Mapping the interrelationships of reading enjoyment, attitudes, behaviour and attainment

An exploratory investigation

Christina Clark and Sarah De Zoysa
National Literacy Trust

July 2011

Transforming Lives

This report is the property of the National Literacy Trust and is protected by copyright law.

National Literacy Trust will consider requests to use extracts or data from this publication provided that you:

- Acknowledge that the content is the work of the National Literacy Trust and provide appropriate references in any publications or accompanying publicity.
- Anonymise all data to protect the identity of any individual or organisation.
- State that any views expressed are yours and not necessarily those of National Literacy Trust.

Suggested reference for this report is: Clark, C and De Zoysa, S. (2011). Mapping the inter-relationships of reading enjoyment, attitudes, behaviour and attainment: An exploratory investigation. London: National Literacy Trust.

# Table of contents

Figures and tables

Executive summary

It is frequently said or implicitly assumed that there is a positive relationship between enjoyment, attitudes, behaviour and attainment, with pupils who enjoy reading or writing having more positive attitudes towards it, doing it more and thereby getting better at it. But to what extent is this an assumption or to what extent is it based on empirical evidence?

A brief review of the literature uncovered a predictably complex picture, with findings that sometimes contradict each other. This picture is aggravated by a lack of common definitions, frequently confused terms, over-used buzz words and, frankly speaking, oftentimes sweeping statements that are not based on empirical evidence.

Looking to our own research as a second step, we explored the frequently neglected aspect of the interrelationships of pertinent variables. In our study, these were reading enjoyment, attitudes, behaviour and attainment. Using structural equation modelling based on a survey of 4,503 young people for whom we had attainment data as well as information on their reading enjoyment, attitudes and behaviour, we explored the validity of various possible models of relationships.

We found that the model of best fit is one where reading enjoyment is a doubly powerful source of influence, being related to attainment both directly and indirectly through its relationship with reading behaviour, which, in turn, is related to reading attainment (see **Figure A**). Attitudes towards reading are also indirectly related with reading attainment through their relationship with reading behaviour.

Figure A: Model of relationships in the present study, with bolder paths indicating stronger relationships
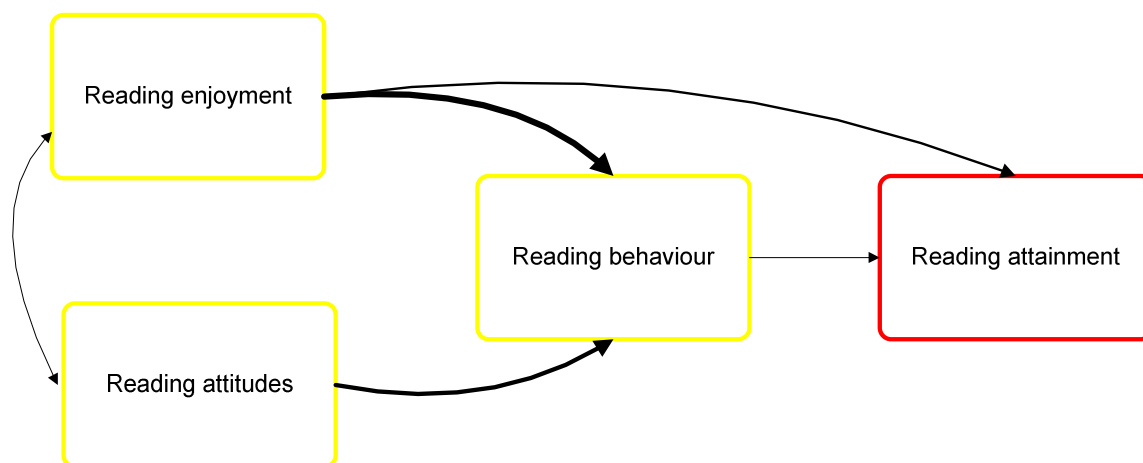
While being a first step to exploring the interplay between enjoyment, attitudes, behaviour and attainment, present findings need to be put into context. Cross-sectional data, such as the ones used in this brief paper, are only of limited use in investigating the ins and outs of complex relationships. While the models show relationships in terms of preceding and succeeding influences, they are only a temporal snapshot and the causal nature of this relationship associating enjoyment, attitudes and behaviour with attainment cannot be asserted from these data. Longitudinal data are therefore clearly necessary as a next step to explore possible causal relationships in this already complex interplay of variables.

Having said all that, building on what we have learned, we wonder whether the following "cycle of positive influence" might be an appropriate way to take current thinking forward. In the home

literacy environment, children will (or will not) take part in storytelling and other language development activities, which we have termed "behaviour". If the experience is a positive one and they are motivated by the activity (through enjoyment or another motivating factor such as an extrinsic reward), they will develop initial positive attitudes. However, these attitudes will need to be positively reinforced (behaviour) in order for them to remain positive and for the cycle to continue.

We expect there to be different models of positive influence depending on the age, and perhaps the gender, of the child. We could also speculate that children who did not grow up in a literacy-rich environment to need a significant event (e.g. a book-gifting event, an interesting book, an interesting conversation or a stimulating trip to the library) to kick-start this model by influencing reading enjoyment and attitudes towards reading.

However, it is unclear to what extent the cycle would work without all of its constituent parts. To our mind, behaviour is perhaps the only element that definitely cannot be removed from the cycle. You may not have positive attitudes about reading, but as long as you still do it, you will still do better at it than if you do not do it at all and have positive attitudes.

If that is true then could attitudes and enjoyment be described as "enhancers", enabling you to continue to do it in the long term, while short term gains could be achieved from high frequency of reading, such as knowledge acquisition? These are clearly thoughts that we will need to explore in future research.

Overall, these findings underscore the importance of developing effective methods to encourage children and young people to read for pleasure. Not only will our increased understanding of the relationships between reading enjoyment, attitudes, behaviour and attainment better help us to influence education policy and practice, it will also help us to strengthen the work carried out across the National Literacy Trust and will provide a strong evidence base for our projects to promote the importance of reading for pleasure.

Introduction

It is frequently said or implicitly assumed that there is a positive relationship between enjoyment, attitudes, behaviour and attainment, with pupils who enjoy reading or writing having more positive attitudes towards it, doing it more and thereby getting better at it. But to what extent is this an assumption or to what extent is it based on empirical evidence?

A guide to this paper

The following sections briefly explore the evidence for a relationship between reading attainment and reading enjoyment, attitudes towards reading or reading behaviour. The first few sections outline some of what is known about the relationship between attainment and one other reading variable at a time. The final section in this introduction then explores the evidence for any known interrelationships between the constructs of interest. As will become clear, this is largely an unexplored area.

This brief review is then followed by an exploration of the relationships and interrelationships using our own data from a recent survey of 17,089 8-16-year-olds, where attainment data were also available for 4,503 participating young people.

The discussion then builds on the findings from both the brief review of the literature and our own survey analyses and provides some steps to explore the issues raised further in current thinking and practice.

Reading enjoyment and attainment

The positive relationship between enjoyment and attainment is often believed to be a given (for an overview of reading for pleasure and its link to reading in general see Clark and Rumbold, 2006). Indeed, studies have reported a strong positive relationship between the two (see Blunsdon et al., 2003; OECD, 2010), with young people who read for enjoyment doing better in reading tests than their peers who do not enjoy reading. This applies to reading done both in and out of school (Krashen, 1993; Anderson et al., 1988). There is also evidence that reading enjoyment is related to specific attainment facets, such as text comprehension and grammar (Cipielewski and Stanovich, 1992; Cox and Guthrie, 2001) as well as breadth of vocabulary (Angelos and McGriff, 2002).

