3-4].

Reading entails having to "crack the written language code", i.e.,

i) to realize that there is a link between written letters and sounds (or visual codes and meaningful language),

ii) to figure out this grapheme-phoneme correspondence (i.e., that a particular letter is pronounced in a certain way), and to understand and apply these rules while reading. To do so, it is necessary to have problem-solving skills, an understanding of complex ideas, and logical thinking[5] and to have developed good letter knowledge and phonological awareness (i.e., the ability to notice sounds/phonemes, syllables etc. in a word[6].

iii) Reading is a kind of correspondence task, and the related task demands depend on the type of language. For alphabetic orthographies, there is a distinction between transparent (also called shallow) orthographies, in which letter-sound matches are very consistent (e.g., in Finish), and opaque (or deep) orthographies with each letter or group of letters having different options how they can be represented as sounds[7] (e.g., English). The German language is somewhat in the middle between these extremes, being not consistently regular in the representation of sound. A high ability to concentrate and superior recall are crucial, which make it easier, for example, to memorize the grapheme-phoneme correspondence[8] and its diversions from the general pattern of correspondence. Early readers must show willingness to make an effort and persistent curiosity and determination[9-10].

iv) Reading goes beyond decoding letters and finding the correct sound for them; reading is putting letters or syllables together to recognize the word and to find its meaning. Consequently, the size of children's vocabulary has a strong influence on their decoding skills very early in the process of learning to read[11], i.e., children with a large vocabulary have an easy time finding words quickly when reading. But most of all, reading is to actively construct the meaning of sentences and texts.

EARLY READING AND (HIGH) SOCIO-ECONOMIC STATUS

Materials with script in the children's surrounding have been suggested to play a vital role for early reading development: Early readers have the opportunity to deal with books, can be highly interested in them, maybe have seen family members read and they have read to them from different books. The availability of written material and of reading models may have facilitated and promoted the process of learning to read. Therefore, it was initially assumed that early readers mostly came from high SES-families providing home literacy environments (HLE) enriched in literacy. In more detail, HLE includes general aspects of family literacy such as the number of books in a household, parental reading habits and involvement in their children's literacy activities, parents' attitudes toward shared reading and towards literacy. Growing up in such HLE allows children to gain a lot of early literacy experience, having a diversity of books at home

which were frequently read to them by parents with positive attitudes toward shared reading, and which they could look at.

Socioeconomic status-related factors of the family environment are parental education level, household income, family possessions (including a large number of books) and type of parental speech during parent-to-child interaction. High-SES parents tend to have a larger vocabulary and use more words. Their speech includes also grammatically more complex sentences when talking with their children than low-SES parents[12-13]. The way parents communicate with their children is thought to have a positive impact on the development of their language and literacy skills[14-15].

While HLE is a relevant predictor for later reading skill of all children, it is not a decisive factor for self-initiated early reading development. Today, we know that gifted early readers often use commercials (e.g., on TV), company logos, street signs, words and sentences they are reading while being driven around in the car etc. as the starting point for starting to read. Early reading is therefore not limited to books, HLE and high SES and parental educational level. Gifted early readers are assumed to constitute a heterogeneous group of children[8] which includes the gifted disadvantaged children, i.e., those from low-SES or culturally diverse backgrounds. These have only recently received more attention in research, what led to the call for equity[16] since disadvantaged gifted students were found to be underrepresented in public school gifted and talented programs[16] often related to teachers' failure to identify them adequately and having very low expectations of these pupils[17-18].

EARLY READING AND GIFTEDNESS

With giftedness we refer to high level ability[19-21]. Following Gagné[19], an individual may be equipped with high aptitudes in the mental (i.e., intellectual, creative, social, and perceptual) and physical (i.e., muscular and motor control) domain, which surpass others (the top 10% are called gifts). In the course of development and maturation, environmental (i.e., social, interpersonal and educational) and interpersonal (i.e., physical, psychological, motivational and volitional) factors are suggested to influence (positively or negatively) the developmental process (composed of activities, invested time, energy, and progress).

