

- Consortium: **GwE**
- Higher Education Institution Partner: **Bangor/Wrexham Universities**
- Enquiry question:
How will the use of Reading Eggs (a digital reading platform) impact on pupils' reading ages?
- Lead Enquiry School or Partner Enquiry School: **Partner Enquiry School**

Enquiry design and methodology

Roles/responsibilities overview:

- to plan and carry out action research and enquiry as part of the Ysgol Bryn Elian (Conwy) cluster and to work collaboratively with our partner schools to facilitate the development of enquiry skills in our school.
- collate, report and present findings from the research.
- analyse the overall impact of using Reading Eggs on pupils' progress in reading and comprehension skills.
- Seek learners' opinions on their engagement with and progress on Reading Eggs through interviews & questionnaires.

Ethical considerations:

- Identify a mixed ability pupil focus group of 8 Year 5 pupils and designate additional time / weekly tasks on Reading Eggs.
- Consent to participate from parents and pupils in the focus groups.
- Pupil focus groups established in Yr 5.
- Consent forms issued and returned.

Action:

- Pupils complete the standardised New Group Reading Test (NGRT) 'A' in Autumn – reading ages, quotients and percentile ranks recorded as a baseline.
- Reading Eggs level recorded as a baseline.
- Pupil sample group commence weekly class-based and home-based Reading Eggs tasks.
- Pupils complete the standardised New Group Reading Test (NGRT) 'B' in Summer term – reading ages, quotients and percentile ranks recorded.
- Collect and analyse pupil progress made between each pupil's NGRT reading age, standardised score and percentile rank throughout the year.
- Lexile growth (Reading Eggs measure).
- Identify the impact of using Reading Eggs on a child's reading progress/reading age in an academic year.
- Seek learners' opinions on their engagement with and progress on Reading Eggs through interviews & questionnaires. Reflection/opinions/feedback to inform qualitative data.

Quantitative data to be collected and analysed:

- previous academic years' NGRT which indicate previous bi-annual and year on year scores in standardised reading tests i.e. reading age & standardised score.
- Current academic year's data.
- Baseline pupils' Reading Eggs level.
- Lexile growth (Reading Eggs measure).

Ethical considerations

I have referred to the BERA Ethical Guidelines for Educational Research when planning the action research and will adhere to them throughout its implementation. I will adhere to their underlying principles and apply them with integrity so that they can be seen to be ethical, justifiable and sound.

- ✓ Consent forms and an information letter was issued to learners and their parents
- ✓ Learners will be given the same resources to ensure equality and that no one student is disadvantaged.
- ✓ Students participating in the research will be anonymised through the use of pseudonyms (e.g. Pupil 5AC).
- ✓ Data collected will be stored securely and meet GDPR guidelines, meaning only people directly involved in the action research will have access.

Enquiry literature review

The National Reading Panel's "Put Reading First" report highlighted the essential elements needed for a successful reading program and summarised them as: phonemic awareness & phonics, fluency, vocabulary, and text comprehension. (Ambruster, Lehr, Osborne, 'Put Reading First,' 2000)

Reading Eggs incorporates each of the five elements into the structure of its lessons. As described by Allington (2005) "key to an effective instructional reading program design is scientifically-based reading activities combined with highly motivational elements. These have been shown to enable students to make ongoing, long-term gains in reading, fluency and comprehension."

Phonics and phonemic awareness

Developing these skills can have a significant influence on children's reading and spelling achievement (Byrne & Fielding-Barnsley, 1991). Phonics skills are best learnt as part of a larger literacy programme (i.e. Reading Eggs), where they become a meaningful part of their literacy development (Yopp & Yopp, 2000). As emphasised by Ambruster et al (2000), "a programme of instruction provides children with ample opportunities to practise the relationships they are learning".

Fluency

"Fluency is important because it provides a bridge between word recognition and comprehension; fluent readers recognize words and comprehend at the same time." (Put Reading First, 2000). Sight words make up more than 50% of primary level reading texts so to read the first 100 high-frequency words is to develop rapid word recognition skills – an essential part of becoming a skilled and fluent reader (Compton, 1997).

Vocabulary

"There is much evidence that vocabulary levels are strongly correlated with reading comprehension. (Chall, Jacobs & Baldwin, 1990) The range in vocabulary between children with smaller and bigger vocabularies is large." (Biemiller 2004) ICT is clearly emerging as a potentially valuable aid to classroom teachers in the area of vocabulary instruction."(National Reading Panel, 2000)

Text comprehension

Comprehension is critically important and is the "essence of reading," (Durkin, 1993), essential to lifelong learning. (National Reading Panel, 2000)

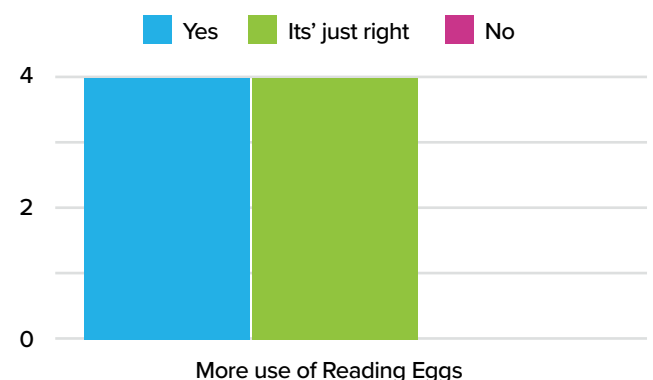
Reading Eggs creates a meaning-based approach to reading instruction and increases student motivation. Reading Eggs ensures that all content area words are introduced with visual support (a picture) to provide context and increase word knowledge and retention.