However, there is also some evidence to suggest that increases in attainment are not necessarily mirrored by greater reading enjoyment, more positive attitudes or changed reading behaviour (e.g. Rieber and Noah, 2008; Taylor et al., 1990). For example, it is possible for children to achieve reading standards while not enjoying reading, and there is evidence that English primary pupils' relatively high attainment in reading skills (compared with their peers in other countries) is at the expense of their enjoyment of reading (Whetton, Ruddock and Twist, 2007; Sturman and Twist, 2004/5).

Circumstantial evidence also comes from a survey of headteachers on their views on the National Literacy Strategy (Hurd, Dixon and Odham, 2006), which showed that headteachers were more likely to agree with the statement that since the Primary Literacy Strategy began standards of reading had improved in their school (49%) than they agreed with the statement that pupils are now more likely to read for pleasure (23%). This might suggest that when the focus is on standards, gains in reading for pleasure are less pronounced.

In light of this focus on standards, it is easy to forget why enjoyment of reading is worthy of consideration. Some studies show that young people do not reach their academic potential because they do not enjoy learning (e.g. Goetz, Hall, Frenzel, and Pekrun, 2006; Shernoff, Csikszentmihalyi, Schneider, and Shernoff, 2003). According to Lumby (2011),

Lack of enjoyment is therefore implied to be a cause of failure to learn. Much discussion of the relationship of enjoyment to learning assumes that learning is contingent on a willingness to engage and to persist, and that this will not be forthcoming unless the learning task is assessed as potentially enjoyable, resulting in motivation to start, and experienced as enjoyable, resulting in persistence.

Interestingly, according to Lumby (2011), we can look at enjoyment in two different ways. We can consider it as a retrospective state that relates to whether pupils enjoy it in general and this will reflect many different factors, such as whether they liked the librarian, if they associate reading with being with their friends etc. Or they may evaluate their enjoyment of reading based on a *particular* reading task or activity.

The evidence about the nature of the relationship between enjoyment and attainment is equivocal. However, it might be argued that enjoyment tends to be a direct and immediate experience, whereas learning is a time-dependent process. This could suggest that enjoyment is temporally prior to learning, and for x to cause y, x must precede y. However, it is equally plausible that students' enjoyment of a topic grows as they feel more knowledgeable about it (Blunsdon et al., 2003).

Relationship between attitudes and attainment

Compared with enjoyment of reading, the relationship between reading attitudes and attainment is clearer and the evidence more unanimous in that research has repeatedly found that positive reading attitudes are linked to achievement (McKenna and Kear, 1990).

More specifically, studies have time and again shown that lower attaining pupils hold more negative attitudes towards reading compared with their higher attaining peers (e.g. Brooks, Schagen and Nastat, 1997; Ofsted, 2004; Twist et al., 2003 and 2007; Sturman and Twist, 2004/5). The most recent PIRLS (Twist et al., 2007) also showed that, on average, 10-year-old pupils at the high level of the index of positive attitudes toward reading had substantially higher reading achievement scores than those at the medium or low levels. At least for reading at this age, it seems that positive attitudes and high achievement in reading go hand in hand. Indeed, a recent meta-analysis (Petscher, 2010) showed that the strength of the relationship between attitudes and attainment is stronger for primary pupils compared with older pupils.

According to Ofsted (2004; also see Skinner et al., 2009), while most pupils initially feel positive about reading, those who are not good at reading often develop negative attitudes towards it. This then leads to a vicious, reinforcing circle whereby pupils who fail to make the necessary progress see the gap between their reading and that of their peers widening, and as a result their negative attitudes harden. Ofsted also reported in their review that these negative attitudes could frequently be reversed by intervention programmes that helped to improve their skills, change their view of themselves as readers, thereby motivating them to persevere and improve.

Due to a lack of longitudinal datasets that explore both reading attainment and reading attitudes, very little evidence exists about the causal nature of this relationship. Exploring the link with regard to mathematics using a large longitudinal US sample, Ma and Xu (2004: 273) found that

Prior achievement significantly predicted later attitude across grades 7-12. Prior attitude, by contrast, did not meaningfully predict later achievement. We conclude that

achievement demonstrated causal predominance (priority) over attitude in the entire secondary school... .

Attitudes towards reading have been positively related to attainment across studies. While often presumed to be cyclical, the ball has to start rolling somewhere. However, it is unclear whether attitudes towards reading fuel reading attainment or whether reading attainment promotes attitudes.

It may also be worth considering that attitudes related to reading reflect a myriad of factors. Some attitudes are related to the general experience of reading – enjoyment in reading with family, in reading certain formats, or a generalised attitude that 'reading is boring'. These attitudes, whilst significant, are most influenced by another set of attitudes that relate to confidence and perceived ability as a reader. These may need to be unpicked to understand their relationship with attainment more clearly and to explore whether some are more dominant than others.

Relationship between behaviour and attainment

Using reading frequency as an indicator of reading behaviour, correlational studies have consistently shown that those who read more are better readers. An international study of 10-year-olds (PIRLS 2001 and 2006, see Twist et al., 2003 and 2007) showed that in nearly all countries, pupils who reported reading for fun outside of school, daily or almost every day, had higher reading achievement than those reading for fun less frequently.

Indeed, reading amount and reading achievement are thought to be reciprocally related to each other – as reading amount increases, reading achievement increases, which, in turn, increases reading amount (Cunningham and Stanovich, 1998).

On the flipside, children who do not read frequently do not have the benefits that come with reading, and studies show that when struggling readers are not motivated to read, their opportunities to learn decrease significantly (e.g. Baker, Dreher and Guthrie, 2000; Stanovich, 1986). This can lead to strong negative feelings about reading and create a vicious circle in which poor readers remain poor readers (Juel, 1988). By reading less, they also have fewer opportunities to develop reading comprehension strategies (Brown, Palinesar and Purcell 1986).

One study conducted by the National Assessment of Educational Progress (NAEP) in 2000 researched fourth-graders' reading habits in the US. This study showed that "reading for fun had a positive relationship to performance" on the reading test. 87% of the students who said they read for fun at least once a month attained a proficient level. On the other hand, students who rarely read for fun only attained a basic level. The highest scorers were children who read for pleasure every day.

Studies have highlighted a positive association between reading frequency and reading attainment, with pupils who tend to read frequently doing better in reading than those who do not read as frequently. However, again due to the lack of any study that has explored this relationship over time, it is currently unclear whether reading frequency promotes attainment in reading and whether reading attainment generates greater interest in reading and greater reading frequency.

More complex relationships: Any evidence?

So far, enjoyment, attitudes and behaviour have been explored separately in their relationship with attainment. Is there any evidence on the interplay between two or more variables and their relationship with attainment? The number of studies that have explored such an interplay are few and far between.

In one of the few studies that explored both reading enjoyment, reading behaviour and reading attainment, Twist and colleagues (2007) found in their PIRLS data that pupils who enjoy reading and perceive themselves to be good readers usually read more frequently and more widely, which, in turn, broadens their reading experience and improves their comprehension skills.

The most recent international study of 15-year-olds, PISA (OECD, 2010), also showed that strong engagement in reading (reading engagement to them includes reading enjoyment, reading attitudes and reading behaviour) is associated with high levels of reading literacy.

