Perceived benefits of reading aloud in preschool: analysis of a monitoring tool for the 0-6 age group[*]

Benefici percepiti della lettura ad alta voce in età prescolare: analisi di uno strumento di monitoraggio per la fascia d'età 0-6

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ABSTRACT

In an extremely complex framework such as the Italian education system, which moves between innovative impulses and a tendency towards conservation, emerges the need to promote teaching practices that make it possible to increase literacy levels from early childhood. This study fits into this panorama, within the broader context of '*Leggere: Forte! Ad alta voce fa crescere l'intelligenza*', an educational policy promoted by the Tuscany Region in collaboration with the University of Perugia. The purpose of this study is to investigate what emerged from the subjective perceptions of educators and teachers who joined the action-research project, systematically and intensively reading aloud to children aged 0-6 in various educational services, through the analysis of a monitoring tool: an ongoing semi-structured diary. This study also aims to understand whether the subjective perceptions of educators provide support to the evidence in the literature on the positive effects of reading aloud in the development of pre-school children. The diaries compiled by educators provided important insights with respect to the improvement of different dimensions perceived as related to the practice of reading aloud: cognitive, emotive-relational, linguistic and interest. Finally, limitations, implications and and future prospects of the present study will be discussed.

Keywords: reading aloud, semi-structured diary, educational policy, effects of reading aloud

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CENTRO
PER IL LIBRO
E LA LETTURA

1. Introduction

It is not easy to outline a picture that takes into account the complexity of the Italian educational system, but a starting point might be to reflect on the fact that, no matter how hard we try to think of it as an open system, it still remains a predominantly closed system. Evidence of this is the persistent presence of school programs and the difficulty for teachers to abandon them, despite the fact that they have long since been replaced by the National Directions (Bottoni & Gianfreda, 2005; Ricerca, 2012). The school program, by definition, does not consider individual differences, contextual and social changes, along with priorities that change over time (Batini & Bartolucci, 2016a). Further evidence of a system that remains closed is the presence of evaluation criteria based on predetermined numerical indices or 'judgments' that inevitably reduce the person and his or her experience within the school to a value with little possibility of expression (Butera, 2006; Batini, 2022a) and a didactics that is still almost totally frontal, far from an active typology (Batini & Bartolucci, 2016a; Scierri et al., 2018).

Another relevant dimension concerns that Italy scored below the OCSE average in reading and science literacy. The average performance of Italy decreased after 2012 (Palmerio, 2021; Schleicher, 2019); Individuals with low literacy levels follow reduced educational pathways, are less likely to find a job, and are more likely to fall into low-income categories (Batini, 2022b). Populations with lower literacy rates also have poorer health status (Weiss et al., 1991) and less ability to take care of the latter (DeWalt & Pignone, 2005).

Today we often talk about the processes of social inclusion, referring also to an educational system that should enable every child and adolescent to fully access the resources possessed by society. These resources include the skills of language possession and access to culture such as the ability to read and understand written texts (Anello, 2013). However, as argued by Barzon (1992), the relationship with text within school is expressed almost exclusively through two systems: free reading and guided reading. In the first case, teacher interference is minimal in favor of an exclusive relationship between reader and text; in the second case, it is a teaching practice aimed at the transmission of skills that can be acquired by reducing the text to an object of study. It then becomes central to try to effectively relate educational objectives and teaching tools that aim to implement them (Anello, 2013).

One possible strategy to handle this situation, in order to reach the greatest number of children and young people in an inclusive and democratic way, could be to propose an action on the entire educational system, through active teaching practices that allow to increase literacy levels (Batini, 2022b). In this context, '*Leggere: Forte*! Ad alta voce fa crescere l'intelligenza' was born, a research-action project promoted by the Tuscany Region in collaboration and with the scientific coordination of the University of Perugia (FIS-SUF Department – Philosophy, Social, Human and Training Sciences), Cepell ('Center for books and reading' of the Ministry for Cultural Heritage and Activities), the Regional School Office for Tuscany and Indire (National Institute for Documentation, Innovation, and Educational Research) (Batini, 2021a).

The project was launched in 2019 and, having reached its third year of continuity, constitutes an educational 'policy', as it has the multi-year goal of ensuring that reading aloud, conducted in a daily, intensive and systematic manner, is inserted in the didactics of the Tuscan education and training system. Another purpose of the project is to prevent early school leaving and to ensure that educational success becomes a concrete possibility for all children and young people (Batini, 2021a).

The reading aloud method implemented within the project provides for the continuous training of teachers, a system of monitoring and supervision meetings, aimed at supporting the development of the practice, within the various services and educational institutions, the involvement of experts who help teachers and educators in running the project, the use of a shared monitoring tool and a quantitative and qualitative survey of the ex ante and ex post effects of the training period.

In various researches conducted with children, it was possible to confirm positive and relevant effects

produced by exposure to reading aloud on different dimensions: emotive-relational dimensions such as emotional literacy and understanding and recognition of emotions (Batini, 2018; Batini et al., 2013: Buccolo, 2017), cognitive dimensions (Batini et al., 2018; Lawson, 2012) and linguistic dimensions (Duursma et al., 2008), both with respect to the expressive level (Baker et al., 2013) and to the receptive level (Al-Mansour, 2011).

Based on these evidences, the exposure to reading aloud conducted in a systematic way could also favor the development of many of the skills necessary in the first years of school and beyond (Bartolucci & Batini, 2020), therefore the project proposes the reading of stories made by the teachers. The role of all teachers becomes central: they read aloud to their students, during school hours, from nursery to secondary schools.

The proposed method is a flexible practice but based on clear principles (Batini, 2022b):

– systematicness: reading is carried out consistently, it is not an occasional activity. It is a practice that cannot be improvised but needs to be carefully planned in the choices, in the methods of conducting, in the spaces and times selected (Batini, 2021b, 2022b; Batini & Giusti, 2021, 2022);
– frequency: Reading is conducted daily (with a minimum of three sessions per week). This guarantees its function of growth, development, strengthening (Batini, 2021b, 2022b; Batini & Giusti, 2021);
– intensity: the duration of the initial sessions is established according to the level of the class group. Then gradually reading times increase, hopefully arriving at an hour (Batini, 2021b, 2022b; Batini & Giusti, 2021, 2022);
– progressivity: the progress of the selection of texts starts with simpler and more accessible stories according to age, in terms of linguistic complexity, quantity of images, comprehension skills required, and then gradually increases the complexity (Batini, 2021b, 2022b; Batini & Giusti, 2021, 2022);
– bibliovariety: having a wide range of choices is essential. Allowing students and children to encounter different types of themes, authors, stories and characters, involve them in choices, probe their tastes and select themes according to the class group is fundamental (Batini, 2021b, 2022b; Batini & Giusti, 2021, 2022).