Emerging findings

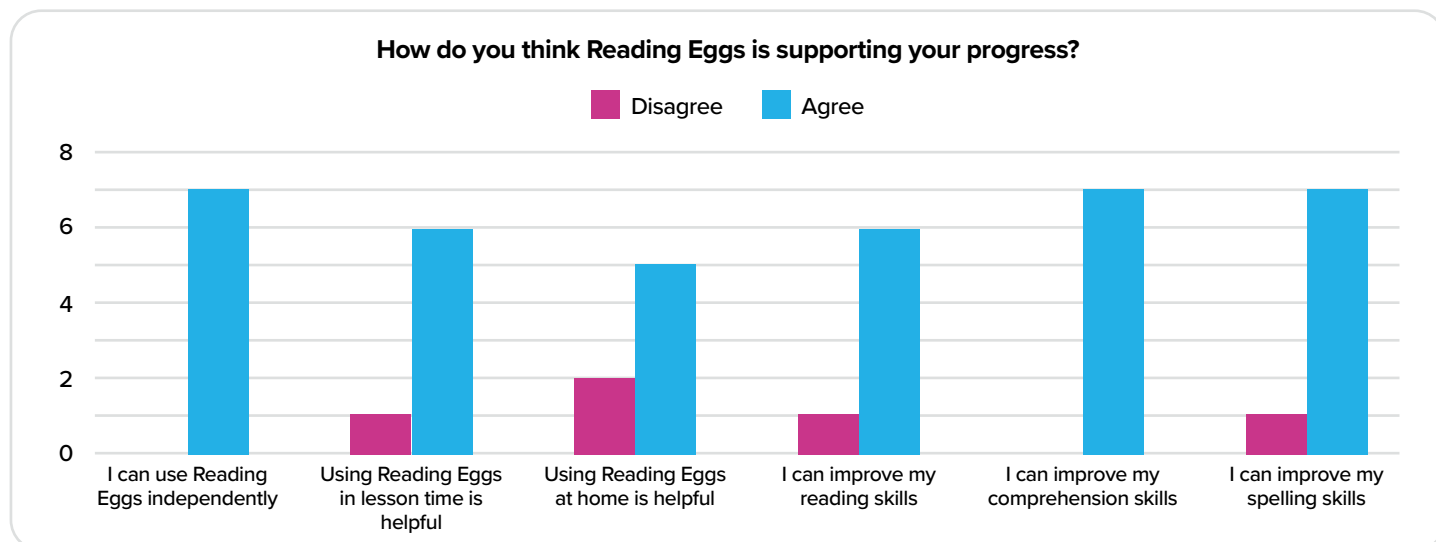
The Reading Eggs program incorporates each of the five essential elements (phonemic awareness & phonics, fluency, vocabulary, and text comprehension) into the structure of its lessons. It is scientifically-based reading activities combined with highly motivational instructional elements. These have been shown to enable students to make ongoing, long-term gains in reading, fluency and comprehension.

During the research, pupils have had 20 minutes per week during curriculum time to work on Reading Eggs 'My Lessons' and 'Library' tasks, with an additional 20 minutes per week allowed for the Spelling element of the program. Reading Eggs creates a meaning-based approach to reading instruction.

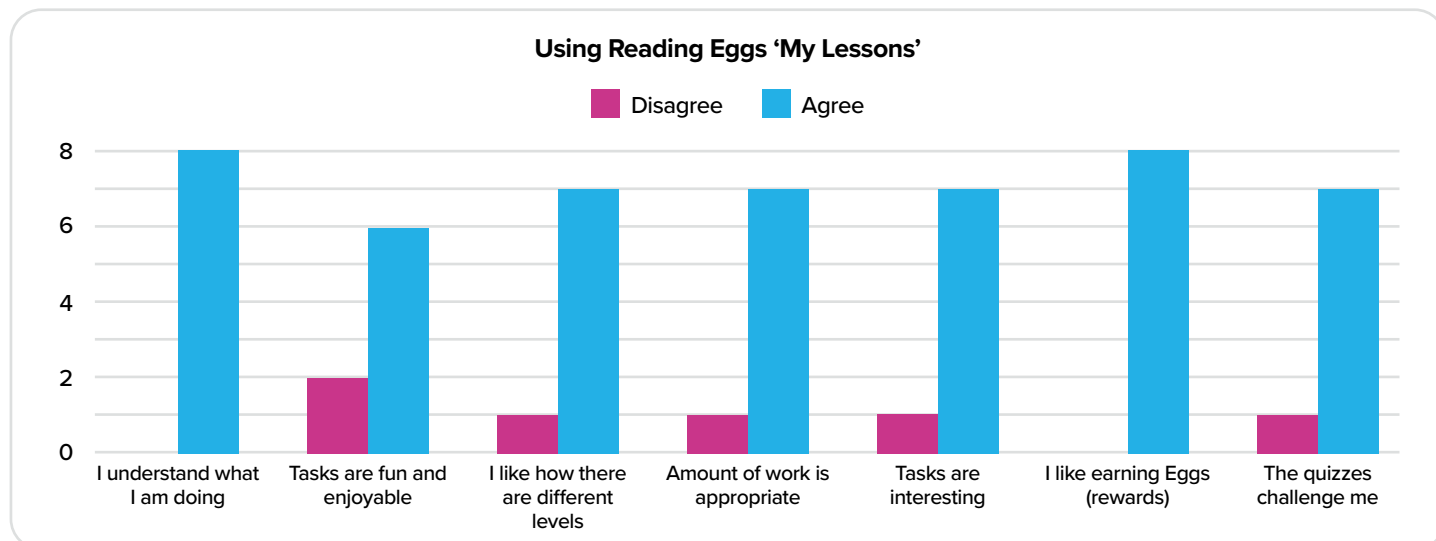
Do you think Reading Eggs should be used more often in lesson time?