Indirectly, evidence also comes from sources such as UKLA Teachers as Readers Phase II – 2007-2008,;Teachers as Readers Building Communities of Readers (Cremin et al., 2008). As children identified as reluctant and disaffected readers in this study became drawn into reading their perceptions of their abilities as readers and self-confidence improved. They showed increased pleasure in reading and began to read both more regularly and more independently. The majority of the children's attainment showed above average increases across the year. Children's talk about reading and texts also became significantly more spontaneous, informed and extended.

In sum, there is some evidence that a range of variables have a relationship with attainment and are also related amongst themselves. However, these studies do not explore in detail the interrelationships of the variables, which will be the focus of the remainder of this paper.

To sum up so far

A predictably complex picture has been uncovered, with findings that sometimes contradict each other. This picture is aggravated by a lack of common definitions, frequently confused terms, over-used buzz words and, frankly speaking, oftentimes sweeping statements that are not based on empirical evidence.

However, based on previous research, **Table 1** outlines the relationships with attainment that we would expect to find so far, with + indicating a positive relationship between the variable and attainment and – indicating a negative relationship.

Table 1: Proposed relationships

	Reading attainment
Reading enjoyment	+ or -
Reading attitudes	+
Reading behaviour	+

It should be noted, however, that the research literature may in part not be providing a clear picture of the actual relationships as terms are often used interchangeably or with different meaning. This makes comparisons between studies and their relationships difficult.

Our own evidence

Based on previous research outlined above, which has painted a rather complex but sometimes vague and inconclusive picture, several (inter-)relationships are possible between reading enjoyment, attitudes, behaviour and attainment.

Looking to our own research as a second step, we will explore the frequently neglected aspect of the interrelationships of pertinent variables. In our study these were reading enjoyment, attitudes, behaviour and attainment. Using data from a 2009 survey of 4,503 young people for whom we had attainment data as well information on their reading enjoyment, attitudes and behaviour, we explored the validity of various possible models of relationships (for more information see Clark and Douglas, 2011).

The following few figures visualise some of the interrelationships that we could expect to find. The validity of these models will be measured in this study using a statistical technique of structural equation modelling. One standard approach employed in structural equation modelling is to test alternative models in addition to a hypothesised one to eliminate the possibility that any other model might fit the data better. This is particularly poignant in a situation like the current one where very few previous conceptions exist.

Firstly, as shown in **Figure 1**, while correlated amongst themselves, reading enjoyment, reading attitudes and reading behaviour are independently related to reading attainment. We shall call this the simple model.

Figure 1: Simple model (M_{simple}) of the relationship between reading enjoyment, attitudes, behaviour and attainment as an outcome
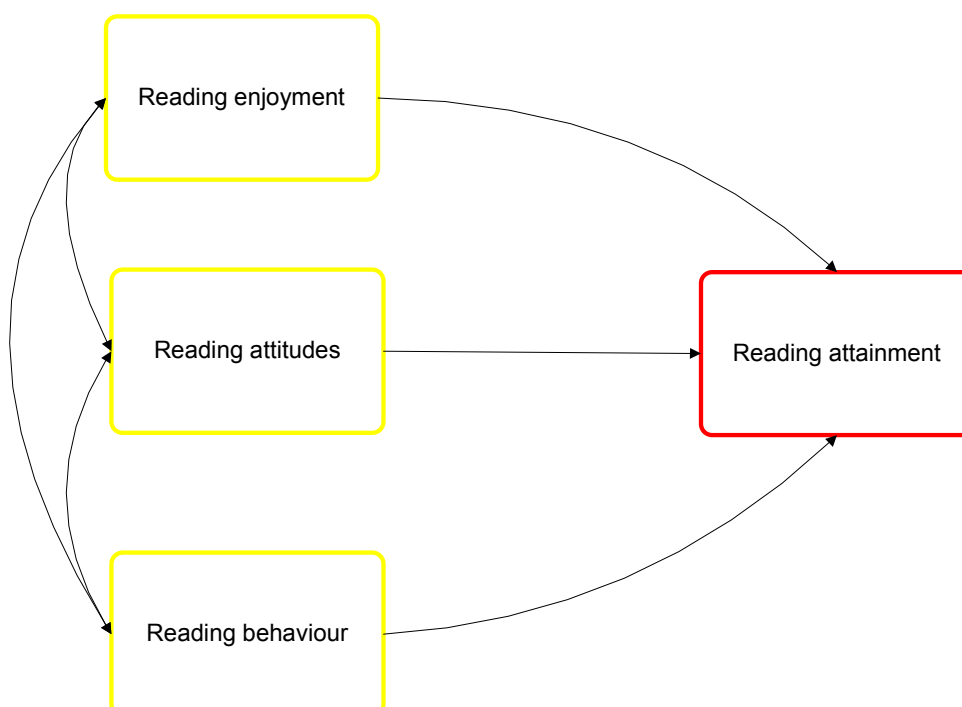
An alternative model based on the evidence reviewed earlier is shown in **Figure 2**. In this model, we shall call it the semi-hierarchical model, reading enjoyment and reading attitudes precede reading behaviour, which, in turn, is related to reading attainment. In other words, reading enjoyment and reading attitudes are directly related to reading behaviour and are related with reading attainment indirectly through their relationship with reading behaviour.

Figure 2: Semi-hierarchical model (M_{semi}) of the relationship between reading enjoyment, attitudes, behaviour and attainment as an outcome
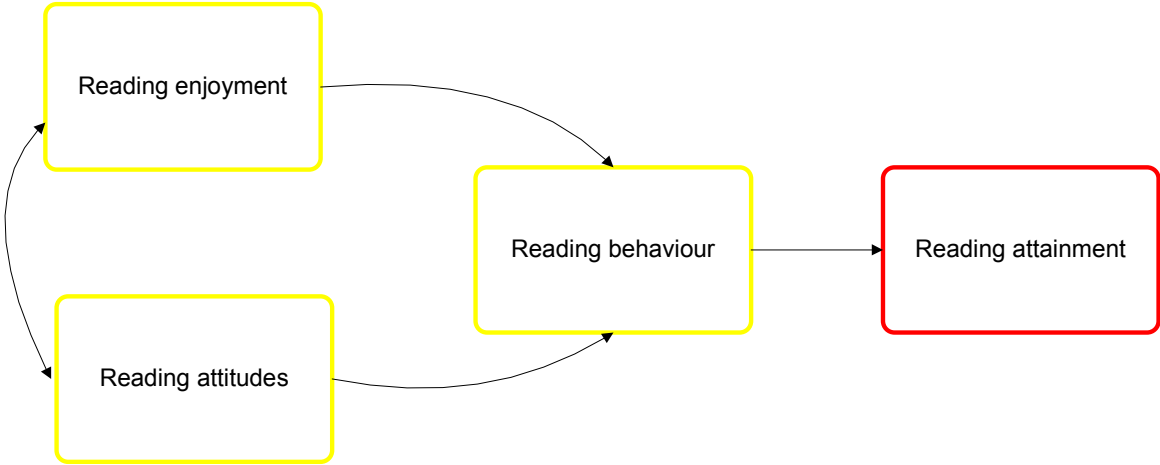
Lastly, a third model is one in which reading enjoyment is related to reading attitudes, reading attitudes are related to reading behaviour, and reading behaviour is related to reading attainment following a hierarchical structure. Because of its linear structure, we shall therefore call this the hierarchical model, which is shown in **Figure 3**.

Although inelegant in modelling circles, where models should be built on *a priori* models and be based on previous thought or research, other hierarchical models with different placements of variables are also explored and tested.