Within the broader context of the educational policy of *Leggere: Forte!* this research aims to conduct a descriptive analysis, based on the subjective perceptions of educators and teachers who have joined the project by systematically and intensively reading to children of 0-6 years old by means of a shared monitoring tool that will be presented later: the diary. A further purpose of this study is to understand whether the subjective perceptions of teachers provide support to the evidence in the literature about the effects of reading aloud and to the inclusion of reading aloud, conducted according to the principles listed above, as a teaching practice in educational services for the 0-6 age group.

2. Data collection tools

2.1 Purpose

The diary represents a dual function tool: the diary has a reflection and a research function but, first of all, is intended to contribute to personal growth and therefore to the skills development of students, intern and professionals. The diary allows you to focus on specific dimensions and reflect on them during and after the 'path' that is taking place. It also allows you to observe yourself and to improve the process of consolidation of learning and of structuring memories. The decision to create and use this tool was therefore carried out with different goals. First of all, to offer the educational services participating in the project

a useful tool to reflect on the activities carried out, on the progress of the practice of reading aloud (in terms of perceived and directly observed quality) but, also to allow the implementation of a series of adjustments or strategies to best conduct the practice and optimize it. Another goal is to keep track of the development path of children and adolescents. The diary foresees the reflection on the effects perceived subjectively by the educators with respect to cognitive dimensions such as attention and memory, to linguistic aspects concerning verbal manifestations and comprehension skills. A tool for monitoring the work done but also the development of children and adolescents. The diary was also conceived as an opportunity for discussion and exchange amongst colleagues who share the practice of reading aloud within the same section or the same service / institute. Understanding and sharing choices and methods is an opportunity to encourage the construction of a network, aiming to the improvement and diffusion of this educational policy. The semi-structured diary was also created as a useful tool for the Tuscany Region to monitor the progress of the project. The diaries were also an essential tool for the research group in order to monitor the training, understand its progress, detect critical issues and strengths and detect the perceptions found by all those who practiced the reading aloud in a systematic and intensive way, about different dimensions: reading time, cognitive benefits, satisfaction levels, type of reading carried out, critical issues, linguistic benefits, emotional states of students and teachers. This contribution will address the structure and the results that emerged from the diaries compiled by the educational services for the 0-6 age group.

2.2 Factors investigated

The diary consists of three parts. In the first part of the diary general information was requested (Tab. 1) with the aim of subsequently organizing the data in a database that would allow to distinguish the diaries sent from the individual sections of the different educational services (nursery schools or educational services 3-6 age), over the weeks, the number of educators involved by section and the geographical distribution of services.

Table 1. Part 1 of the diary: general information requested to Educational Services

General informations
Email address
Reference week
School
Early childhood education service
Section
Municipality
City
Education area
Names of section's reference teachers (name and surname)
Section size

The second part includes four sections to be completed daily (Tab. 2).

Table 2. Second part of the diary: section for daily compilation

Section for daily compilation (from Monday to Friday)
Reading time in minutes
Actual attention time
Books and titles selected
Perceived satisfaction

In the *Reading time in minutes* section, teachers have to input the total sum of minutes of reading conducted in one or more sessions throughout the same day. In the *Actual Attention Time* section, multiple choice answers have been provided. In the *Selected Readings* section, the possibility of open answers has been provided to insert the titles of the chosen texts. In the *Perceived satisfaction section*, a 5-points Likert Scale has been provided, where 1 indicates the lack of satisfaction and 5 the maximum level. If the reading was not conducted on that day, for each section the possibility of a NE (Not Executed) answer has been included. Although these four sections are filled in daily, it is requested to send a weekly diary therefore, to facilitate everyone in the compilation, a pdf model was sent during the training and monitoring meetings, with a grid where the participants were presented with the days of the week and, for each day, a space has been provided to enter the reading times, those of attention, the readings chosen and the level of satisfaction.

The third part concerned the sections with weekly compilation (Tab. 3). In this part it was asked to consider the response of each item as an average indicator, it was therefore asked to make an overall estimate of the weekly trend of these levels.

Table 3. Part 3 of the diary: Sections to be filled in weekly and related methods of replying

0-6 Educational Service	
Medium level of immediate readiness to listen to the reading	Likert Scale 1 (Slow) - 5 (Immediate)
Medium level of attention	Likert Scale 1 (Low) - 5 (High)
Medium level of interest	Likert Scale 1 (Low) - 5 (High)
Is there a ritual performed to start the reading activity? If so, which one?	Multiple choice answer
Expressions of interest from children	Multiple choice answer
Frequency of verbal manifestations	Multiple choice answer
Types of verbal manifestations	Multiple choice answer
Cognitive benefits found	Multiple choice answer
Criticalities found	Likert Scale 0 (Absent) – 5 (Frequent)
Any types of critical issues encountered	Multiple choice answer
Average level of satisfaction with the books read by the educator / teacher	Likert Scale 0 (Poor) - 5 (Excellent)
Average level of the educator / teacher's emotional state during reading	Likert Scale 0 (Unease) - 5 (Ease)
Briefly describe your emotional state this week	Open answer
Additional benefits and / or gains related to reading activity	Multiple choice answer

General evaluation of the weekly experience	Likert Scale 1-10
Comment on the weekly experience	Open answer
Children's commentary on the weekly experience	Open answer

2.3 Construction and administration of the instrument

Within the project '*Leggere Forte!: Ad alta voce fa crescere l'intelligenza*', in order to obtain a continuous recording of the information and subjective perceptions of all the educators and teachers who adhere to it, with respect to the progress of the practice of reading aloud at the within the education services, a semi-structured on-going diary was developed. A diary has been planned for each level of education: Educational services for the 0-6 age, Primary and Secondary Schools. The compilation of the diary is intended by class, therefore each diary refers to the class / section in which the reading aloud is carried out. The diary included more structured parts based on the use of multiple choice response modes and Likert scales and some parts in free text. After having explored the possibility of creating the tool through various e-learning platforms, the decision fell on the Google Modules tool[1].

The diary has been designed for all those who have joined the project until the end of school activities, in order to encourage reading for as long as possible. Despite the ideal goal of compiling the diary until the end of school activities, a minimum of ten diaries in ten weeks was requested. The diary was also compiled by those who adhered to the detection of the effects and was part of the experimental group. To begin the compilation of the diary, the experimental classes had to wait for the administration of the standardized incoming tests. Overall, the number of diaries sent exceeded 25,000. As regards the 0-6 age group, the weekly compilation of the diaries saw involvement of 1,028 classes (636 for the 0-3 age group and 392 for the 3-6 age group) and 15,653 children (8,126 for 0-3, 7,527 for 3-6).

