Reading habits and emotional vocabulary in adolescents

Alexandra S. Dylman, Emilia Blomqvist & Marie-France Champoux-Larsson

To cite this article: Alexandra S. Dylman, Emilia Blomqvist & Marie-France Champoux-Larsson (2020): Reading habits and emotional vocabulary in adolescents, Educational Psychology, DOI: 10.1080/01443410.2020.1732874

To link to this article: https://doi.org/10.1080/01443410.2020.1732874
ABSTRACT

Previous research has found that reading increases overall vocabulary size, and that reading fiction, specifically, is associated with higher levels of empathy and better perspective-taking skills. The current study investigated a potential link between reading habits and emotional vocabulary in particular, to assess whether the link between reading and empathy could be specifically related to emotion words. A total of 415 Swedish secondary and upper secondary school students were asked to generate words in various emotional categories, and to report their reading habits. Generally, females produced more words than males. For all participants, the largest amount of words was produced in the neutral, followed by positive, then the negative category. Crucially, the frequent readers produced more emotional words than the less frequent readers, suggesting that reading habits are associated with emotional vocabulary. We discuss the implications of these findings for the understanding of the link between reading and emotional competence.

The importance of reading for vocabulary development has long been known (e.g. Cunningham & Stanovich, 1991; Marulis & Neuman, 2010; Mol, Bus, & de Jong, 2009; Stanovich & Cunningham, 1992). Likewise, vocabulary teaching has been shown successful as a method for aiding reading development in general, and in particular for weak readers and children at risk of reading difficulties (e.g. Becker, 1977; Cunningham & Stanovich, 1998; Storch & Whitehurst, 2002). Studies linking reading habits to literary skills (e.g. Anderson, Wilson, & Fielding, 1988), cognitive abilities (e.g. Kolinsky & Morais, 1999; Morais & Kolinsky, 2005), and vocabulary (e.g. Cunningham & Stanovich, 1998; Merga, 2017; Nagy, Anderson, & Herman, 1987) are plentiful, but recently, the links between reading habits and emotional vocabulary (as well as other aspects of emotional competence) have started to attract attention. For example, reading fiction novels has shown to be associated with higher levels of empathy (e.g. Bal

CONTACT
Alexander S. Dylman asdylman@gmail.com Department of Special Education, Stockholm University, Stockholm, Sweden

Supplemental data for this article can be accessed here.

© 2020 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group. This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.
& Veltkamp, 2013; Koopman, 2016; Kuzmičová, Mangen, Støle, & Begnum, 2017; Mar, Oatley, Hirsh, de la Paz, & Peterson, 2006), and perspective-taking abilities such as theory of mind (Kidd & Castano, 2013; Mar, Tackett, & Moore, 2010). Furthermore, emotion word comprehension has been found to predict empathy levels in Chinese children (Li & Yu, 2015).

These findings are consistent with Conceptual Act Theory (e.g. Barrett, 2014; Lindquist, Barrett, Bliss-Moreau, & Russell, 2006; Lindquist, Gendron, & Satpute, 2016; Lindquist, MacCormack, & Shablack, 2015) which views emotions as a construction of various components and highlights particularly the role of language in creating the experience (and perception) of emotions. According to this notion, the availability of the linguistic concepts of certain emotions helps guide the experience of those emotions and may elucidate more nuanced and intricate emotions from a more inexplicit general state of emotional arousal. This can increase self-awareness and understanding, which, in turn, leads to better emotion regulation (e.g. Denham, 1986; Ornaghi, Brazzelli, Grazzani, Agliati, & Lucarelli, 2017). This is, indeed, what Kumschick et al. (2014) found after their literature-based intervention READING and FEELING. Following an 8-week programme where a group of 7- to 9-year-old children read a children’s book with emotional content and partook in discussions regarding the content of the book whilst focussing on various emotional themes, Kumschick et al. (2014) found increased emotional vocabulary, as well as other measures of emotional competence (e.g. explicit emotional knowledge and recognition of masked feelings).