Figure 3: Hierarchical model ($M_{hierarchical}$) of the relationship between reading enjoyment, attitudes, behaviour and attainment as an outcome
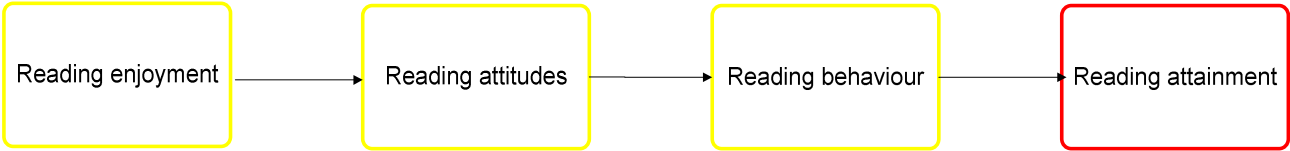
Methodology

An invitation to participate in this online survey was sent out in National Literacy Trust newsletters at the beginning of October. Schools were invited to express their interest to participate in one of three surveys:

    1) A simple survey of enjoyment, attitudes and behaviour (without attainment data or

name field).
   2) An extended survey with two attainment questions for pupils to fill in.
   3) An extended survey with a name field and schools were asked to send us the reading and writing attainment data for participating pupils.

The basic online survey consisted of 32 questions, exploring young people's background, reading and writing behaviour, reading enjoyment, perceived ability and attitudes. Due to the complexity of the questions and some concepts, the decision was made to restrict the age range of participating pupils to upper KS2 (9 to 11 years) and older.

155 schools expressed an interest to take part in one of the three surveys. A link to the online survey alongside guidance notes for teachers was emailed to the schools at the beginning of November. The survey was online between 16 November and 4 December. It took an average of 15 minutes for young people to complete the survey. Schools were offered a school-specific summary report as an incentive to take part.

Overall, 17,089 pupils from 112 schools participated in our online survey. 101 were schools from England, four from Wales, six from Scotland and one from Northern Ireland. One international school from Indonesia, an English-speaking school with a UK curriculum, also took part. However, data from this school are not included in the analyses in this report.

It should be noted that about 764 Scottish pupils, 462 Welsh pupils and 391 pupils from Northern Ireland took part in the survey. No differences were found in terms of reading and writing behaviour, attitudes and enjoyment between English and Scottish pupils of the same age, and therefore the data here are presented for the sample as a whole. Although the term "key stage" only refers to England, Wales and Northern Ireland, key stage data will be used to compare pupils of similar age in England and Scotland.

Attainment data for reading were available for 4,503 **KS2** (aged 8–11) and **KS3** (aged 11-14) pupils. Since our attainment data contained a varied set of levels and spanned young people aged 8 to 14, we standardised the data to form equivalent levels. Three crude categories to be applied to all ages were created for the following analyses: below expected level for their age, at expected level for their age and above expected level for their age.

In line with official attainment figures, **Table 2** shows that over 8 in 10 young people read at or above the expected level for their age. However, nearly a fifth read below the expected level for their age.

Table 2: Reading attainment categories

	Reading attainment (N = 4,503) %
Below expected level for age	17.6
At expected level for age	68.9
Above expected level for age	13.5

Analyses: The technical bit

Each proposed model was tested using structural equation modelling (SEM) with Maximum Likelihood Estimation based on a covariance matrix in LISREL 8.8 (Jöreskog and Sörbom,

2002). The error terms were based on the reliabilities of the respective scales. A "two-step" approach to SEM generation involves estimating a measurement model before a structural model is tested (Anderson and Gerbin, 1988). However, this approach is inappropriate when concepts have fewer than three indicators, as was the case here (cf. Hayduck, 1996).

Since reading frequency was assessed by only one item, the reliability could not be calculated for this variable. A reliability coefficient of 0.80 was therefore conservatively estimated for this measure. The assumed values of the reliabilities in this study would affect parameter estimate as well as standard errors. In order to adjust for measurement error, the error variance for each of the two attitudinal scales was set to one minus the reliability times the observed variance of the scale (see Cohen et al., 1990; Jöreskog and Sörbom, 1996). The paths from latent variables to their indicators were set to one (Jöreskog and Sörbom, 1996).

The fit of each model was evaluated using the chi-square test, the Goodness-of-Fit Index (GFI), the Adjust-Goodness-of-Fit Index (AGFI) and the Root Mean Square Error of Approximation (RMSEA). The chi-square test is an inferential test of the null hypothesis that the population covariance matrix for the observed variables equals the population covariance matrix. A satisfactory fit of the model is thus obtained when the chi-square test is non-significant, indicating that the null hypothesis cannot be rejected (Bollen, 1989).

Alternative models were evaluated using the Expected Cross Validation Index (ECVI), which is a measure of the discrepancy between the model-implied covariance matrix in the sample and the covariance matrix that would be expected in another sample of the same size. The smallest ECVI estimate indicates the model with the best fit.

Path coefficients and squared multiple correlations (R^2) values were also used to evaluate the predictive power of the model since they provide different information from comparisons based on fit indices. Fit indices provide information on the predictive utility of a model, while R^2 comparisons indicate the power of a model to reproduce observed covariance/correlation matrices (Bollen, 1989).

Before the analyses, the distributional properties of the data were explored and screened for outliers and missing values. 40 missing values were identified, which were substituted by the mean following guidelines of du Toit and du Toit (2001). The univariate and multivariate distributional properties of the data were then determined, which indicated that the distribution was multivariate normal with a univariate skewness ranging from -2.100 to 1.924 and a kurtosis ranging from -1.563 to 2.099, indicating that the responses were normally distributed.

Some general findings

Enjoyment of reading

Enjoyment in the present study refers to the pleasure derived from engaging in literacy activities; reading in the present case. Reading enjoyment was assessed in two ways. Firstly, young people are asked "How much do you enjoy reading?" Young people were also asked how much they agreed or disagreed with four statements assessing enjoyment: reading is boring, I enjoy reading, I only read when I have to and I only read in class.

51% of young people enjoy reading either very much or quite a lot. Over a third only enjoy reading a bit, while 10% do not enjoy reading at all.

When asked how much they agree or disagree with four statements further assessing reading enjoyment, 18.8% of young people either strongly agreed or agreed that reading is boring and a quarter strongly agree or agree that they only read because they have to. Most also strongly

disagreed or disagreed that they only read in class. Conversely, 59% of young people strongly agreed or agreed with the statement that they enjoy reading.

Analysis based on the data of 4,503 8 to 14-year-olds shows that enjoyment of reading is positively related to reading attainment (r = .412; p =.001; see **Table 7**), indicating that those pupils who enjoy reading more are also the ones who are better at reading.

Looking in detail at the relationship between enjoyment of reading and reading attainment, **Table 3** shows that young people who read at or above the expected reading level for their age enjoy reading more than young people who read below the expected level for their age.

Please note that while enjoyment is related to attainment, our research design can make no inference about causality; that is, higher attainment may lead to greater enjoyment or greater enjoyment may lead to higher attainment.