The majority of gifted and talented students display their advanced abilities; this makes them readily identifiable when compared with classmates[22]. Gifted children often stand out because of their ability to read early[24], as they usually know how to read when they enter school. Most gifted children master literacy easier and faster, love to read and indulge in activities which are related to reading; they are appreciative of the beauty of reading and can read critically and creatively[24]. This early-reading ability can evolve from the developmental potential gifted children have[25], i.e., their strong motivation to learn, and their accelerated development can lead to early reading. These children often show both an early movement and early speech development which allowed them to explore their environment earlier than their peers, to interact with people surrounding them, to ask questions, to express themselves, and overall to simulate their cognitive development, to increase their knowledge and to train their information processing abilities[26].

Therefore, one important criterion for recognizing gifted young children is accelerated language development. Peculiar language skills have been demonstrated in Turkey in a comparative study on preschoolers, contrasting early literacy skills of gifted and typically developing children[27]. They revealed that gifted children performed superior in category naming, phonological awareness, letter knowledge, listening comprehension tasks and on a total score of early literacy. Early arithmetic skills are other important criteria for giftedness. In particular, the combination of early reading and early arithmetic skills shows a connection with giftedness[3,8,28].

Whether or not gifted children feel better when diagnosed, is not clear yet as results from studies on the relative psychological well-being of gifted and non-identified students is mixed[29-32]. Some suggest that gifted children excel anyway in many different domains what contributes to their success and hence their psychological well-being (the so-called harmony hypothesis)[33].

Others claim that being diagnosed may lead to being bullied (the so-called disharmony hypothesis) such as being called a "nerd" [33], due to their asynchronous development compared to their age peers[34]. Bullying is defined as verbally, physically and or psychologically aggressive behavior which is intentionally harmful to another person. Bullying occurs repeatedly over a period of time to an individual who is perceived by their peers to be less physically or psychologically powerful[35-36]. Gifted children reported on being teased over their giftedness already in kindergarten and on bullying peaking in sixth grade; importantly,

gifted children tend to hide such experiences of social weaknesses; consequently, parents and teachers often do not know about them[37-38]. Childhood bullying is increasingly recognized as a major public health concern[39].

EARLY READERS' NEEDS

When it comes to school and learning, there is scientifically strong agreement that gifted children have special and specific needs – substantially different from their age peers – which are both academic[40] and psychological[33] and that these are commonly not met by regular schools and general curricula[5,32,38]. Gifted children are aware of the mismatch between the task demands in the classroom and their own abilities, but need learning experiences which challenge them to reconceptualize prior knowledge and generate/create new knowledge through the learning process and to develop their skills[5]. Since most curricula focus on age norms, such an educational environment is not adequate. A meta-analysis has shown that gifted children's learning improved most in programs with substantially altered curricula such as acceleration (i.e., moving through the curriculum much faster or promoting them earlier to the next grade or higher than the classmates) and enrichment (i.e., a deepening or extending of the curriculum)[41].

Gifted early readers profit best from a reading instruction and program which includes at least the following two aspects[9]:

1) compacting the regular curriculum for them to pass through basic aspects quickly[4] because they need to learn at *their* pace[42]: First, reading subskills are assessed by a pretest or diagnostic procedure, then gifted early readers participate only in the instruction of the skills not yet mastered, or these may be explained individually or "discovered" by the children themselves[9].

2) A differentiated curriculum with content modifications specifically tailored to the children's needs[43] entails that they read more complex books in terms of theme, topic or genre compared to the regular curriculum; they may select them themselves, explore their interests in more depth and go clearly beyond the regular curriculum[9].