Thus, it seems likely that frequent readers might increase not only their overall vocabulary but particularly their vocabulary of emotion (and emotion-laden) words. This finding may have important implications for the understanding of emotion concepts, which may aid awareness of one’s own experiences of emotion. Emotion awareness, in turn, can lead to enhanced, or more adaptive emotion regulation (e.g. Neumann, Malec, & Hammond, 2017a, 2017b; Wood & Doughty, 2013), which may have important implications for the education domain. Higher levels of emotion awareness or emotion knowledge has consistently been linked with pro-social behaviour and social competence (as well as peer acceptance and popularity) in children (e.g. Denham, 1986; Denham, Bassett, Brown, Way, & Steed, 2015; Denham et al., 2003; Schultz, Izard, Ackerman, & Youngstrom, 2001; Sette, Spinrad, & Baumgartner, 2017; Smith, 2001; Trentacosta & Fine, 2010), leading Sette et al. (2017) most recently to argue that ‘teacher training should focus on promoting children’s emotion knowledge to create a classroom atmosphere characterized by positive social behaviours and harmonious peer relationships across the preschool years’ (Sette et al., 2017, p. 532). While this general finding could apply to all ages, it may be particularly useful for adolescents, who have typically achieved sufficient reading abilities to be frequent and interested readers, but who tend to experience emotional turbulence, and for whom increased emotion regulation skills may be of particular benefit. The benefits of emotion knowledge in adolescents have been found for a number of aspects ranging from enhanced academic achievement (e.g. Izard et al., 2001) to reduced levels of risky behaviour such as drug abuse, a higher number sexual partners, and issues with social adaptation (e.g. Hessler & Katz, 2010).
An important aspect to take into consideration is the cultural impact of gender stereotypes and discourse which may be associated with gender differences in vocabulary, and emotional vocabulary and the use of emotion words. For example, several studies have found a female advantage in vocabulary size (e.g. Bornstein & Haynes, 1998; Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991; Mylonas, Paramei, & MacDonald, 2014), and women are often reported as using a more emotional language than men (van Boven & Robinson, 2012), an effect which has also been found with children (Tenenbaum, Ford, & Alkhedairy, 2011). Potential links between reading and emotional competence might, therefore, be of particular importance for boys, who may benefit even more from activities that can lead to an increase their emotional vocabulary.

Thus, the current study aimed to investigate the link between reading habits and emotional vocabulary by asking secondary (year 6 through 9 of compulsory education; approx. 12–16 years) and upper secondary school (year 10 through 12 of education; approx. 16–19 years) students to freely produce words in several emotion categories, and connecting this to the amount of reading they engage in on a weekly basis. The purpose of this study was two-fold. Firstly, we wanted to examine whether reading habits, in general, is associated with the amount of emotion words that the reader possesses in their vocabulary. This could potentially provide the missing link between the research area investigating reading and vocabulary size, and the one investigating emotion regulation and emotional competence. While there is extensive research in both of these areas, the research specifically looking at reading and emotional vocabulary is considerably sparser.

The second purpose of the current study was of a more practical nature, namely to collect a corpus of Swedish words of emotional (and emotionally neutral) content, generated by Swedish adolescents, that can serve as a word bank from which stimulus materials can be selected to be used in future experimental studies with participants of this age group. (These will not be presented in the current paper. However, lists of the most common words produced in each category are available as Supplementary Online Materials.) In order to maximise the ecological validity of this study, we purposefully avoided applying rigorous inclusion criteria or attempting to purposefully match or select participants with certain reading habits, as we wanted the sample to reflect the natural reading habits of Swedish adolescents.

To this end, we employed the method used by Neshat-Doost, Moradi, Taghavi, Yule, and Dalgleish (1999) who asked primary and secondary school students in the UK to produce single words in eight emotional and two neutral categories. They found that the older children produced more words than the younger children and that girls generally produced more words than boys. The former result is unsurprising and follows natural language development (e.g. Segbers & Schroeder, 2017). The latter result is consistent with studies that have found that women tend to use more emotion words than men (e.g. Goldshmidt & Weller, 2000; Vigil, 2009). Following these results, we expect to replicate the same overall gender difference. Additionally, and more importantly for the current study, we wish to examine whether more frequent readers will have a larger vocabulary of emotion words.
Method

Participants

The participants were recruited from five secondary schools (years 6 through 9 of compulsory education), and five upper secondary schools (years 10 through 12 of education) in Sweden. The younger (secondary school) participants were tested after receiving informed consent from both their parents/legal guardians and themselves. The older (upper secondary school) participants were old enough that their own informed consent sufficed. Data from 465 participants (secondary = 232; upper secondary = 233) were initially collected, but data from 31 participants from secondary school (out of which 19 produced zero words in more than 3 out of 10 categories which questioned whether the participants had followed the instructions fully, and 10 failed to report sufficient background information regarding reading and gender), and 19 from upper secondary school (out of which 5 produced zero words in more than 3 out of 10 categories, and 14 failed to report sufficient background information regarding reading and/or gender) were excluded from further analyses. This left 201 (107 females, 82 males, 12 either identified as other or refrained from providing information regarding their gender; mean age = 14 years, SD = 1.1) from secondary school, and 214 from upper secondary school (129 females, 79 males, and 6 refrained from responding regarding gender; mean age = 17 years, SD = 0.97).