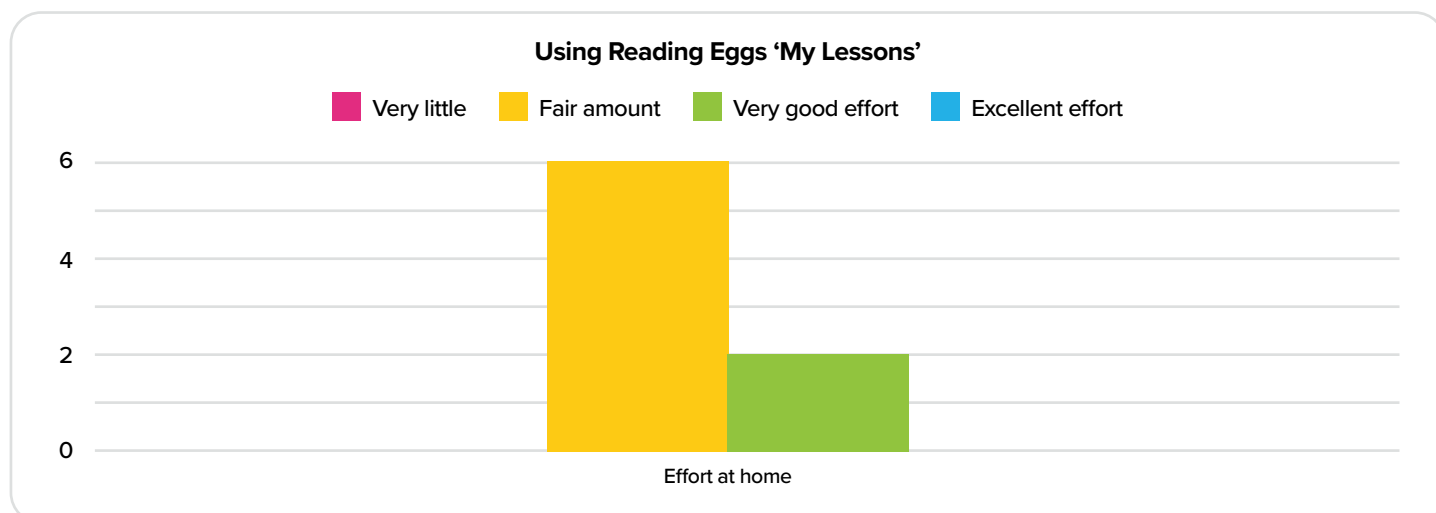
Pupils appear to see technology-based programs as inherently motivating and Reading Eggs recognises the importance of student motivation in improving student learner progress and presents age appropriate, motivational elements that will increase students' time-on-task.



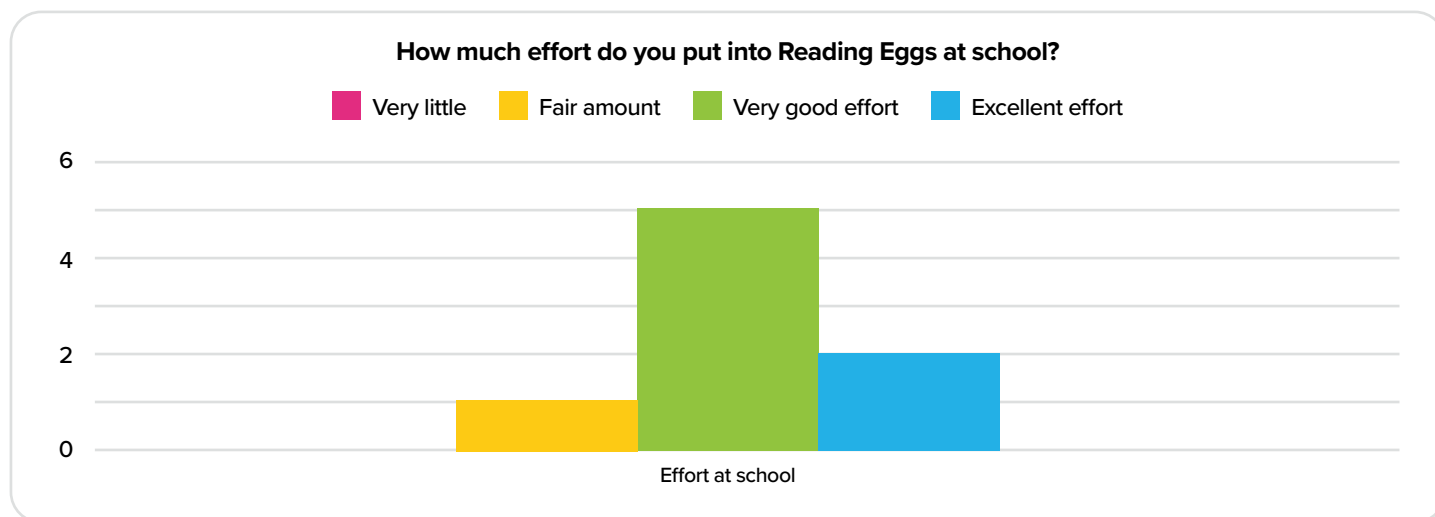
'My Lessons' is the focal point of the program and has been used at home and in school. After every 10 lessons (a map), students complete a 20-question, multiple choice assessment test which, if they pass, allows them to move on to the next level, depending on their score. The levels are a strong motivator to improve student achievement.