To that end, reading instruction may take place in homogeneous, ability grouping and pull-out programs to provide sufficient challenges for gifted students to fully realize their potential[9,44]. Which from among the three grouping models best supports both the gifted students' academic development and their psychological well-being is not certain yet[32], but evidence supporting both aspects has been reported for self-contained classes[31] as well as for pull-out gifted programs[45]:

(a) cluster models: all gifted students are in one classroom with other typically developing students;
(b) pull-out models: for a certain time each day or week, only the gifted students are instructed separately from their usual class; and
(c) full-time, self-contained models: the class consists only of gifted students.

EARLY READERS AND ACADEMIC SUCCESS VERSUS FAILURE

Studies on the effects of early reading ability on school success revealed that some children "gamble away" their lead and that early reading is no guarantee of school success, because special abilities are not directly related to achievement[19-21] (especially not in school terms measured by grades) (for an overview[28]). Although children who became early readers on their own initiative and who are able to read and do arithmetic at an early age are often highly successful in school, other gifted early readers are not and their school performance lags behind their actual abilities. In this context, we speak of underachievement, i.e., the substantial discrepancy between the existing ability and the actual school performance (for a more detailed description of how multifactorial underachievement is, with individual, family and/or school factors possibly contributing to cause underachievement, see[46]). Around 12% of gifted students have been referred to as underachievers[47]. A huge number of underachievers are actually gifted students[48] and up to 30% of pupils dismissed from school for inability and failure were gifted children[49-50]. Importantly, individual and environmental factors cause developmental, learning, or socio-emotional problems which hamper[28] their academic success[20,21,38]; in particular school factors have been neglected for a long time[46,51]. Also Gagnés inclusion of external factors, e.g., teachers or educational programs, gives room for the phenomenon of underachievement[21].

Gifted (underachieving) students following age-based curricula often reduce their intrinsic motivation for learning[52-54] as their high cognitive abilities are not called upon[55], their skills are not addressed, they suffer from a persistent lack of challenge for too long and too often and their needs in the regular classroom are not met[56]. This may result in problems in learning, cognitive and personal development, communication, and behavior[5,57], as well as in negative school experiences with frustration[5], disappointment,

stress, anxiety[58] and feelings of permanent boredom[5]. As a consequence, this may lead to reduced willingness to excel or to exert themselves, poorer academic outcomes and/or a general reluctance to go to school [38,46] (described already 30 years ago as the *spiral of disappointments*[59]).

In the regular classroom, gifted early readers show a variety of behaviors[60] when facing the dilemma of having to fit into an environment often unsuited to their level of learning[5]. Some of these behaviors will be described shortly: Some gifted early readers occupy themselves with other more challenging tasks such as secretly reading an exciting book under the bench, writing stories, poems, etc. in class during regular reading lessons. Some react to the perceived waste of time by trying to make the class more interesting for themselves by asking complicated questions, sometimes distracting the classmates sitting next to them or disturbing the entire lesson, e.g., by provoking or correcting the teacher. Some of the gifted children are patient, wait until the classmates have completed their tasks or have understood the material. Gifted students often do not show their abilities and skills in order to fit in[50,61]. This means that they try to adapt to the working level and speed in the regular classroom as they do not want to attract attention and want to avoid being called nerds, etc. or becoming an outsider because they are given additional tasks and thus often a special role among their classmates. – The complexity of the situation is aggravated by the fact that the children themselves realize that they are not similar to others[50].

Labels such as "gifted" may change how teachers perceive these students[62], how students perceive them[63], and how they perceive themselves[64]. Labels are attributes attached to an individual and have an impact on a student's self-esteem[65] and their well-being[66]. Labels may provide special opportunities (e.g., gifted education classes), which are not accessible without them. Sometimes, positive stereotypes linked to certain labels may also be related to positive associations with academic performance[67]. On the other hand, labels have been found to be negatively associated with students' psychological well-being and social connectedness[66,68].