Stimulus materials

The original questionnaire used by Neshat-Doost et al. (1999) was translated (and back-translated) from English to Swedish (see Neshat-Doost et al. 1999, p. 440, for the original English version with all 10 questions) to be used in the current study. The questionnaire consisted of 10 questions, asking participants to generate as many words as they could think of in a number of categories: two neutral (e.g. 'Write down as many names of animals that come to mind'), three positive (e.g. 'List as many things as possible that make you happy'), and five negative (e.g. 'List as many things as you can that make someone feel sad'). For each of the 10-word generation questions, there were 20 numbered spaces available into which the participants could type words. The order of the questions was the same as the original Neshat-Doost et al. questionnaire, where the first questions and the last question were neutral, and the emotional categories in between alternated between positive and negative emotions. The questions, as well as a number of background questions including age, gender, and reading habits, were presented digitally. The questions concerning reading habits were divided into time (in hours) spent in a week reading school work and leisure reading (during the spare time). The leisure reading was further divided into three questions, specifying the type of material read (books, newspapers/magazines, and blogs).

Procedure

Participants responded to the questionnaire in their classroom using computers or tablets. The questionnaire was administered to groups of participants, but each
participant responded individually. The researcher, with the assistance of the class teacher, gave instructions and answered queries. For each question in the questionnaire, the researcher read out the instruction, and the participants were asked to write down as many words as possible (up to a maximum of 20) in 5 min. This procedure replicated that of Neshat-Doost et al.’s (1999) study and was deemed appropriate in order to find a balance between attempting to answer the research questions and keeping the study as brief as possible. While additional words/lines or categories may have been interesting, it would have prolonged the study and risked tiring the participants.

The participants were explicitly told that there were no right or wrong answers. The questionnaire was presented, and all data were collected, digitally using Qualtrics. All Swedish ethical codes, laws, regulations, rules, and guidelines for research involving humans were followed.

**Results**

**Reading habits**

The responses for the four reading habit questions were collated to calculate a total number of hours reported spent on reading per week for each participant. As there may exist developmental and educational aspects which are likely to affect the number of hours spent on reading (e.g. older children/adolescents are feasibly expected to read more text than younger children, as their level of education advances, as does their level of maturity which will affect the type of literature they chose to read, and so on), the reading habits were collated separately for the secondary and upper secondary school students. Thus, for each group, the median number of hours spent reading was calculated (see Table 1 for descriptive statistics on reading habits). Based on these medians, we conducted a median split where the participants from each group were divided into a low reading habits group and a high reading habits group (see Table 2 for descriptive statistics based on the median split of reading habits).

For the secondary school students, there were 95 participants (males = 42; females = 53) in the low reading habits group (criteria: ≤6 h total reading per week; *M* = 2.8 h, *SD* = 2.1 h) and 93 participants (males = 40; females = 53) in the high reading habits group (criteria: ≥6.1 h total reading per week; *M* = 17.7 h, *SD* = 13.3 h). The gender distribution between the high and low reading habits groups was equal, χ²(1, *N* = 188) = 0.03, *p* = .868. Furthermore, independent samples t-tests found no statistically significant differences between male and female participants in terms of number of hours spent reading on their spare time (females: *M* = 3.2 h, *SD* = 3.9 h, males: *M* = 3.7 h, *SD* = 5.9 h, *t*(186) = 0.62, *p* = .534), in school (females: *M* = 6.9 h, *SD* = 8.4 h, males: *M* = 5.4 h, *SD* = 9.5 h, *t*(186) = 0.81, *p* = .419), and overall (*M* = 10.1 h, *SD* = 11.0 h, *t*(186) = 0.57, *p* = .569).

### Table 1. Medians and range for reading habits (measured in hours per week) for each group.

<table>
<thead>
<tr>
<th></th>
<th>Secondary school</th>
<th>Upper secondary school</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median (range)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Spare time reading</td>
<td>2 (0–44)</td>
<td>3.4 (4.9)</td>
</tr>
<tr>
<td>School-related reading</td>
<td>5 (0–70)</td>
<td>8 (11.1)</td>
</tr>
<tr>
<td>Total reading</td>
<td>6 (0–78)</td>
<td>10 (12.0)</td>
</tr>
</tbody>
</table>
males: $M = 9.6$ h, $SD = 14.3$ h, $t(156) = 1.50$, $p = .136$) or total number of hours spent in total per week (females: $M = 9.0$ h, $SD = 9.2$ h, males: $M = 11.8$ h, $SD = 15.1$ h, $t(186) = 1.55$, $p = .124$). These t-tests failed to capture any gender differences in terms of number of hours spent reading in each subgroup. Any potential differences in terms of weekly reading time between males and females were, thus, not present in each subgroup in this sample.