The age-appropriate reward systems focus on activities that children enjoy. The reward systems are high-interest, compelling and child-centred and are activated on completion of learning activities and at the end of 10 lessons (a map). When students are motivated and interested, they make greater connections between topics and can recall information more effectively.

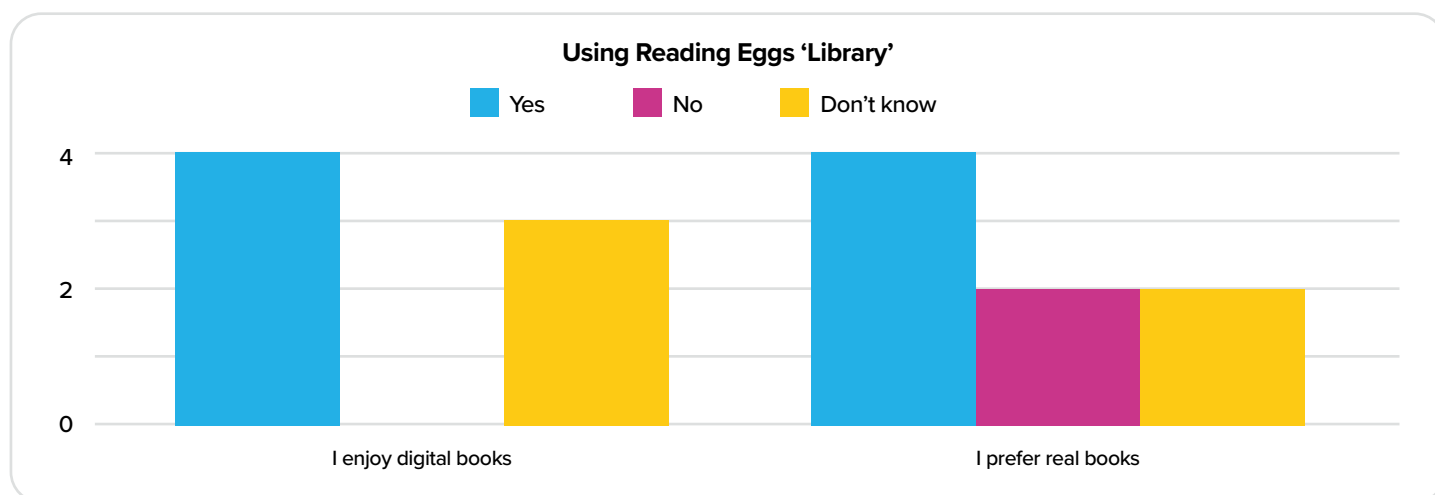


Young children have a real desire to learn to read and if they are supported and successful in their efforts, this interest and desire will continue to grow. Reading Eggs helps to develop this intrinsic motivation by creating an environment that embeds instruction in game-like activities.