Table 3: Percentage of young people who read below or at or above the expected level and their enjoyment of reading (N = 4,503)

How much do you enjoy reading?				
	Very much %	*Quite a lot* %	*A bit* %	*Not at all* %
Below expected level for age (N = 793)	6.7	13.4	32.6	47.7
At expected level for age (N = 3,102)	21.7	35.6	37.2	5.6
Above expected level for age (N = 608)	55.7	21.8	16.1	6.4

This pattern of responses is mirrored in the **Table 4**, which shows that young people who read below the expected level for their age are four times as likely to agree that they only read in class and three times as likely to agree with the statement that reading is boring than young people who read at or above the expected level for their age. They are also three times as likely to agree with the statement that they only read when they have to than their better performing peers. It also shows that young people who struggle with reading are less likely to agree with the statement that they enjoy reading compared with their peers who read at or above the expected level for their age.

Table 4: Percentage of young people who read below or at or above the expected level and their agreement (either strongly agree or agree) with attitudinal statements (N = 4,503)

	Below expected level for age (N = 793) %	*At expected level for age (N = 3,102)* %	*Above expected level for age (N = 608)* %
Reading is boring	36.5	13.0	11.6
I enjoy reading	32.0	65.9	81.8
I only read when I have to	63.3	19.6	17.4
I only read in class	47.8	11.2	10.2

After recoding reading is boring, I only read when I have to, and I only read in class, the four items were combined into a scale (Cronbach's alpha = .81) for the following analyses.

Reading behaviour

Reading behaviour typically refers to the frequency, width and breadth of person's reading. In the present study it was assessed by one variable, which explored the frequency with which young people read outside of class.

When asked how often they read outside of class, most young people read outside of class every day (32%) or two to three times a week (29%). Only 7% do not read outside of class.

The frequency with which young people read was related to their reading skills. **Table 5** shows that only 13% of young people who read below the expected level for their age read every day compared with 36% of young people at or 60% of young people above the expected reading level for their age. Conversely, young people who struggle with reading are more likely to say that they rarely or never read compared with young people who are at or above the expected reading level.

Table 5: Percentage of young people who read below or at or above the expected level and the frequency with which they read (N = 4,503)

	Below expected level for age (N = 793) %	At expected level for age (N = 3,102) %	Above expected level for age (N = 608) %
Every day	13.4	35.8	59.7
2 – 3 times a week	26.9	32.6	18.2
2 – 3 times a month	10.1	10.3	4.5
Once a month	6.1	4.3	2.3
A few times a year	6.9	3.1	2.5
Rarely	22.0	10.3	7.9
Never	14.6	3.6	4.9

Attitudes towards reading

Attitudes towards reading have been defined as students' feelings about reading, which result in approaching or avoiding reading tasks (Cooter & Alexander, 1984). In the present study, attitudes towards reading were assessed by agreement or disagreement to seven statements.

Young people held positive attitudes towards reading. Most agreed that reading is important and they disagreed that reading is hard and that they cannot find anything interesting to read.

There were significant differences in attitudes towards reading by young people's reading attainment (see **Table 6**). Overall, young people who read at or above the expected level for

their age hold more positive attitudes towards reading than young people who read below the level for their age.

Significantly more young people who read below the level for their age compared with their higher attaining counterparts agreed with the statements that reading is more for girls than boys, that reading is hard, that they cannot find things to read that interest them and that they do not read as well as other pupils in their class.

Similarly, they were significantly less likely than their higher achieving counterparts to agree with the statements that reading is important, that reading is a skill for life and that reading tells them what they need or want to know.

Table 6: Percentage of young people who read below or at or above the expected level and their agreement with attitudinal statements (N = 4,503)

	Below expected level for age (N = 793) %	At expected level for age (N = 3,102) %	Above expected level for age (N = 608) %
Reading is more for girls than boys	19.4	9.4	13.3
Reading is hard	59.3	2.8	3.2
Reading is important	65.4	81.0	84.9
I cannot find interesting things to read	44.6	24.7	18.2
I do not read as well as other pupils in my class	54.7	19.2	8.1
Reading is a skill for life	65.3	80.9	86.1
Reading helps me find what I want or need to know	57.7	69.7	76.2

Some of the items were recoded and then all of the items were combined to form a scale (Cronbach's alpha = .713) for the following analyses.

Interrelationships

Table 7 provides the correlations between the variables used in the present study and shows that reading enjoyment correlated highly with reading attitudes, confirming a pattern suggested by Guthrie and Alvermann (1999). Reading enjoyment is also related to reading behaviour and to a lesser extent with reading attainment. However, it is worth pointing out that there is a positive relationship between reading enjoyment and reading attainment in the present study.

In line with Baker and Wigfield (1999), who argued that there is a stronger relationship between reading motivation and reading behaviour than between reading motivation and reading attainment, reading attitudes in the present study also correlated highly with reading behaviour but showed a weaker relationship with reading attainment.

Finally, reading behaviour was also only weakly related to reading attainment. Of the three variables, reading enjoyment was most highly related to reading attainment.

Table 7: Intercorrelations of study variables

	Enjoyment	*Attitudes*	*Behaviour*
Enjoyment	-		
Attitudes	.612**	-	
Behaviour	.598**	.589**	-
Attainment	.412**	.386**	.302**

** $p = 0.01$

The following section will explore the relationships amongst these constructs and their relationship with attainment in more detail using structural equation modelling.

Assessing the models

As outlined earlier, it could be argued that reading enjoyment, attitudes and behaviour are directly and independently related to reading attainment (see **Figure 4**). This model shows a relatively good fit (x^2 = 15.11, df = 10, p = .12; GFI = .89, CFI = .88, RMSEA = .08), indicating that the proposed model fits the data moderately well. Reading enjoyment, reading attitudes and reading behaviour had significant positive paths to reading attainment and the model overall explained 37% of the total variance in reading attainment.

The alternative semi-hierarchical model (see **Figure 5**), in which enjoyment and attitudes preceded reading behaviour, which, in turn, preceded reading attainment, also showed a moderately good fit (x^2 = 12.4, df = 9, p = .19; GFI = .92, CFI = .91, RMSEA = .07). Overall, this model explained 39% of the total variance in reading attainment and showed a better fit than the simple model specified above.

The hierarchical model in which reading enjoyment preceded reading attitudes, which, in turn, preceded reading behaviour, which preceded reading attainment (see **Figure 6**) did not fit the data at all well (x^2 = 58.55, df = 11, p = .00; GFI = .67, CFI = .68, RMSEA = .18]. This model only explained 31% of the total variance in reading attainment.

Overall, this model fit the data less well than the simple model or the semi-hierarchical model. Other hierarchical models where attitudes preceded behaviour, which preceded enjoyment, which preceded attainment or where behaviour preceded attitudes, which preceded enjoyment, which preceded attainment also showed a poor fit with the data.