TEACHERS, READING INSTRUCTION IN PRIMARY GRADES, AND THEIR SKILLS TO IDENTIFY GIFTED CHILDREN

The first two school years in primary schools in Germany and Austria are mostly aimed at imparting basic learning content and developing competence in German and mathematics. It is central to the acquisition of written language and should be tailored to the skills children already have when starting school[69]. Although dealing with heterogeneously composed learning groups has recently attracted much attention for teacher training, the focus is mostly on weaker performers, children with (increased) support needs in the sense of catching up on skills and abilities that have not yet been developed. Teachers are hardly prepared for the specific needs of early readers/gifted children.

For more than 30 years, it is known that whole-class reading instructions which early gifted readers have to follow have a negative impact on them (e.g., in terms of motivation and academic growth)[9]. Due to advanced language skills including larger vocabularies and advanced knowledge about a multitude of topics, their reading skills are usually two or more years above grade level[9]. Thus, they may lose interest in reading or lower their reading desire for more demanding texts[9]. Depending on teachers' experience, training, and knowledge regarding the specific needs of gifted students, educational practices (e.g., adaptive teaching, promotion) may vary for gifted students in mixed-ability classrooms[18,70]. Teachers may be aware of various possibilities to support gifted early readers, e.g. with offers in the afternoon, but often did not know how to structure their lessons for the children and how they could support them in regular lessons[46]. Results from a survey study[71] showed that although primary teachers expressed their willingness for reorganizing lessons to accommodate the early reader's need in general, they would improvise spontaneously. While the teachers in this sample seemed to generally support self-regulated enrichment (a personal book of their choice, a suitable pc-program), they would still ask them to behave quietly, require them to do what the others are doing because repetition would not do any harm. Most of them were clearly against pushing early reader into a special role such as making them read aloud particularly often, and also not when the other classmates could eat during a break between lessons. 60% would not ask early readers to practice with slow readers and 57% disagreed with them talking weekly about books they had read at home. Many of the teachers were in favour of clear segregation for reading lessons (making rather inadequate offers such as sending them off to the library on their own, giving them any pc-program, organizing a reading mentor who would read to the early reader) and revealed that they were against acceleration[71], although appropriate learning opportunities are

crucial to ensuring that young gifted readers do not 'miss out' on developing their potential further[72].

Primary school teachers have been found to lack competence in early identification of gifted children (for Indonesia[70]); this may be explained – but only to some extent – by the variability of ways to identify gifted (underachieving) children[51]. What is more, teachers have been found to know little about giftedness and seem to be strongly influenced by misconceptions about giftedness in particular stemming from popular media[18]; many have only superficial ideas about what problems gifted students face[50]. Directly linked to that are inaccurate teacher expectations on young gifted readers' achievement outcomes[72]. This is even more problematic because younger students' achievement outcomes were more directly impacted by teachers' expectations than were those of older students[73].

Research Questions

The theoretical and empirical background has shown that gifted children need adequate challenges to develop their potential and to feel well at school and in class. Against the background of the spiral of disappointments described above and the possible negative development of personality and performance (including willingness) to the point of loss of motivation and underachievement, it is therefore important to take a closer look at the very beginning of school attendance and at individual-, teacher- and school-related factors. Children's well-being largely depends on teachers' actions which are always strongly influenced by their attitudes, beliefs and their knowledge. Several teaching characteristics are mentioned as school-influencing factors for underachievement, e.g., curricula without differentiation, discrepancy between the teaching content and what a gifted child already knows or would want to learn, or little support from the teacher[46]. The age-appropriate curriculum usually structures learning in regular classrooms and many teachers believe it to be their duty to teach children how to read. Gifted children are doing great on complex tasks, but not on routine activities, simple memorization, or repetition exercises[74]. They suffer from repetition and training of skills they already master what may lead to extreme boredom, and ultimately to school absence and underachievement. In this questionnaire study the following research questions will be addressed:

How are teachers' attitudes towards and beliefs about gifted early readers and how much knowledge do they have about gifted early reading? Which pedagogical actions are typical for primary school teachers when dealing with gifted early readers?