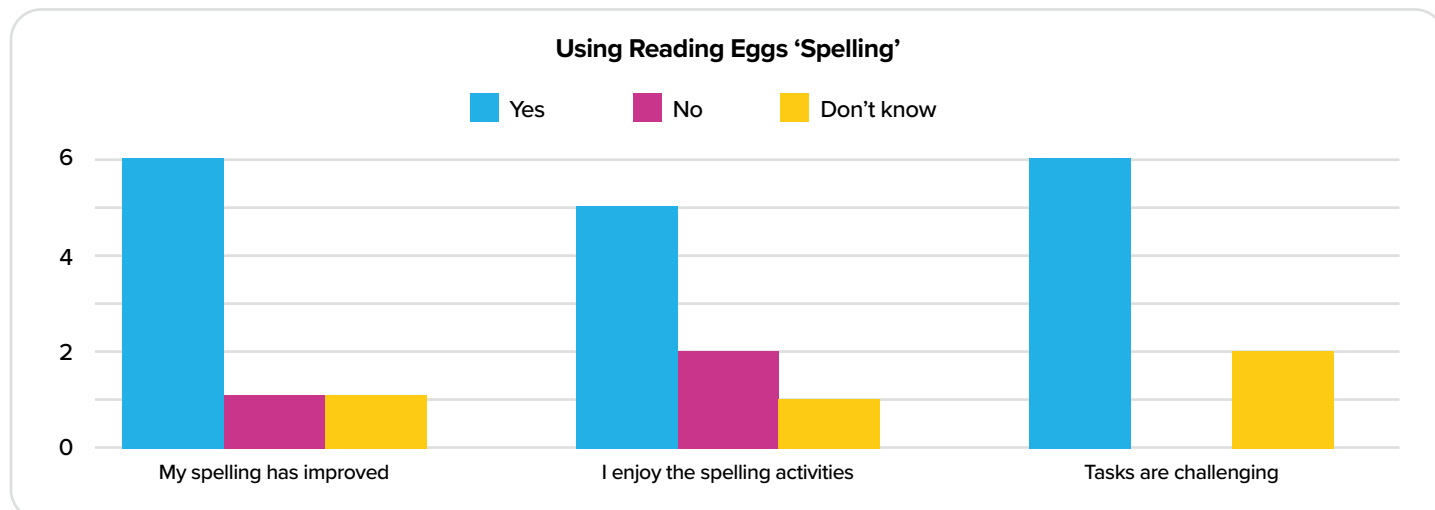


The wide variety of rewards within the program together with the highly interactive nature of the learning activities makes Reading Eggs a compelling learning experience for young learners. Reading Eggs rewards students on the completion of each lesson with a 3-dimensional, fully animated critter that hatches out of an egg. This motivates pupils and has a positive impact on interest and engagement, attention and learning outcomes.

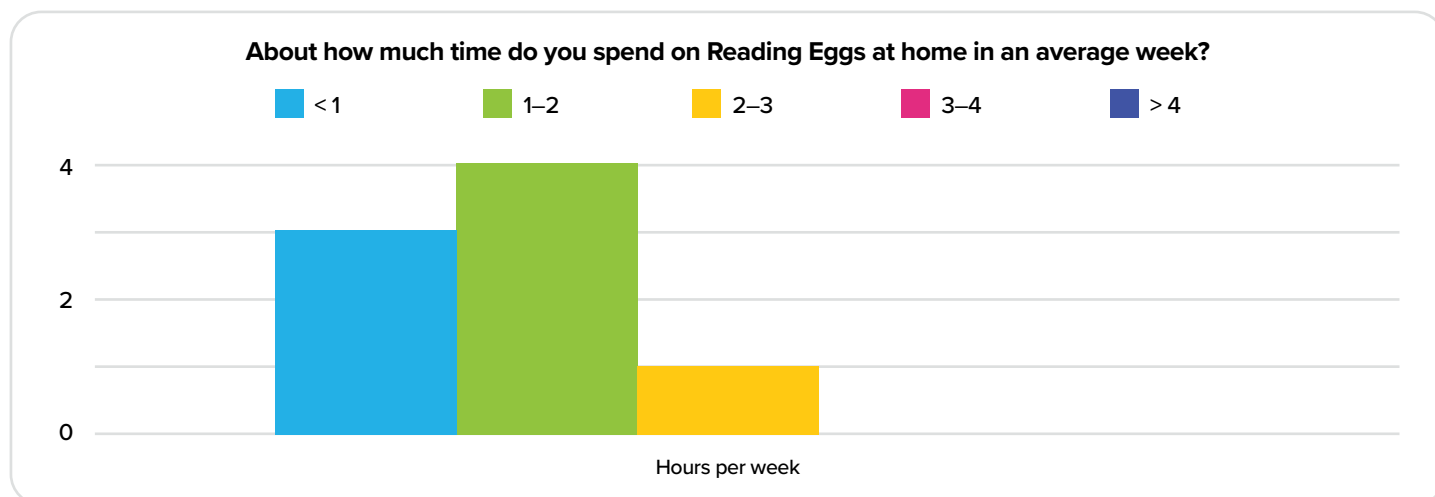
Another feature of Reading Eggs being used is the Library where pupils are set a digital book to read and comprehension quizzes are taken about the text upon completion. These tasks take priority over the 'My Lessons' tasks when a pupil logs in and have been used at home and in school.