Figure 4. Hypothesised simple model of the relationship between enjoyment, attitudes, behaviour and attainment as an outcome (N = 4,503)

Reading enjoyment

Reading attitudes

Reading behaviour

Reading attainment

.62

.59

.55

.38

.30

.25

(R² = .37)
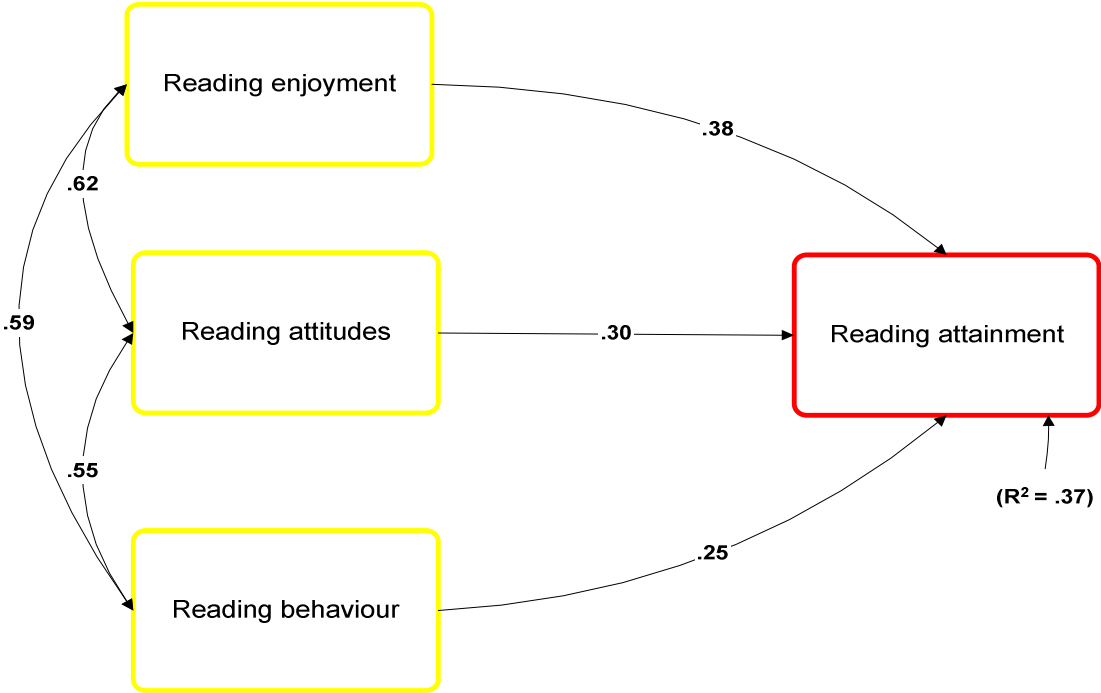
Note: Paths are standardised coefficients. Significant paths are in bold. R² values are indicated in parenthesis

Figure 5. Hypothesised semi-hierarchical model of the relationship between enjoyment, attitudes, behaviour and attainment as an outcome (N = 4,503)

Reading enjoyment

Reading attitudes

Reading behaviour
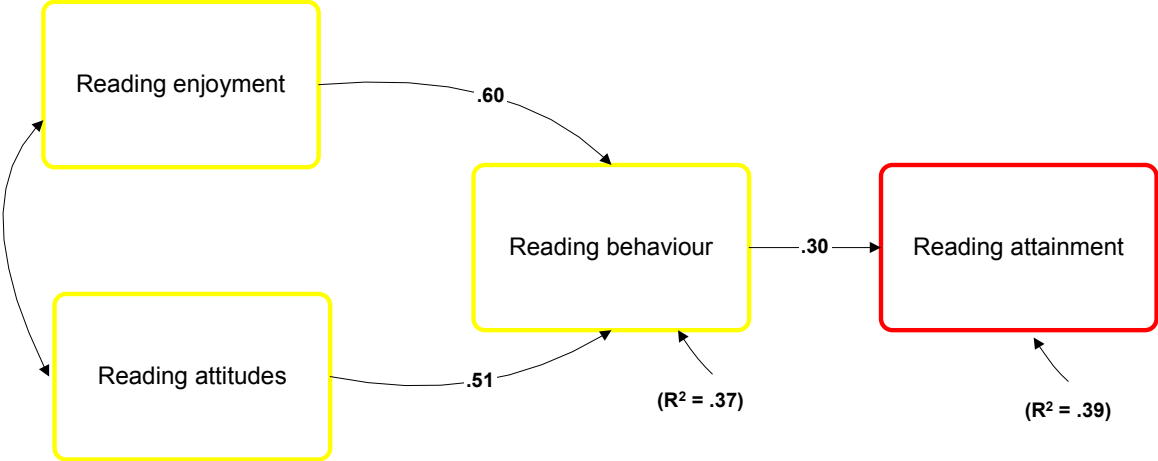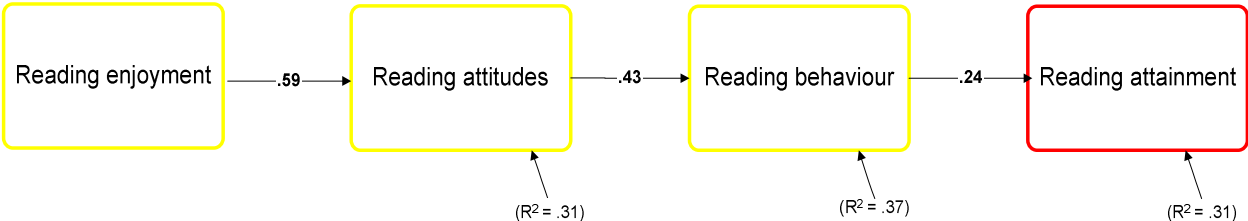
Reading attainment

.60

.51

.30

(R² = .37)

(R² = .39)

Figure 6. Hypothesised hierarchical model of the relationship between enjoyment, attitudes, behaviour and attainment as an outcome (N = 4.503)

Reading enjoyment

Reading attitudes

Reading behaviour

Reading attainment

.59

.43

.24

(R² = .31)

(R² = .37)

(R² = .31)

So, the semi-hierarchical model in **Figure 5** showed the best fit of the data so far. To test whether enjoyment and attitudes also have direct relationships with attainment or whether their relationship is mediated by behaviour, direct paths from attitude and enjoyment to attainment were specified following Baron and Kenny's (1986) suggested four steps.

In Steps 2 and 3, the paths from attitudes to behaviour and from enjoyment to behaviour and the path from behaviour to attainment were tested.

In Step 4, an additional model was tested in which behaviour mediated the relationship of attitudes and enjoyment while the direct paths from enjoyment to attainment and from attitudes to attainment were maintained.

With the addition of behaviour, the direct path from attitude to attainment became non-significant, while the direct path from enjoyment to attainment remained significant, indicating that enjoyment has both direct relationships with attainment as well as an indirect one through behaviour (see **Figure 7**).

Overall, the mediated semi-hierarchical model in **Figure 7** fit the data better than the simple model; (x^2 = 8.3, df = 8, p = .40; GFI = .97, CFI = .96, RMSEA = .05, ECVI = .05). This model explained 41% of the total variance in reading attainment. This mediated model fit the data significantly better than the more parsimonious semi-hierarchical one shown in **Figure 5**[1].

Figure 7. Hypothesised mediated semi-hierarchical model of the relationship between enjoyment, attitudes, behaviour and attainment as an outcome (N = 4,503)
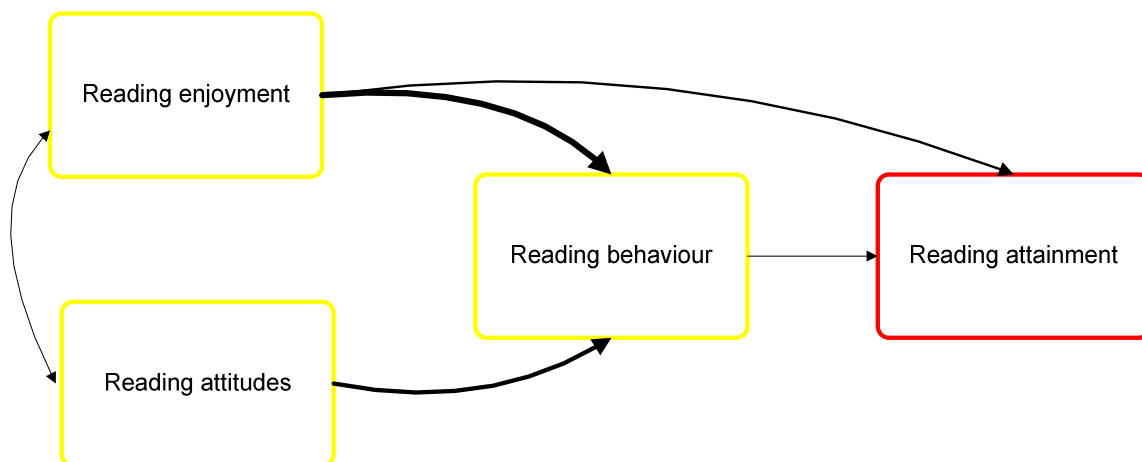