3. Data analysis

The answers received from the weekly diaries were extrapolated and divided for each school grade. The analysis was conducted on the responses provided by all the teachers who took part in the project. A database was created within which the data was organized based on the order of arrival of the diaries for each structure participating in the project, divided into educational areas. The analysis was carried out on quantitative and qualitative data, i.e. working on the one hand on numerical data –Likert scales - and on the other hand on the categorization of open answers and on the calculation of the percentages related to the answers of multiple choice questions.

The following exclusion criteria were selected:

– less than 4 diaries sent;
– 4 or more consecutive weeks of interruption of reading aloud activity;

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1   The diary was obtained after the preparation of several versions, with the aim of making the tool as intuitive as possible. At the same time, a video tutorial was created and edited to provide information on how to use the instrument. For each version of the diary, a screencast of an exemplary compilation was created, preceded by an introduction on the roles and functions of the diary through a guide voice during the playback of the video.

– ratio between actual reading days and number of diaries sent less than 50%;
– difference between the average reading time of the last week and the first week equal to or greater than -10 minutes.

The results presented here specifically concern the 0-6 age group. The final sample for this age group is made up as follows: 591 classes (505 of 0-3 and 86 of 3-6) who overall sent 8,636 diaries (5,310 for 0-3 and 3,326 for 3-6).

As regards the scores obtained on the questions with numerical scale, line graphs were drawn up to visualize the trend of the variables in relation to time. The variables considered are the following: trend of the average weekly reading time, trend of the average level of weekly attention, trend of the average level of weekly perceived interest, trend of the average weekly score of the evaluation of the experience.

For the multiple-choice questions that required the choice of one or more answers, the frequency percentages of each answer option were calculated. The variables considered for the 0-6 age group were: expression of interest by children, types of verbal manifestations, cognitive perceived effects, additional benefits related to reading.

The open questions provided a space for comments and reflections to investigate teachers' point of view on the weekly trend of the reading aloud experience. The qualitative analysis of the answers to this type of questions allowed us to deepen some aspects related to teachers' experience and perception during the progress of reading training. A manual analysis was conducted (without software support) on the content of the answers on a total of 521,680 characters: through an open coding, the teachers' comments were read and compared to identify thematic nuclei of interest. This coding strategy made it possible to derive the classification categories from the text analysis based on recurring thematic areas; the categories were gradually defined and used to categorize the data subsequently considered; the data that did not fall within the defined categories led to the generation of new labels. To add depth and structure to existing categories, in a second phase, relationships between them were identified and, through a selective coding, superordinate categories were defined in order to group and synthesize, on the basis of these relationships, the categories that emerged in the first phase. This step made it possible to reassemble the data that was split into separate categories by open encoding. On the total of the answers obtained, 8 categories were identified based on recurring thematic areas and their frequency was calculated within the reports. Finally, the frequency percentages of each category were calculated on the total of occurrences. A category of 'Other' type has been provided to collect those comments that have registered very low frequency and cannot be ascribed to the classification system set up. Since the open questions were not compulsory, the number of answers on which the analysis was conducted is numerically lower than the total number of diaries sent.

Thus the qualitative analysis of the corpus of open questions led to the construction of a categorical structure starting from the texts themselves. The following table (Tab. 4) illustrates the structure of the categories emerged for the 0-6 age group.

Table 4. Categorical structure emerged for the age group 0-6

Categories	Description	Examples of evidence
Aspeficic positive feedback	Positive comments on weekly trend of reading aloud activity without specifications	'Satisfying experience' 'Positive'; 'Great'
Aspeficic negative feedback	Negative comments on weekly trend of reading aloud activity without specifications	'Hard'; 'To improve'; 'Strenuous activity'
(Cognitive, linguistic, emotional-relational) effects	Comments highlighting observed improvements in children's emotional, cognitive and language skills – Cognitive benefits concern the increase in attentional levels, the improvement of mnemonic skills, predisposition to listening, critical and reflective thinking, problem-solving and creative thinking – Linguistic benefits concern the development of non-verbal language, the reproduction of sounds and words, the increase of the vocabulary and text comprehension ability – Emotional-relational benefits refer to improvements in socio-relational skills, empathy and understanding of the other (taking other's point of view), ability of self-expression, emotional sharing and creation of a better class climate and group cohesion	'The attention span of the children has risen a lot, they manage to listen for a long time and ask the educators to read aloud themselves' 'During the school day, the children through play represent actions and characters of the stories read, bringing out problems and possible solutions' 'They are passionate about stories and fantasize about the adventures of the protagonists by making hypotheses about possible new scenarios deriving from the book's ending' 'Cognitive baggage increased considerably and lexical contribution improved' 'They also learned a lot of new words' 'There are many requests for explanations of the terms come from some three-year-old children and this makes us very happy, the older ones underline concepts and try to give explanations of situations encountered in the stories' 'The children respected the choices of others and waited their turn. We have chosen many readings that have brought out emotional states connected to the chosen texts' 'Some stories read, such as 'The dream of Matthew', give rise to group conversations through which children tell and express themselves' 'We found an empathy in the children in identifying with the characters they met'
Interest and participation	Comments that bring out satisfaction and appreciation by teachers, perceived interest in children, participation and interventions during reading activity	'The children let themselves be involved and entertained' 'Children await the moment of the day dedicated to reading and interact with enthusiasm' 'Positive experience, which has lost the children to stimulate their curiosity and ask various questions about the situations encountered'

Reading attitude	Comments on the improvement of the relationship with books and reading, request for books and / or to continue reading activity	'It was interesting to observe how this week they have reached a capacity of autonomy such as to choose the books themselves to be included in the reading session' 'During this week the children have asked us several times to read even at the moment of welcome, anticipating the reading session' 'Parents say that at home boys and girls often choose from the library or, those who have already developed verbal language, ask to read the same readings that are done in the nursery'
Good practices related to reading activity	Evidence of the introduction of good practices related to reading activities such as the establishment of a reading routine in the school everyday life, bibliovariety and enrichment of the class library, involvement of colleagues, families, libraries and/ or associations and carrying out of educational activities related to reading	'Many new texts have been read, some borrowed from the library, others received as a gift from the Municipality' 'The meeting with the LaAv volunteers was nice and I was amazed at how much the children have kept their level of attention high' 'The children looked forward to the video readings that the teachers sent out daily'
Critical issues	Evidence of difficulties encountered during reading training, such as a low or fluctuating level of attention in children, problems related to the pandemic situation, lack of time and organizational difficulties, inadequate choices of books, no collaboration between colleagues	'Difficulty reading with the masks for a prolonged time, the need to lower the masks to emphasize the facial expressions and create a more engaging reading' 'The children this week were more tired and had difficulty paying attention on some days' 'Doing the activity is quite difficult, due to the routine and scheduling activities'
Other	Comments that do not fall within the other identified categories	'This week we did some reading in the garden' 'We noticed during this week that many of the children preferred to play together with the various games available' 'Heterogeneous reading with 4-year-old and 5-year-old children'

4. Results

To visualize the trend of the weekly average reading time and the weekly average perceived attention level, in relation to the ten weeks of conducting the practice, two line graphs were drawn (Fig. 1 and 2). The lines of each graph differentiate the educational services dedicated to the 0-3 and 3-6 age group. Tab. 5 shows the weekly average reading times (10 weeks) separately for the 0-3 and 3-6 group.