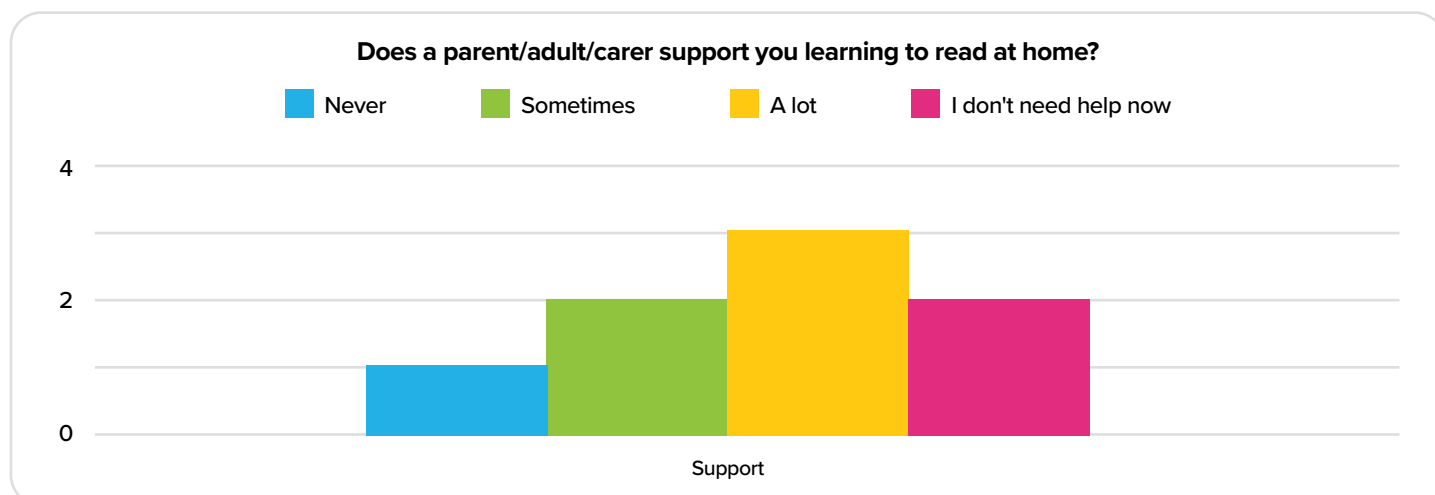
Initially the research project wasn't going to incorporate the spelling feature within Reading Eggs but after trialling the activities with this focus groups I decided to adopt it as a weekly activity on a whole class basis.



When learning is web-based, it provides the flexibility to allow parents to be involved in their children's academic success. It makes it easier for parents to be involved at a time of their choosing whilst they can witness their children's learning successes on the computer as they watch them work through their lessons.



Many factors can inhibit a parent's direct involvement in their children's schooling including their work commitments, ICT equipment and the needs of their other children. The majority of parents are interested in the academic progress of their child and would like to be more involved in helping their children succeed. A program such as Reading Eggs can bridge this gap between school and home and allows parents to be involved in improving their child's learning progress.



Many parents appreciate that the Internet is a useful tool enabling them to be more involved with their child's education. If parents are more involved in their children's education, either at home or at school, students are more likely to achieve at higher levels over a sustained period of time.

Limitations

Pupil absence remains high and some days there have been 20-25% absent on each day of a given week therefore pupils have not had equal amounts of time during school-based use of Reading Eggs.

With regards to home-based use, the selection of the 8 focus group mixed-ability pupils gave consideration to their accessibility to ICT i.e. tablets, laptops, PCs. However, despite this, one pupil has misplaced their tablet whilst another now has a broken laptop, therefore severely restricting their opportunities to use Reading Eggs.

Key /emerging recommendations

The Reading Eggs program combines numerous elements into an engaging, child-friendly world that children enjoy interacting with. Further and more extensive use can only be beneficial to raising standards in Literacy.

Reading

Research supports the explicit teaching of reading comprehension strategies to improve pupil outcomes in the complex task of reading comprehension. As pupils move beyond 'learn to read' to 'read to learn', they encounter texts with ever increasing complexity. Many pupils struggle with the increased conceptual load and cognitive demands of these texts.

Reading Eggspress Comprehension provides a comprehensive and systematic programme of comprehension strategy instruction that models, scaffolds and supports pupil learning in an online environment that is rewarding and motivational. Online software programs can benefit pupils' literacy skills and teachers can tailor activities to the individual needs of each pupil. Reading Eggspress allows teachers to assign lessons, monitor growth and assess pupil progress effectively.

Spelling

Research supports the explicit and systematic teaching of key spelling strategies to assist children to become more proficient spellers. The Reading Eggspress Spelling programme is explicit and systematic with a focus on spelling patterns, structure and meaning features. The lessons allow pupils to learn, practise and consolidate their understanding of spelling. A digital program like Reading Eggs can benefit literacy skills and allows teachers to simultaneously teach, monitor and assess pupils on an independent basis for the multitude of needs in their class.

Links to enquiry resources and additional information

- Ambruster, B. B., Lehr, F., & Osborn, J. (2000). *Put Reading First: The Research Building Blocks for Teaching Children to Read*. National Institute for Literacy.
- Biemiller, A. (2004). *Teaching vocabulary in the Primary Grades: Vocabulary Instruction Needed*. Vocabulary Instruction Research to practice
- Byrne, B., & Fielding-Barnsley, R. (1991). Evaluation of a program to teach phonemic awareness to young children. *Journal of Educational Psychology*
- Chall, J. S., (1983) *learning to read: The great debate*.
- Chall, J. S., Jacobs, V., & Baldwin, L. (1990). *The Reading Crisis: Why Poor Children Fall Behind*. Cambridge, MA: Harvard University Press.
- Compton, D. (1997). Using a developmental model to assess children's word recognition. *Intervention in School and Clinic*
- Durkin, D. (1993). *Teaching them to read* (6th ed.). Boston, MA: Allyn & Bacon. Reading Eggs Scientific Research Base
- Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A metaanalysis. *Educational Psychology Review*
- Stevenson, D. L., & Baker, D. P. (1987). The family– school relation and the child's school performance. *Child Development*
- Yopp, H. K., & Yopp, R. H. (2000). Supporting phonemic awareness development in the classroom. *Reading Teacher*

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What are you learning, individually and as a school, as a result of the enquiry process?