Do they provide adequate measures to meet these children's needs in the regular classroom?

Methods

SAMPLE

Following the common local procedure for studies on teachers, the call for participation in the survey was sent to all primary school directors in Tyrol (a part in the West of Austria), along with the request for it to be forwarded to the teaching staff. A total of 41 datasets were included in the analysis of this study, six additional datasets had been excluded since two participants stopped after the first section, four others only opened the link to the surve, but did not provide any answer.

DESIGN AND INSTRUMENTS

We used an online questionnaire (soscisurvey.de) to gather data from Tyrolean elementary school teachers in Austria with prior evaluation of the content validity. The questionnaire was developed to examine attitudes, beliefs, knowledge and pedagogical actions in gifted education, specifically with early readers in the primary classroom.

The questionnaire was organized in eleven subscales, each containing five statements to which participants were asked to respond on a Likert scale (1 = *totally disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *agree completely*).

The subscales, reorganized in four factors, included

i. Child-related factors (with two subscales: information about a child's background, assessment of reading competence)
ii. Teacher-related factors (uncertainties when dealing with gifted early readers, beliefs about early readers),
iii. Teacher action-related factors (punitive actions, pedagogical actions and their justification), and
iv. School-related factors (early readers as topic among teachers in primary school).

Four additional subscales focussed on explicit pedagogical actions (see Festman 2023); these were instruction changes, internal differentiation, and adaptive action strategies, and special roles for early readers.

ANALYSES

For this article, seven of the eleven subscales were examined. The four remaining subscales, which are primarily concerned with didactic aspects of teaching, were analysed separately and published[71]. The mean and the standard deviation were calculated for each statement/question. In addition, special attention was paid to the frequency of responses to disagreement (1/2) and agreement (4/5), which are reported as a sum of frequency in terms of percentage.

Results

CHILD-RELATED FACTORS

Two-thirds of the teachers declared their disagreement with not caring much about the child's background (only 7% agree; M = 2.05; SD = 1.05). When asked how they would act in order to learn more about an early-reading child's background, in particular how the child had learned to read before entering school, almost all of them would directly ask the child (98%, M = 4.63; SD = 0.73) and would involve the child in a conversation about personal reading habits (98% M = 4.51; SD = 0.78). Most of them would talk to the child's parents (65%; M = 3.71; SD = 1.01), but 10% would not. Some of the teachers would ask the kindergarten staff (39%) whereas 47% would not do that (M = 2.88; SD = 1.35).

We asked teachers how they would assess early readers' reading skills. On average, they were mixed as to asking the child to read aloud a long text (39% would, but 32% would not; M = 3.00; SD = 1.18) but agreed with taking a closer look at different areas of reading (reading ability, reading speed, text comprehension, ...) (87%; 5% would not do that; M = 4.29; SD = 0.81). Half of them would not get the child tested (only 17% would support a standardized test, 49% would not; M = 2.49; SD = 1.14), but 68% would observe the child's other skills, e.g., in mathematics (7% would not; M = 3.08; SD = 0.84) and in the school language (55% would, 20% would not; M = 3.34; SD = 1.12).

TEACHER-RELATED FACTORS

Teachers mainly disagreed with not knowing how to handle early readers (61% disagreed, but 15% agreed; M = 2.20; SD = 1.27), and many (80%) disagreed with not reaching out for more information (only 5% agree; M = 1.56; SD = 1.00). In more detail, some of the teachers (39%) indicated that they would look out for a handbook on early readers (M = 2.85; SD = 1.35) whereas others would not do that (39%), and that 61% would rather not google on a teachers' forum how to deal with early readers (but 20% would; M = 2.17; SD = 1.36). On average, responses were mixed when asked whether or not they wanted to gain more information on dealing with heterogeneous groups by attending a training course (24% were against, 39% in favour of such a special course; M = 3.12; SD = 1.33).