Table 5. Average Weekly Reading Time (Week 1 to Week 10)

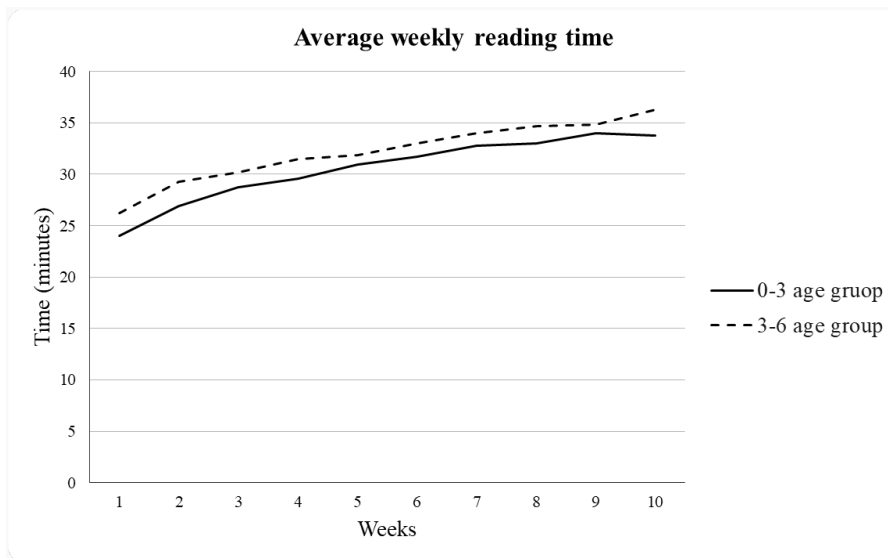| Average weekly reading time										
Weeks	1	2	3	4	5	6	7	8	9	10
0-3 age group	24.03	26.95	28.74	29.61	30.97	31.71	32.78	32.99	34.00	33.80
3-6 age group	26.21	29.30	30.22	31.48	31.83	33.01	33.96	34.68	34.83	36.28

Figure 1. Trend of the average weekly reading time (10 Weeks)

A gradual increase in the average weekly reading time is observed. In 50 days there is an increase in minutes ranging from 24.03 (week 1) to 33.80 (week 10) for the 0-3 year age group and an increase in minutes ranging from 26.21 (week 1) to 36.28 (week 10) for the age group 3-6 years. The graph shows a similar trend in the two groups: in both there is in fact a progressive increase in reading time. Tab. 6 shows the average weekly (10 weeks) levels of perceived attention separately for the 0-3 and 3-6 age groups observed using a Likert Scale from 1 (low) to 5 (high).

Table 6. Average Weekly Attention Level (Week 1 to Week 10)

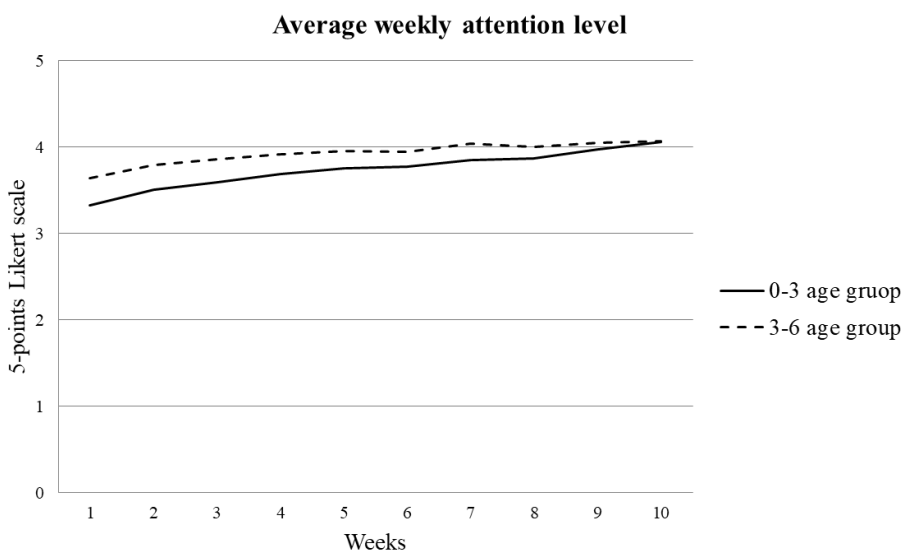| Average weekly attention level										
Weeks	1	2	3	4	5	6	7	8	9	10
0-3 age group	3.33	3.51	3.59	3.69	3.76	3.77	3.85	3.87	3.98	4.06
3-6 age group	3.64	3.79	3.86	3.92	3.95	3.95	4.04	4.00	4.05	4.07

Figure 2. Time course of the average attention level (10 Weeks)

Also in this case there is a progressive increase in the average weekly attention level perceived. This was observed using a Likert Scale from 1 (low) to 5 (high)[2]. In 50 days, there is an increase ranging from 3.33 (week 1) to 4.06 (week 10) for the 0-3-year age group and an increase ranging from 3.64 (week 1) to 4.07 (week 10) for the age group 3-6 years. The graph shows a similar trend in the two groups: in both there is in fact a progressive increase in the level of perceived attention which tends to converge in the last week under consideration.