Reading Eggs is providing the school with the opportunity to develop reading and comprehension skills in a fun and exciting way for our 7–11 year-olds. By merging the process of learning to read and the development of comprehension skills with an arcade/gaming type experience, the pupils feel like they are not doing school work and feel that they are playing and gaming, not realizing that they are learning.

The Reading Eggs program has an enormous appeal to pupils of all reading abilities with its wide range of learning resources, lessons, motivational games, e-books and a comprehensive reporting system that together create a unique learning environment. Using a highly engaging floating island metaphor, this spinning world gets students involved and excited as soon as they enter.

Pupils of all reading abilities appear to thoroughly enjoy using technology-based programs and they look forward to the timetabled opportunity they have in curriculum time each week. Pupils will frequently ask to use Reading Eggs if/when they have completed other classwork during the week – this reflects the enthusiasm pupils have for the program. Reading Eggs recognises the importance of student motivation in improving student learner progress and presents age appropriate, motivational elements that will increase students' time-on-task. Reading Eggs helps to develop this intrinsic motivation by creating an environment that embeds instruction in game-like activities.

The wide variety of rewards (such as eggs, trophies and avatars) within the program, together with the highly interactive nature of the learning activities makes Reading Eggs a compelling learning experience for young learners. The age-appropriate reward systems focus on activities that children enjoy. The reward systems are high-interest, compelling and child-centred and are activated on completion of learning. The pupils are motivated by this and it has a positive impact on interest and engagement, attention and most importantly learning outcomes.

The 'Library' has been used to set digital books for pupils to read and comprehension quizzes are taken about the text upon its completion. These tasks take priority over the 'My Lessons' tasks when a pupil logs in and have been used both at home and in school.

Web-based learning provides the flexibility to allow parents to be involved in their children's academic success and makes it easier for parents to be involved in their children's learning. Reading Eggs is an effective resource which bridges this gap between school and home and allows parents to be involved in their child's learning.

The Lexile Framework is an independent measurement tool that measures the degree of difficulty in decoding words in a text, semantics (what the text is about), syntax (how texts are constructed) and language structure (vocabulary). Every book is given a numerical value across the scale. Lexile measures give more information about the difficulty of a text. With every text on the same scale, teachers can more easily compare and chart pupil progress. For readers, Lexile measures give children autonomy to choose from a wide range of suitable texts. No longer restricted to a selection of reading boxes in the classroom, pupils can choose from thousands of books to read. Pupil data is recorded on Reading Eggs as Lexile Growth with additional information such as total hours and minutes spent using Reading Eggs.

For the pupils in my focus group, the following results emerged from this academic year's use of Reading Eggs.

Pupil	ALN / FSM	Ability	Standardised score change	Lexile Growth	Time spent (hr min)
AW		High	+4	28	15hr 9mins
CEP	IDP / Autism	Middle	+2	125	17hr 18mins
DT		High	+12	162	18hr 34mins
EA	Visually impaired	Middle	+2	518	22hr 2mins
ED		High	+3	48	16hr 30mins
JC	IDP / FSM	Low	0	186	11hr 25mins
LD	Autism	Middle	+8	133	22hr 50mins
YS	EAL	Low	+6	214	47hr 3mins
Class average			+1.9	121	10hr 25mins

What's working well? What aspects are most useful?

Pupils have had 20 minutes per week during curriculum time to work on Reading Eggs 'My Lessons' and 'Library' tasks, with an additional 20 minutes per week allowed for the Spelling element of the program. In the 'Teacher Dashboard' I have been able to monitor the hours pupils have spent on Reading Eggs, the number of comprehension 'Lessons' completed, quizzes taken and the 'Lexile Growth' of each pupil. This provides invaluable data for a teacher.

Pupils have had access to the 'Library' where they can choose age-appropriate digital books from a wide range of genre. The Reading Eggs Library has more than 2000 e-books including literature, poetry, and drama texts, as well as non-fiction texts. Library e-books provide level-specific text complexity demands with engaging leveled questions for each book to assess the child's reading comprehension once the book is completed.

I've assigned specific books to individual pupils and 'Library Reports' monitor how many books students have read, types of book, word length and students' quiz scores. The totals provide an excellent overview of progress – books read, total words read, reading age and quiz average.

Children can 'fave' a book and can rate / review each book. When students first choose a book, they can read other students' book reviews and see its rating. All books can be accessed on tablets and all computers with Internet access.

Pupils have also had the opportunity to access the 'Stadium' feature but this has mostly been used in 'Golden time' in class and not in a formal curriculum time context, together with unlimited access at home. The Stadium allows pupils to compete in real time against their classmates as well as students from around the world. The exciting head-to-head contest will test skills in one of three areas – spelling, vocabulary or grammar. 'Stadium' is a highly motivating environment – a virtual world for pupils to explore, where they can earn a variety of rewards:- Golden eggs, Trading cards, Games, an Avatar to personalise and an Avatar's apartment to furnish.