98% of teachers agreed that it had happened to them that a child could already read very well when starting school (M = 4.68; SD = 0.62). 73% did not agree with the statement that early-reading children and their parents were always very exhausting, but 10% agreed (M = 1.85; SD = 1.12). And 63% did not support the view that early readers were only good because their parents had encouraged them at a very early age (but 15% supported it; M = 2.20; SD = 1.07). 78% disagreed that children needed teachers to learn to read properly, but 7% agreed (M = 1.88; SD = 1.02) and 85% did not agree with the statement, that if a child could not read a particular school print (used for Austrian school books in primary school), it could not read well at all, but 5% agreed (M = 1.58; SD = 0.87).

TEACHER ACTION-RELATED FACTORS

Most teachers (96%) disagreed with asking an early reader to sit all by him/herself to not distract other pupils (only 4% would do that; M = 1.49; SD = 0.93), 87% disapproved of the child to be seated in the backrows of the class (only 7% would do that; M = 4.29; SD = 1.03), 94% disagreed with secretly telling the child better not to show that it could already read, otherwise the other children might not like it (12% would agree; M = 1.27; SD = 0.90), and 85% disagreed with telling the child to water the flowers quietly, wipe the blackboard, etc. while the other children are reading (but 5% agreed; M = 1.63; SD = 1.02). 68% objected (but 17% agreed) to not having much time for an early reader (M = 2.17; SD = 1.63).

87% of the teachers objected to the statement that high-performing children were usually the outsiders in the class (only 10% agreed; M = 4.50; SD = 0.93). When asked for their degree of agreement with the statement that how to handle children being so very different in primary school is by making them all do the same tasks, 66% disagreed, whereas 20% agreed (M = 2.18; SD = 1.28). 66% of the teachers disagreed with their classes being designed for early readers (but 24% agreed; M = 3.83; SD = 1.36). 41% objected to the statement that all children should learn to read with a good textbook which the teacher had been using for years (32% agreed; M = 2.83; SD = 1.28) and 44% were against

getting a special booklet for the early reader (but 34% agreed; M = 2.78; SD = 1.49).

SCHOOL-RELATED FACTORS

Most of them (82%) did not agree with having made the experience that other teachers having early readers in their classes would complain about them (but 12% agreed; M = 1.93; SD = 1.10). They indicated that there were materials available in the school for skilled readers (80% agreed, only 10% disagreed; M = 4.07; SD = 1.01). 46% of the teachers declared that early readers were a topic discussed among the teaching staff (but 29% disagreed; M = 3.22; SD = 1.15), again 46% reported on not organising special courses for the skilled readers in the afternoon in their schools (only 22% did; M = 2.63; SD = 1.18), and 41% would seek advice from a colleague who is already more knowledgeable concerning highly skilled children (but 24% would not; M = 3.22; SD = 1.04).

Discussion

TEACHERS' CHILD-FRIENDLY, CHILD-ORIENTED APPROACH AND THEIR BELIEFS

Teachers in this sample had active experience with gifted early readers what was essential for the validity of the study, because only then could they include action tendencies based on their own experiences. They showed strong interest in the children themselves and in general followed a child-oriented approach, e.g., they were clearly in favour of a better understanding of the child's background situation and reading development – mainly using parents (65%) and most of all the children themselves (98%) as informants. Almost all of them agreed with revealing the child's reading preferences and habits by means of a direct conversation with the child (98%). In addition to these child-related factors, teacher-related factors revealed that many teachers in this sample, but not all of them, expressed correct beliefs and knowledge about gifted early readers as 63% thought that early readers learned to read properly even without their parents' encouragement and 78% without any teachers' help. This is in contradiction to results from Scotland and China showing that primary teachers in these countries believed that to develop reading ability gifted early readers were in need of additional support[75].

The results of teachers' responses on school-related factors suggest to a large part early-reader-friendly schools: Only few stated having heard colleagues complain about these children, and almost three-quarter of the teachers supported the view that early readers and their parents were not particularly exhausting.