Through a work of rereading and analyzing the questions with an open response method, the ex-post categories presented were defined. From an initial analysis of the ex-post categories, it emerges that the 'Aspeficic positive feedback' represent the observation that has collected the most response in the open comments, thus becoming the most represented category (32.8%). Along with this, 'Interest and Participation' (20.3%) and 'Cognitive, linguistic, emotional-relational effects' (14.6%) are also two categories that are well represented in the diaries. 'Good practices related to reading activity' (11.7%) and 'Critical issues' (6.2%) collect numerous evidences albeit with lower percentages. 'Reading attitude' (5.8%), 'Aspecific negative feedback' (3.6%) and 'Other' (3.2%) are outlined as the categories with the least frequency of evidence in the observations of teachers (Fig. 3).
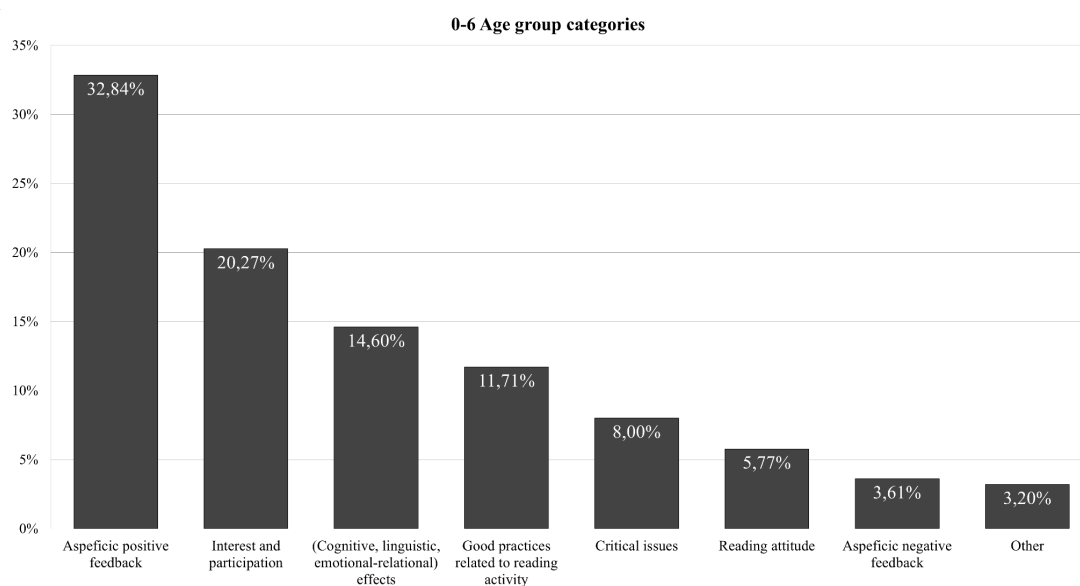

Figure 3. Percentage distribution of ex-post categories for Educational Services dedicated to the 0-6 age group

As previously illustrated, the questions in the diary that provided for an open answer method were not characterized by mandatory nature or by indications about the length and specificity of the type of answer, therefore, the sub-sample examined does not reflect the totality of the diaries sent. Consequently, taking

2   Although the Likert scale is a frequently used psychometric scale in questionnaires and surveys, particularly in social science research, it is specified that Likert scales can be subject to bias for various causes. Surely the use of this scale has been chosen with the awareness that each subject can establish the distance between the intervals he wants, independently of any other subject and nothing guarantees that different subjects order the sentences that undergo their evaluation in the same way (Marradi & Macrì, 2012). It is recognized that respondents can avoid using extreme response categories (central tendency bias); agree with the statements presented (compliance bias); or try to portray oneself in a more favorable light (social desirability bias), although designing a scale with balanced keying (an equal number of positive and negative affirmations) can obviate the problem of compliance bias, central bias and the social desirability are however limits taken into consideration, despite the large reference sample (Pimentel, 2010).

into consideration the sample obtained on the basis of the teachers who have chosen to answer the optional questions and taking into account that the category most represented by the evidence is 'Aspecific positive feedback', below is a detailed analysis of the deepening relating to the two additional categories represented mostly 'Interest and Participation' and 'Effects'.

The evidence relating to the category 'Interest and Participation' represents 20.3% of the total. This data appears in line with the observation of the trend of the average level of perceived interest (Fig. 4), in response to reading aloud, over the weeks. The two lines represent separately the answers given for the 0-3 age group and for the 3-6 age group.
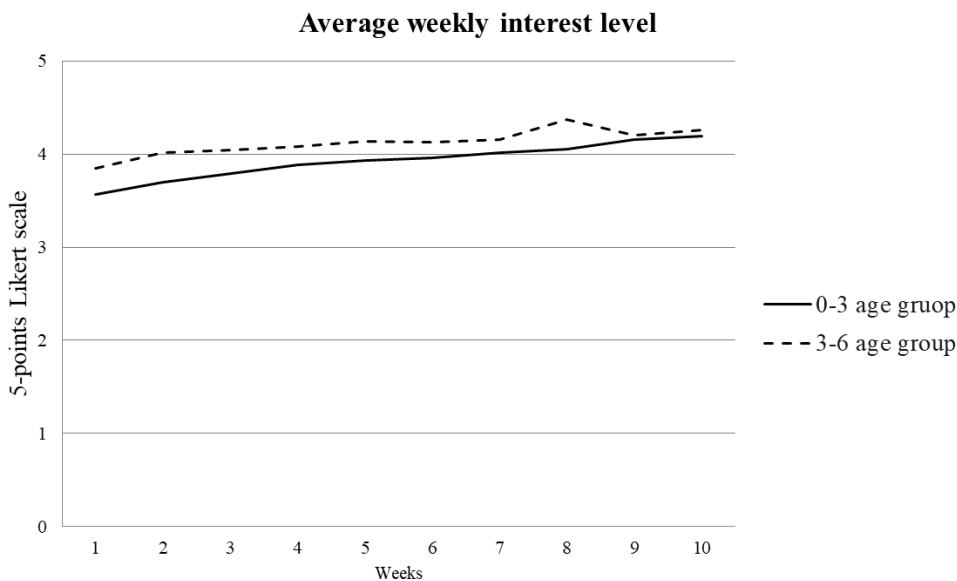
Average weekly interest level

Figure 4. Time course of the average interest level (10 Weeks)

In 50 days there is a slight increase in the level of perceived interest 3.56 (week 1) to 4.19 (week 10) for the 0-3 age group and an increase ranging from 3.85 (week 1) to 4.25 (week 10) for the 3-6 age group (Tab. 7).

Table 7. Average Weekly Interest Level (Week 1 to Week 10)

Average weekly interest level										
Weeks	1	2	3	4	5	6	7	8	9	10
0-3 age group	3.56	3.70	3.79	3.89	3.93	3.96	4.02	4.06	4.15	4.19
3-6 age group	3.85	4.01	4.05	4.08	4.14	4.13	4.16	4.37	4.20	4.25

The weekly average level of interest perceived was assessed on a Likert scale of 1 (low) to 5 (high). It is observed that the interest perceived over the weeks, in response to the practice, has always been consistent. If the data on the trend of interest perceived over time and the frequency of evidence that emerged with respect to the category 'Interest and Participation' highlight how the practice of reading aloud has been appreciated over time by children and that this has happened with a rather constant trend, a further study of the ways in which teachers have perceived this interest allows the deepening of this dimension. Fig. 5 shows the response percentages obtained from the multiple-choice question: 'Types of expression of interest of children'.