Every book in the Reading Eggspress comprehension program has been independently Lexiled and this includes the 3000+ books in the Library. Using book bands a teacher can quickly place pupils at the right level in the Reading Eggspress program. Lesson books increase in Lexile difficulty as pupils progress through the program and teachers can chart progress through the wide range of reporting tools available. The table makes it easy to keep track of colour bands and Lexile range. By telling pupils their Lexile level, they can search the wide range of fiction and nonfiction books in the Library by Lexile level. Research tells us reading "at the right level" enables confidence and a lifelong love of reading.

What's been more of a challenge? What will you do differently in future?

The profile of our pupils is becoming more complex. There are multiple reasons for this – most notably the impact and lasting effects of Covid19 on pupils' well-being, mental state of mind and their delayed learning development due to lockdowns. But there is also disadvantage, adverse childhood experiences, deprivation, trauma, to name a few which remain a challenge.

What is common across these children is that their learning profile, the ways in which they engage as successful learners, is not typical to those learning pathways that we, as teachers, may have traditionally seen for many years before. However, there are new digital teaching resources, such as Reading Eggs, which positively engage pupils in learning to read and enjoy the process of reading and this can be a highly effective learning resource. Therefore, we as teachers need new tools, such as Reading Eggs, in our pedagogy ('teaching toolkit') to extend our repertoire, and ensure every child is positively and meaningfully engaged in their learning again. We, as educators, are in the middle of a period of transition in which traditional teaching methods are steadily giving way to new digital approaches and we should embrace this.

Many factors can inhibit a parent's direct involvement in their children's schooling including their work commitments, ICT equipment in the home, together with the needs and demands of their other children and family life. This can determine how much time a parent spends with their child to support them in their learning and particularly with homework tasks. Likewise, some parents are more involved than others in their child's education and specifically their school homework and parents will have their own views on how much support they give their child whilst they are completing homework tasks. Therefore, it is very difficult to accurately judge or evaluate the impact of parental support to a child's progress or indeed measure the effect or impact encouragement has upon their reading development.

Moving forward into the next academic year I would seek to:

- i) Continue to encourage the use of Reading Eggs by pupils.
- ii) Promote the use of Reading Eggs with parents through letters/ClassDojo messages and parents' evenings.
- iii) Host a parents information evening for incoming Year 3 parents about the use of Reading Eggs and the benefits of supporting their child with this homework.
- iv) Share findings of this study with school colleagues and disseminate the wider use of the Library, Spelling and the management of pupil data generated by Reading Eggs.

How will you sustain and develop the culture of enquiry in your school?

Enquiry needs to become a dynamic in every day practice; teachers need to be equipped with the skills to investigate, discover and reflect on what the most successful ways of engaging a child as an effective learner are.

Teachers will need the time to:

- identify issues/problems/successes in existing teaching, learning and pedagogy;
- develop inquiry questions and use existing published research to inform decisions;
- collect data (e.g. through observation, photographs, audio or video recording; quantitative data; interviews; questionnaires);
- critically interrogate and reflect on practice;
- analyse/interpret quantitative and qualitative data;
- develop and implement new strategies to enhance student learning outcomes;
- assess and evaluate the extent to which strategies or action have improved learning or the learning environment.

For our school to develop and sustain a culture of enquiry, there are five areas of importance:

Leadership; Support systems for engaging research; Research activity; Impact; Sustainability.

In the most research-engaged schools, senior leaders encouraged “enquiry” as a dominant mode of professional learning. Research flourishes in an environment where practices are openly challenged and where teachers work together collaboratively. For a school with a healthy professional culture, it provides fertile ground for research activity to quickly grow.

“Lack of time” is the most regularly cited barrier to teacher engagement in research. Since teachers in the UK spend more time in the classroom than many of their counterparts in other developed countries this is an issue that may be addressed by allocating designated research time into staff meetings or training days. Teachers can lack confidence in conducting school-based research/enquiry, so working in small teams could help to overcome another significant hindrance to research activity. The National Teacher Research Panel in 2011 concluded that “teachers seldom engaged in research in order to gain a qualification, professional development and ideas for using in the classroom were the two most commonly mentioned reasons for engaging with research” (NTRP, 2011).

Impact is effective when a school is committed to sharing the results of its research within and maximising its impact on practice. Nevertheless, our school should still have “an outward-looking orientation.”

For sustainability our school should have a senior member of staff whose role is the promotion and co-ordination of school-based research/enquiry. This is key to the sustainability of school’s researching culture and its continuity beyond the withdrawal of funding or departure of an individual.

To conclude, school research engagement is best seen as a conscious leadership strategy aimed at developing a school over a period of many years. The pinnacle is to reach a culture in which school-based research/enquiry is “embedded”, ie “a vision, a set of procedures which become integral to the structure and culture of the organisation. Over time, sooner or perhaps later, new ways of seeing and acting become habitual, reflexive and ingrained in practice” (Swaffield and MacBeath, 2006).

As a school, how are you evaluating the impact of enquiry?

As the lead person for research based enquiry, I will be monitoring the on-going use of Reading Eggs and on a termly basis be comparing the standardised score data and lexile growth of all pupils in each year group, to identify trends and patterns in pupil progress in line with the use of Reading Eggs.

As a school we will be able to evaluate the effectiveness of research based enquiry and reflect on the impact this is having on pupil progress in reading.