---
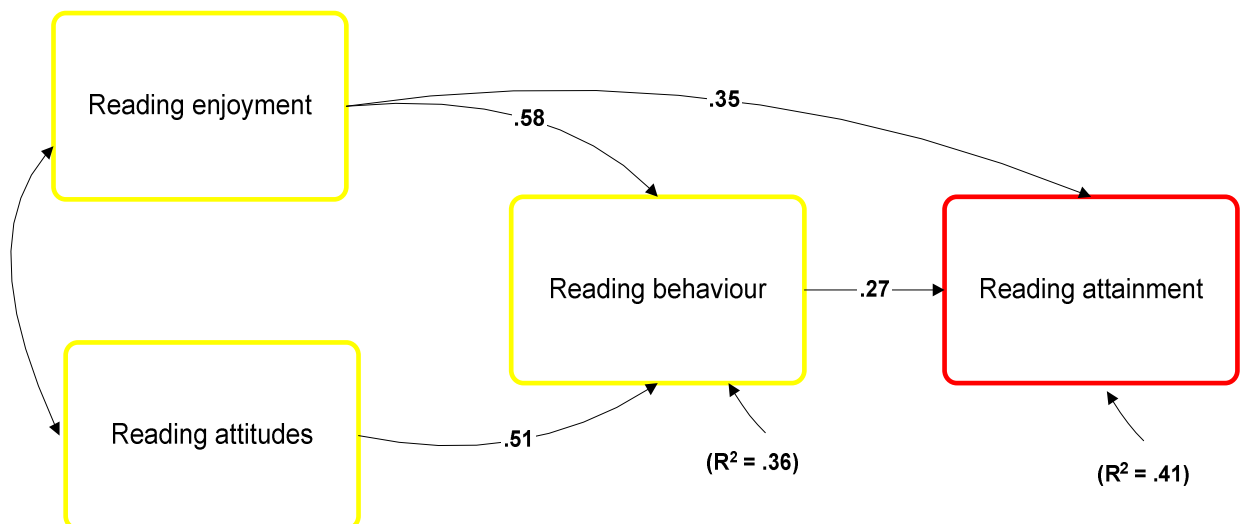
[1] Because of the exploratory nature of the analyses, the sample was also randomly split into two sub-samples to allow for a more robust approach to SE generation as a second step. Following Cudeck and Browne (1983), the final model was first estimated on the first sub-sample (calibration sample, N = 2,252), and the specification with the estimated parameter values was than cross-validated with a second sub-sample (validation sample, N = 2,251). An alternative method is the "two-step" approach, in which the measurement model is tested before a structural equation model is estimated. However, this approach is inappropriate when concepts have fewer than three indicators (cf Hayduk, 1996). Overall, results suggested that the mediated model also provided a good fit to the data of the validation sample.

Conclusion

This has only been a first step in exploring the complex relationships that underpin the interplay between reading enjoyment, attitudes, behaviour and attainment. To our knowledge, this is the first time that the interrelationships between variables often studied in other research have been examined in detail.

Having tested different hypothetical models, the one that best fits the data in the present study (see **Figure A**) is one in which reading attainment is directly related to reading behaviour and reading enjoyment. Reading enjoyment is also indirectly related to reading attainment through reading behaviour, thereby making reading enjoyment into a doubly powerful source. Attitudes towards reading are also related to reading attainment indirectly through their relationship with reading behaviour.

Figure A: Model of relationships in the present study, with bolder paths indicating stronger relationships

These findings underscore the importance of developing effective methods to encourage children and young people to read for pleasure. Not only will our increased understanding of the relationships between reading enjoyment, attitudes, behaviour and attainment better help us to influence education policy and practice, it will also help us to strengthen the work carried out across the National Literacy Trust and will provide a strong evidence base for our projects to promote the importance of reading for pleasure.

However, while being a first step to exploring the interplay between enjoyment, attitudes, behaviour and attainment, several limitations should be noted. The present study was limited by the use of single-item scales to measure behaviour and attainment. Future research should increase the number of items in each scale to enhance their reliability.

The influences within the model are also by no means fully explored. We will need to include other pertinent variables in any future research, such as confidence as a reader, which has been found to be strongly correlated with reading attainment (Sturman and Twist (2004).

Cross-sectional data, such as the ones used in this brief paper, are only of limited use in investigating the ins and outs of complex relationships. While the models show relationships in terms of preceding and succeeding influences, they are only a temporal snapshot and the causal nature of this relationship associating enjoyment, attitudes and behaviour with attainment

cannot be asserted from these data. Causality is no doubt complex in that enjoyment, attitudes, behaviour and attainment reinforce one another and longitudinal data is therefore clearly necessary as a next step to explore possible causal relationships in this already complex interplay of variables.

Exploring the link with regard to mathematics using a large longitudinal US sample, MA & Xu (2004; p. 273) found that

> *Prior achievement significantly predicted later attitude across grades 7-12. Prior attitude, by contrast, did not meaningfully predict later achievement. We conclude that achievement demonstrated causal predominance (priority) over attitude in the entire secondary school...*

If a similar dynamic (whereby changes in attainment drive changes in attitudes as seen in the realm of maths) exists with regards to reading and writing, then the payback of initiatives promoting attitudinal change to affect attainment is perhaps minimal. By contrast, it might be the case that lasting changes in attitudes, behaviour and eventually attainment are only possible because of prior changes in enjoyment, in which case initiatives that strive to increase attainment at the expense of enjoyment are perhaps only of limited value over time.
.
Indeed, according to Sturman and Twist (2004),

> *What does seem clear is that there is no simple formula for measuring the relationship between confidence, enjoyment and attainment, and then using this to improve attainment. The current picture suggests that striving for higher standards of attainment may be associated with reduced enjoyment of learning. However, the converse would imply that attempting to maximise positive attitudes might mean accepting lower standards. Further research is needed to establish the conditions that support both positive attitudes and high attainment, so that higher standards need not be obtained at the expense of poorer attitudes.*

Similarly, it is perhaps much more useful to think of attainment in the long term, or as a child's potential, when considering its relationship with enjoyment. You can learn successfully without enjoying the process, but how long will the motivation to learn last? For children to become independent learners, they need to be motivated and enjoyment is a key motivating factor that may not be needed to pass a particular exam or acquire a skill, but is needed in the long term to create sustainable learning habits.

The next step forward

Building on what we have learned, we wonder whether the following "cycle of positive influence" might be an appropriate way to take current thinking forward.

In the home literacy environment, children will (or will not) take part in storytelling and other language development activities, which we have termed "behaviour". If the experience is a positive one and they are motivated by the activity (through enjoyment or another motivating factor such as an extrinsic reward), they will develop initial positive attitudes. However, these attitudes will need to be positively reinforced (behaviour) in order for these attitudes to remain positive and for the cycle to continue.