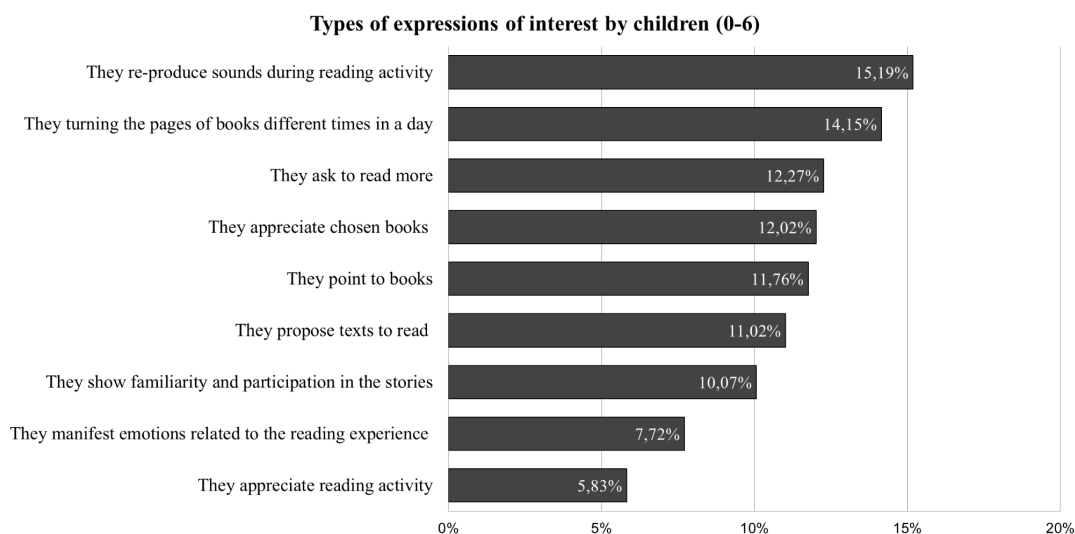**Types of expressions of interest by children (0-6)**

Figure 5. Distribution of response percentages as a function of the type of expression of interest of the children

From the distribution of the response percentages, it emerges that children manifest their interest through various more or less frequent ways. 'They re-produce sounds during reading activity' (15.19%) is denoted as the most frequently encountered manifestation. Additional methods of manifestation detected frequently are represented by 'They turning the pages of books different times in a day' (14.15%), 'They ask to read more' (12.26%), 'They appreciate chosen books' (12.02 %), 'They point to books' (11.76%), 'They propose texts to read' (11.02%) and 'They show familiarity and participation in the stories' (10.07%). 'They manifest emotions related to the reading experience' (7.72%), 'They appreciate reading activity' (5.83%) are denoted as expressions of interest present albeit less frequently.

From the reading of all the evidence that emerged from the descriptive analysis of the diaries, which were found to be representative of the 'Effects' category, four clearly distinguishable thematic areas emerged. These observations have therefore made it possible to outline different types of benefits perceived teachers as related to the activity of reading aloud:

– Improvement of attentional levels
– Emotional-relational effects
– Linguistic effects
– Other cognitive effects

The frequency calculation relating to the occurrences for each of the thematic areas that emerged for the 'Effects' category is illustrated in Fig. 6.
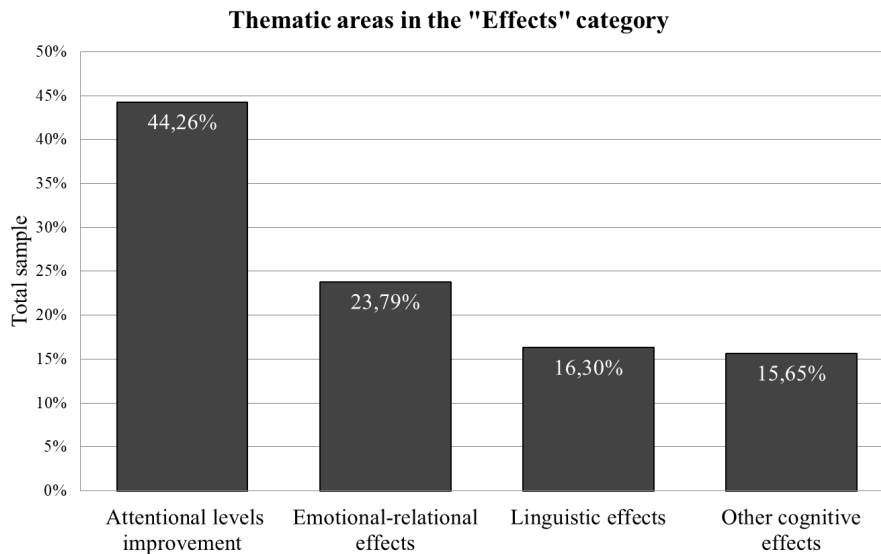
Figure 6. Distribution in percentages, by thematic areas, of the occurrences traced for the category: 'Effects'

The effects of reading aloud emerge in particular with regard to the improvement of perceived attentional capacity. This perceived improvement represents approximately half of the total evidence found for the 'Effects' category (44.26%). An effect of reading aloud is also observed on the emotional-relational dimension (23.79%), on the linguistic dimension (16.30%) and on other more general cognitive dimensions (15.56%). The data that emerged as regards the attentional benefits perceived is in tune with the answers provided by the teachers to the questions that provided for a multiple-choice answer mode. Considering the totality of the sample concerning all educational services for the 0-6 age group, when asked 'Cognitive benefits found', 43.46% reported: Improvement of attention; Increase of the ability to concentrate; Increased attention span and concentration.

A further analysis was conducted by dividing the total sample into performance groups. On the basis of the average reading time of the 0-6 age sample, two groups were identified: *Low average reading time group* composed of all services with a reading average below the sample average (<29 minutes) and *High average reading time group* with a reading average greater than equal to the sample average (≥ 29 minutes). A first comparison was conducted in order to verify the presence of an association between the average reading time and the perceived attention levels of children. The cases were therefore divided into two groups also on the basis of the perceived attentional levels compared to the sample average with respect to this variable: *Low average attention level group* (<3.8 on the 5-point Likert scale) and *High average attention level group* (≥ 3.8 on the 5-point Likert scale). The chi-square statistical technique was used in order to identify a possible relationship between the two variables under examination.