In terms of teacher-action related factors, more than two-thirds expressed having time for the early-reading children despite having to support slow readers. This is a gratifying finding because in most cases, teachers would concentrate on providing support almost exclusively for the academically weaker pupils. This has been scrutinized in a study[76] in which teachers' support behavior and its distribution per class in relation to students' achievements had been investigated.

TEACHERS' POSITIVE ATTITUDES TOWARDS GIFTED EARLY READERS

Hardly any teacher would reinforce actions with punitive effects on the children such as making them sit alone or at the backrows of the class, or asking them to perform unacademic tasks (such as watering plants) while the rest of the class would be reading. In line with these findings, results from the same teacher sample[71] clearly showed that these teachers were against pushing early readers into a special role such as having to read aloud particularly often in general in class or when the other classmates could eat during a break between lessons, 60% would object to asking early readers to practice with slow readers and 57% disagreed with the child talking weekly about books it had read at home. Most importantly, 94% have not expressed asking these children to hide their skill but rather seem to embrace their gifts.

Although it is a gratifying finding that almost 90% of the teachers did not consider the gifted early readers being outsiders, only because they were already able to read, we do not have any data on how these first graders felt. Studies indicating that gifted children often do not tell adults about being teased, that teachers often do not know about it and that frequency of bullying was found to increase with age[37-38], further and direct investigations of the children's personal experiences would be necessary. What the finding can nonetheless show is that the teachers in our sample would not consider and consequently probably not treat the gifted child as an outsider, what is extremely important for the child's well-being and healthy development[50].

In general, the data on child- and school-related factors reflects teachers' positive attitudes towards and correct beliefs and knowledge about gifted early readers. Teachers showed clear interest in the children, their abilities and background and were aware of early reading development without questioning nor vigorously defending their own

role as reading instructor. Moreover, the teachers mainly expressed an attitude in favour of early readers and a friendly, supportive approach towards the children and their parents. This is even more important, since teachers' positive attitudes have been found to be critical for implementing supportive pedagogical practices[77] and school-based supports and to affect the child's motivation, self-confidence and attitude towards school and as a result the personality development[78], whereas negative attitudes and stigma among teachers have been shown to present barriers to successful and timely interventions[79]. The present study also shows teachers' supportive behaviour in terms of avoiding punitive actions and attribution of special roles to make the children stand out of the class.

TEACHERS' KNOWLEDGE

When asked about how to determine the children's reading competence level, they would predominantly agree on a tight focus on different reading skills to be revealed in class, two-third of the teachers would also determine the child's mathematics competence level and a bit more than half of them would also have a look at other language skills in the school language, German. It could be speculated that their interest in revealing the early readers' skills in mathematics and the higher skills in their first language[27] might be indicative of their knowledge about the connection between early reading and high mathematics skills for gifted children[3,8,28]; but there is no evidence for that in our data.

Although teachers in this sample implied that they knew how to deal with early readers (60%), 80% explained that they would reach out for more information on early reading. However, further teacher-related results were unspecific how these teachers would go about: only 40% would read up in a handbook or seek advice from a colleague, 20% would do a search on the internet, 40% may take up a special course on early readers, but the others would always object to these suggestions or were undecided. A study on teachers' knowledge about intellectual giftedness revealed that teachers had little correct information about giftedness (only 25% of the items obtained correct responses) and were strongly influenced by misconceptions with their main source of information being popular media (50.8%)[18]; overall, serious sources of information such as textbooks played a negligible role in providing solid facts and few mentioned knowledge obtained from training courses (6.3%). Detailed and correct knowledge about giftedness is critical for teachers' approach to gifted students, for identifying them, their way of teaching them and adapting to their needs and the degree of promotion they offer. Better knowledge has been linked to more positive attitude towards the gifted children[80], whereas negative misconceptions represent a danger because the more teachers held, the more negative was their attitude towards gifted children[18].The amount of time children spend with their teachers is huge; this is why teachers play a unique and critical role in early identification, appropriate support and assistance and modification of learning conditions and contents. An increase in consulting solid resources of information on giftedness and professional knowledge about how to provide suitable learning conditions are fundamental for gifted children's adequate instruction; specific trainings could additionally help reduce the dissemination of misinformation as well as perpetuating stigmas and biases. Despite the strong awareness of knowledge gaps, we observed only 40% of self-identified training needs in this sample.