We expect there to be different models of positive influence depending on the age and gender of the child. We could also speculate that children who did not grow up in a literacy-rich environment need a significant event (e.g. a book-gifting event, an interesting book, an interesting conversation or a stimulating trip to the library) to kick-start this model by influencing reading enjoyment and attitudes towards reading.

Similarly, it is unclear to what extent the cycle would work without all of its constituent parts. To our mind, behaviour is perhaps the only element that definitely cannot be removed from the cycle of influence. You may not have positive attitudes about reading, but as long as you still do it, you will still do better at it than if you do not do it at all and have positive attitudes.

If that is true then could attitudes and enjoyment be described as "enhancers", enabling you to continue to do it in the long term, while short term gains could be achieved from high frequency of reading, such as knowledge acquisition? These are clearly thoughts that we will need to explore in future research.

References

Anderson, R.C., Wilson, P.T., and Fielding, L.G. (1988). Growth in reading and how children spend their time outside of school. *Reading Research Quarterly*, **23**, 285-303.

Angelos, S. and McGriff, N. (2002). Tracking students' reading progress. *Knowledge Quest*, **30**, 44-46.

Baker, L. and Wigfield, A. (1999). "Dimensions of children's motivation for reading and their relations to reading activity and reading achievement". *Reading Research Quarterly*, **34** (4) 452–76.

Baker, L., Dreher, M.J. and Guthrie, J.T. (2000). *Engaging young readers: Promoting achievement and motivation*. New York: Guilford Publishing.

Baron, R. M., and Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology,* **51**, 1173-1182.

Blunsdon, B., Reed, K., and McNeil, N. (2003). Experiential Learning in Social Science Theory: An investigation of the relationship between student enjoyment and learning. *Journal of Further and Higher Education*, **27**(1), 3-14.

Bollen, K.A. (1989). *Structural Equations with Latent Variables*. New York: Wiley.

Brooks, G., Schagen, I. and Nastat, P. (1997). *Trends in Reading at Eight*. Slough: NFER.

Brown, A. L., Plaincsar, A. S., and Purcell, L. (1986). Poor readers: Teach, don't label. In U. Neisser (Ed.), *The school achievement of minority children: New perspectives* (pp. 105–143). Mahwah, NJ: Lawrence Erlbaum Assoc.

Cipielewski, J., and Stanovich, K. E. (1992). Predicting growth in reading ability from children's exposure to print. *Journal of Experimental Child Psychology*, **54**, 74-89.

Clark, C. and Douglas, J. (2011). *Young people's reading and writing*. London: National Literacy Trust.

Clark, C and Rumbold, K. (2006). *Reading for pleasure: A research overview*. London: National Literacy Trust.

Cohen, P., Cohen, J., Teresi, J., Marchi, M.L. and Velez, C.N. (1990). Problems in the measurement of latent variables in structural equation causal models. *Applied Psychological Measurement*, **14**, 183-196.

Cooter, R. B., and Alexander, J. E. (1984). Interest and attitude: Affective connections for gifted and talented readers. *Reading World*, **24**, (1), 97-102.

Cox, K.E. and Guthrie, J.T. (2001). Motivational and cognitive contributions to students' amount of reading. *Contemporary Educational Psychology*, **26**, 116-131.

Cudeck, F. and Browne, M.W. (1983), Cross validation of covariance structure. *Multivariable Behavior Research*, **18**, 507-534.

Cunningham, A. E. and Stanovich, K. E. (1998). What reading does for the mind. *American Educator*, **22** (1and2), 8-15.

Du Toit, M. and du Toit, S. (2001). *Interactive LISREL: Users' guide*. Chicago: Scientific Software Inc.

Goetz, T., Nathan C., Hall, B., Anne, C., Frenzel, A., and Pekrun, R. (2006). A hierarchical conceptualization of enjoyment in students. *Learning and Instruction*, **16**, 323-338.

Guthrie, J.T. and Alvermann, D. E. (1999). *Engaged Reading: Processes, Practices, and Policy Implications*. New York: Teachers College Press.

Hayduck, L.A. (1996). *LISREL issues, debates and stragegie*s. Baltimore, ML: Johns Hopkins University Press.

Hurd, S., Dixon, M. and Oldham, J. (2006). Are low levels of book spending in primary schools jeopardising the National Literacy Strategy? *The Curriculum Journal.* **17**(1), 73-88.

Jöreskog, K.G. and Sörbom, D. (1996). *LISREL 8: User's reference guide*. Chicago: Scientific Software Inc.

Jöreskog, K.G. and Sörbom, D. (2002). *LISREL 8.52*. Chicago: Scientific Software Inc.

Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. Journal of Educational Psychology, 80, 437-447.

Krashen, S. (1993). *The Power of Reading*. Englewood, Col.: Libraries Unlimited, Inc.

Lumby, J. (2011). Enjoyment and learning: Policy and secondary school learners' experiences in England. *British Educational Research Journal*, **37**, 247-264.

Ma, X. and Xu, J. (2004). Determining the causal ordering between attitudes towards mathematics and achievement in mathematics. *American Journal of Education*, **110**, 256-280.

McKenna, M., and Kear, D. (1990). Measuring attitude toward reading: A new tool for teachers. *The Reading Teacher*, **43**, 626–639.

OECD, (2000): *PISA Programme for International Student Assessment*. New York: Organisation for Economic Cooperation and Development.

OECD (2002). *Reading for change: Performance and engagement across countries. Results from PISA 2000*. New York: Organisation for Economic Cooperation and Development.

OECD (2010). *PISA 2009 Results: Learning to Learn – Student Engagement, Strategies and Practices (Volume III)* http://dx.doi.org/10.1787/9789264083943-en.

Ofsted. (2004). *Reading for Purpose and Pleasure: an evaluation of the teaching of reading in primary schools*. London. HMI 2393.

Petscher, Y. (2010). A meta-analysis of the relationship between student attitudes towards reading and achievement in reading. *Journal of Research in Reading*, **33**, 335-355.

Rieber, L.P., and Noah, D. (2008). Games, simulations, and visual metaphors in education: Antagonism between enjoyment and learning. *Educational Media International*, **45**(2), 77-92.

Rockoff, J. E. (2004). The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data. *American Economic Review*, **94**(2): 247–252.

Shernoff, D.J., Csikszentmihalyi, M., Schneider, B., and Shernoff, E.S. (2003). Student

engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly*, **18**(2), 158-176.

Skinner, E.A., T.A. Kindermann and C. Furrer (2009). A motivational perspective on engagement and disaffection: *Conceptualization* and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measuremen*t, **69**, 493-525.

Stanovich, K.E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, **21**, 360-407.

Sturman, L. and Twist, E. (2004). Attitudes and Attainment: a trade-off? In NFER, *Annual Report 2004/05*. National Foundation for Educational Research (NFER), accessed at www.nfer.ac.uk/publications/pdfs/ar0405/05sturman.pdf.

Taylor, B.M., Frye, B.J. and Maruyama, G.M. (1990). Time Spent Reading and Reading Growth. *American Educational Research Journal*, **27**, 351-362.

Twist, L., Schagen, I. and Hodgson, C. (2003 and 2007). *Readers and Reading: the national report for England.* Slough: NfER.

Whetton, C., Ruddock, G. and Twist, L. (2007). *Standards in English primary education: the international evidence. The Primary Review.* Cambridge: University of Cambridge Faculty of Education.