Table 8. Reading Time Groups Attention Level Groups Crosstabulation table*

Reading Time * Attention Level Crosstabulation

			Attention Level Group		Total
			Low	High	
Reading Time Group	Low	Count	253	148	401
		Expected	202,0	199,0	401,0
	High	Count	146	245	391
		Expected	197,0	194,0	391,0
Total		Count	399	393	792
		Expected	399,0	393,0	792,0

Table 9. Results of Chi-Square test used to verify the independence between Reading Time and Attention Level

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	52,518[a]	1	,000		
Continuity Correction[b]	51,493	1	,000		
Likelihood Ratio	53,113	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	52,452	1	,000		
N of Valid Cases	792				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 194,02.

b. Computed only for a 2x2 table

Table 10. Cramér's V value, effect size measurement for the Chi-Square test of independence between Reading Time and Attention Level

Symmetric Measures

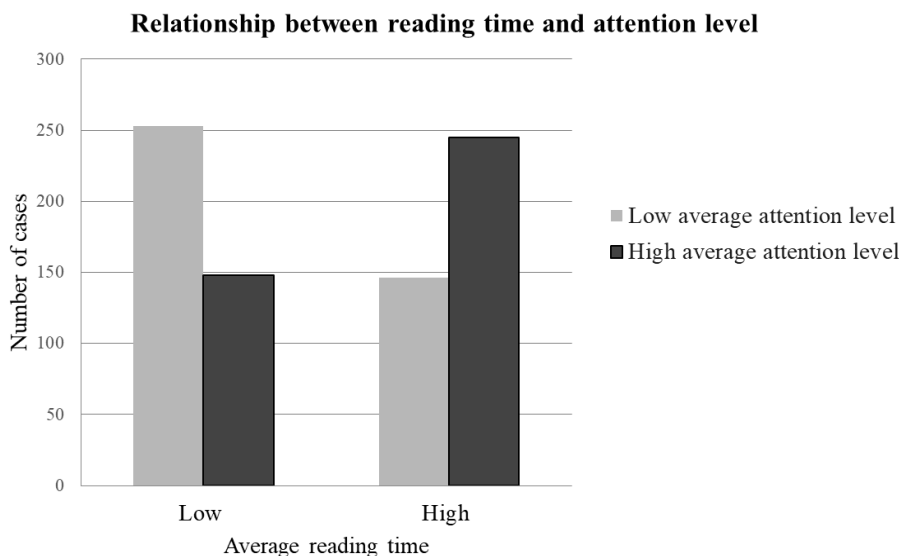|		Value	Approximate Significance
Nominal by Nominal	Phi	,258	,000
	Cramer's V	,258	,000
N of Valid Cases		792	

Figure 7. Relationship between Average Reading Time Groups and Average Attention Level Groups

The results highlight a moderate but statistically significant relationship ($p < 0.01$) between the two variables. This allows us to say that as the average reading times increase, the cases in which a higher than average level of attention is perceived increase and at the same time there is a decrease in cases in which the level of attention is perceived as lower than the average.

A second type of comparison was conducted using the children's perceived levels of interest. Also, in this case two groups were identified with respect to the sample average: *Low average interest level group* (>3.9 on the 5-point Likert scale) and *High average interest level group* (≥ 3.9 on the 5-point Likert scale).

The chi-square statistical technique was used in order to identify a possible relationship between the two variables under examination (interest level and reading time).

*Table 11. Reading Time Groups * Interest Level Groups Crosstabulation table*

Reading time * Interest Level Crosstabulation

			Interest Level Group		Total
			Low	High	
Reading Time Group	Low	Count	227	174	401
		Expected	182,8	218,2	401,0
	High	Count	134	257	391
		Expected	178,2	212,8	391,0
Total		Count	361	431	792
		Expected	361,0	431,0	792,0

Table 12. Results of Chi-Square test used to verify the independence between Reading Time and Interest Level

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	39,822[a]	1	,000		
Continuity Correction[b]	38,927	1	,000		
Likelihood Ratio	40,189	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	39,772	1	,000		
N of Valid Cases	792				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 178,22.

b. Computed only for a 2x2 table

Table 13. Cramér's V value, effect size measurement for the Chi-Square test of independence between Reading Time and Interest Level

Symmetric Measures

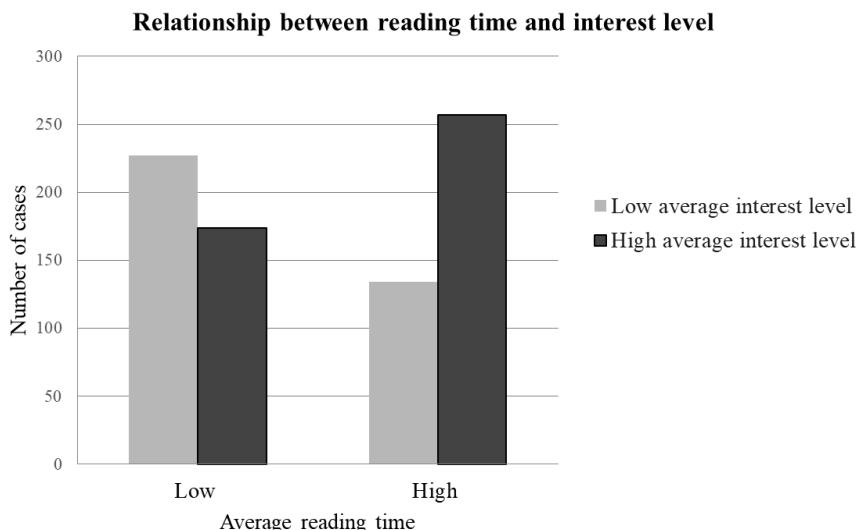|		Value	Approximate Significance
Nominal by Nominal	Phi	,224	,000
	Cramer's V	,224	,000
N of Valid Cases		792	

Figure 8. Relationship between Average Reading Time Groups and Average Interest Level Groups

The results show a moderate but statistically significant relationship ($p < 0.01$) between the two variables. The number of cases in which the level of interest of children is above average is greater for high reading times and conversely, the number of cases in which the level of interest of children is lower than the average is greater for low reading times.

Finally, a final comparison was conducted to verify the presence of a possible correlation between the levels of perceived attention and interest. For this purpose, a bivariate analysis was carried out using the Spearman correlation coefficient.