CLASSROOM-ORIENTED TEACHING PRACTICES

When asked about the school and the teaching staff at their school in relation to early readers, 80% declared that they had materials at school. Since the early readers' survey focussed on children just entering school, it is likely that teachers would just give these first graders materials for second grade (as they often do[81]). And almost half of the teachers would not get a special booklet for early readers which may have provided acceleration or enrichment. What is more, some teachers (between 20% - 32%) would use the same textbook for all children, which they had used for years, would make all children do the same tasks and stated that their classes were not designed for early readers. Only 22% of the teachers would organize additional courses for them (in parallel to courses supporting slow readers). Earlier results from this teacher sample showed that although they expressed a general support for reorganizing lessons to accommodate the child's need, they would improvise spontaneously and ask the child to behave quietly, because repetition would not do any harm, and were against acceleration. While they seem to support self-regulated enrichment (a personal book of their choice, a suitable pc-program), they still would require them to do what the others are doing, and many were in favour of clear segregation (e.g., sending them off to the library)[71]. The impression gained from the teacher-related factors is that they provide too few opportunities for gifted early readers to express their gifts when using ill-adjusted materials, when following the normal curriculum, when doing

insufficient adjustments, when offering unsuitable pull-out activities, almost no enrichment nor acceleration opportunities, rather following the pace of the majority of pupils and practicing content that has long been mastered. As outlined above, this way of schooling and in particular reading instruction is in clear contradiction to gifted early readers' needs as it offers too little intellectual challenges[5,46], and may pave the way to underachievement. The effect on a child's intrinsic motivation to learn and to participate in class is likely negative, since the child obviously has to notice the extreme discrepancy between the personal pace and skill and the rest of the class. As recent research has shown[82], differentiation is still rarely used in regular classes while traditional practices are preferred instead, probably because the latter are thought to make controlling the class and keeping an overview easier for teachers; also, differentiation is often associated with an increase in preparation amount and time[82].

IGNORED ADDITIONAL KNOWLEDGE

The teachers' support was focused on school competences, but not necessarily beyond, i.e., they would not opt for a standardized test or diagnosis nor would many of them (only one-third) get in touch with kindergarten staff to gain a better understanding of the reading development and maybe about some early reading instruction in the kindergarten, since some kindergartens have been reported to encourage, other to discourage explicit teaching and reading instruction[83]. The identification of a child's giftedness is very important to create favourable conditions for the overall development[50], but care has to be taken to avoid stigmatization and the negative consequences of labelling[66,68]. Standardized tests do not have to be the only method of assessing students; other approaches combine classroom observation, questionnaires, interviews, peer assessment, and self-assessment[51].

Conclusion

As supportive as the strongly child-oriented actions and child-friendly attitudes may be, they do not suffice for supporting gifted early readers in the classroom. They support these children's well-being to a certain extent, but do not really promote their learning and thus their overall well-being and healthy development. The findings of this study underline the importance of solid and detailed knowledge about giftedness and the urgency of the need for teacher training for gifted education (starting right from the beginning of formal education) including up-to-date and specific knowledge about giftedness, identification options and the danger of underachievement as well as planning of differentiated instruction and adequate enrichment to meet early readers' special needs. This should be provided to all teachers (to teacher students as well as those already working in primary schools). Otherwise, the educational system is at risk of not providing adequate education to early gifted children and hinder not only their well-being but also their healthy development.

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