Table 14. Results of Spearman's Rank Correlation used to verify relationship between Attention Level and Interest Level

Correlations

			Average attention level	Average interest level
Spearman's rho	Average attention level	Correlation Coefficient	1,000	,875**
		Sig. (2-tailed)	.	,000
		N	792	792
	Average interest level	Correlation Coefficient	,875**	1,000
		Sig. (2-tailed)	,000	.
		N	792	792

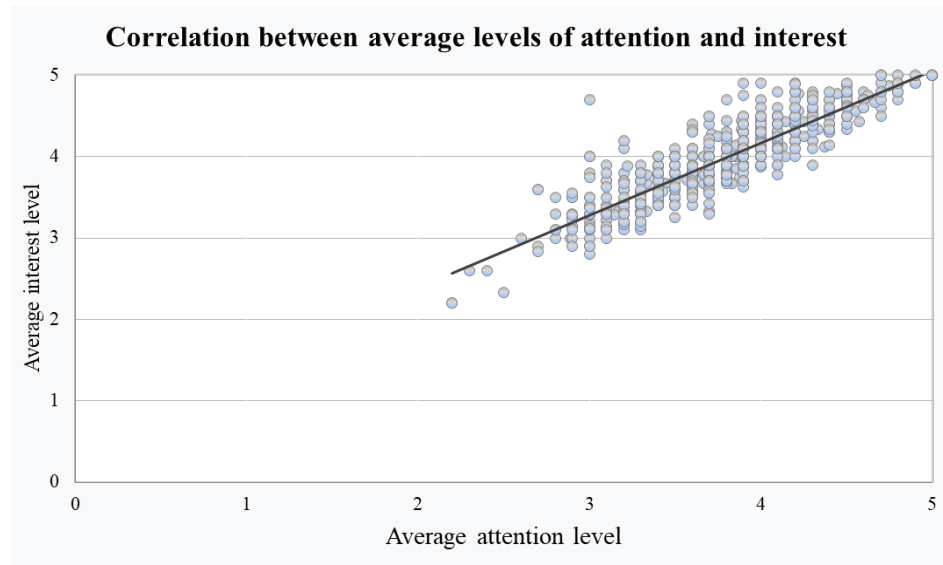**. Correlation is significant at the 0.01 level (2-tailed).

Figure 9. Relationship between Average Levels of attention and Interest

The results highlight the presence of a strong, positive, statistically significant correlation between the two variables (Spearman's Rank correlation coefficient =.875, p<.01), as the perceived attentional levels of children increase, the levels of perceived interest increase too.

5. Discussion and conclusions

The diaries drawn up by the educators of childcare services provided support for the findings in the literature on the effects of reading aloud (Batini et al., 2013; Bartolucci & Batini, 2020; Aram & Shapira, 2012; Baker, 2013; Riquelme-Mella & García-Celay, 2016; Riquelme & Munita, 2017; Batini et al., 2020). Educators, through a weekly semi-structured ongoing tool (diaries), provided a significant amount of data that it was possible to quantify and categorize. The analysis conducted for the construction of ex post categories made it possible to trace a multiplicity of occurrences relating not only to the general positivity of the experience, but also about the cognitive benefits perceived with particular frequency of improving skills attention and the emotional-relational dimension, together with the interest perceived in children expressed through different ways.

The weekly average quantification of perceived attention levels and of interest – recorded by educators using a five-point frequency scale – shows an increase in the weekly frequency averages recorded in the whole sample taken into consideration. Another important aspect that emerges from the results is how the dimensions investigated by the diary are not isolated, but rather in interaction with each other. The average reading times and the average levels of attention and perceived interest of children are related to each other to the extent that as one of these dimensions increases, the others increase accordingly.

The importance of the dimension relating to attention improvement is further confirmed by the observation of the response rates to questions that required a multiple-choice answer. In fact, when asked 'Cognitive benefits found', almost half of the entire sample (43.46%) reported a percived improvement in attention, ability to concentrate and an increase in attention and concentration.

As for the increases found in the average level of interest perceived during the course of the training weeks, it was decided to observe the frequency of the different ways in which the children expressed their

satisfaction. Observing the percentages of answers to the question 'Types of expression of interest of children' it emerges that the re-production sounds during reading activity is the most frequently encountered modality. Followed by leafing through the books at different times of the day, by the request to increase the reading, by the appreciation of the chosen books, by the indication of books and by the proposal of texts to read.

These dimensions also reflect the way in which verbal and non-verbal communication is frequent and relevant, especially for the request for reading, and in general in relation to the relationship with books. Not surprisingly, within the 'Effects' category it is highlighted that 16.30% of occurrences denote linguistic benefits of different types.

The dimension of interest has important implications: if children willingly accept being exposed to reading aloud, this can lead to an implementation of independent reading and a greater general disposition to reading. This could have a cascading effect on the dimensions of understanding at different levels: from everyday life to a math problem, to a greater predisposition to the search for information to face a personal situation (Batini, 2021a; Batini et al., 2021a). But the experience of reading in terms of perceived pleasure is also reflected in a greater ability to use tools characterized by a strong component of self-training.

Listening to reading aloud as well as reading in general constitute training for cognitive and emotional functions and this on several levels: mnestic, attentive and linguistic as well as on an emotional-relational level (Aram & Shapira, 2012; Baker, 2013; Bartolucci & Batini, 2020; Batini & Bartolucci, 2016b; Batini et al., 2021b; Batini et al., 2020; Batini, Bartolucci & Toti, 2013). Also in this case, from the analysis of the frequencies relating to the thematic areas that emerged for the 'Effects' category, 23.79% of the evidence referred to emotional-relational benefits percived. Through the stories, children learn to understand the emotions of the characters, to recognize them by giving them a name. Listening to how an emotion presents itself and is faced can help children to express themselves, to listen to themselves, to self-regulate and to share their emotional experience (Batini, 2021a; Batini et al., 2021b; Riquelme-Mella & García-Celay, 2016; Riquelme & Munita, 2017).

Although the present work is based on subjective perceptions that have been analyzed descriptively, having the opportunity to point out how educators have personally highlighted and experienced part of what is expected as an effect of reading aloud makes a stronger foundation for considering it an inclusive and democratic educational policy that could support increasing literacy levels if implemented widely and systematically at different levels of education. In the present study there are limits on the possibility of generalizing the results obtained to the entire sample of educators involved and to the general population, both due to the over-exposed criticalities regarding the use of Likert scales and because the answers provided to the questions that included a text free, being optional, they could mainly concern educators who are particularly enthusiastic and proactive with respect to the proposed educational practice. A support to this research and a future perspective with respect to this study, which could help to overcome the identified limitations, could be to investigate the relationship between subjective perceptions observed through the diary tool with the quantitative data obtained through standardized ex-ante and ex-post tests reading aloud training.

Credits

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