For the upper secondary school students, there were 104 participants (males = 46; females = 58) in the low reading habits group (criteria: $\leq 8$ h total reading per week; $M = 4.3$ h, $SD = 2.7$ h) and 104 participants (males = 33; females = 71) in the high reading habits group (criteria: $\geq 8.1$ h total reading per week: $M = 18.4$ h, $SD = 11.3$ h). While there were somewhat more females than males overall, the gender distribution between the high and low reading habits groups was equal, $\chi^2(1, N = 208) = 3.45$, $p = .063$. Independent samples t-tests found no differences between males and females in the upper secondary school group in terms of number of hours spent reading on their spare time (females: $M = 5.0$ h, $SD = 7.0$ h, males: $M = 4.5$ h, $SD = 7.4$ h, $t(206) = 0.52$, $p = .606$), in school (females: $M = 7.9$ h, $SD = 7.2$ h, males: $M = 7.0$ h, $SD = 8.0$ h, $t(179) = 0.81$, $p = .419$) or total number of hours spent in total per week (females: $M = 12.2$ h, $SD = 10.7$ h, males: $M = 10.1$ h, $SD = 11.1$ h, $t(206) = 1.33$, $p = .185$).

### Word generation

The number of words in each of the 10 categories for each participant was counted, and all responses were modified using the same process as Neshat-Doost et al. (1999). All steps in the process, taken directly from Neshat-Doost et al. (1999, p. 436) are reproduced below.

1. All plural words were changed to the singular form (e.g. ‘dogs’ changed to ‘dog’).
2. One form was chosen to represent words which also appeared in abbreviated form (e.g. ‘T.V.’ and ‘television’).
3. Gerunds and their verbs (e.g. playing and play) were written in verb form, provided that the meaning of both words did not differ (e.g. beating and beat).
4. Where possible, the phrases or sentences written by subjects were changed to a single word on the unanimous agreement of the authors, otherwise, these phrases were omitted.
5. Adjectives with different suffixes (e.g. ‘-ing’, ‘-ful’, ‘-ed’, etc.) were written in a single form, provided that their meaning was not changed.

The final step of data processing from Neshat-Doost et al. whereby they omitted all words which occurred only once, was not replicated in the current study. This step
was omitted in order to gain a more nuanced insight into the vocabulary size of words associated with the emotion categories. Removing all (real and correct) words which only occurred once might obscure potential effects by only selecting the more frequently produced words. Words which were obviously incorrect (such as ‘hafglr’) were omitted. However, words which were real words but had an ambiguous connection to the emotional category in which it was produced, were not deleted. This decision was made prior to data treatment and analysis because of the element of subjectivity in this matter. To clarify, a word which may belong to one emotional category for one person, may be more strongly associated with another emotional category for another person. In order to avoid imprinting our own subjective opinions of category membership onto the data, we chose to let the participants decide which words they associated with the various categories. This also aided the ecological validity of the data.

This resulted in a total of 49,366 words produced, on average 118.1 words per participant ($SD = 36.5$) across the 10 questions. The younger group of participants (upper comprehensive school) produced 22,066 words ($M = 108.2, SD = 35.5$), and the older group of participants (upper secondary school) produced 27,300 words ($M = 127.6, SD = 34.9$). Following this, the mean number of words per participant for the questions in each of the three emotional categories (negative, neutral and positive) were calculated in order to correct for the varying number of questions per emotional category, thus making the three categories comparable (see Table 3 for descriptive statistics). The most frequent words in each category are presented as Supplementary Online Materials.

The data were analysed separately for the secondary and the upper secondary school students. The data were analysed using a $3 \times 2 \times 2$ repeated measures ANOVA with the factors emotion (negative, neutral, positive), gender (male, female) and reading habits (high, low) with the mean number of words in each category as the dependent variable. For the secondary school students, there was a main effect of emotion, $F(2, 368) = 721.5, p < .001, \eta^2_p = 0.8$; participants produced significantly more words in the neutral ($M = 18.2$) than the positive ($M = 10.4$) category ($p < .001$), and more words in the positive than the negative ($M = 8.3$) category ($p < .001$). A main effect of gender was also found, $F(1, 184) = 15.7, p < .001, \eta^2_p = 0.08$; females produced...
significantly more words than males (13.2 vs. 11.4 words, \( p < .001 \)). There was also a main effect of reading habits, \( F(1, 184) = 10.9, \ p = .001, \eta_p^2 = 0.06 \); the high reading habits group produced more words than the low reading habits group (13.0 vs. 11.6 words, \( p = .001 \)). Further, there was a significant emotion by gender interaction, \( F(2, 368) = 3.9, \ p = .021, \eta_p^2 = 0.02 \), showing a somewhat larger gender difference for the emotional categories (negative: females = 9.5, males = 7.0, \( p < .001 \); positive: females = 11.3, males = 9.6, \( p = .005 \)), than the neutral category (females = 18.7, males = 17.7, \( p = .012 \)). More importantly, there was a significant interaction between emotion and reading habits, \( F(2, 368) = 3.59, \ p = .029, \eta_p^2 = 0.02 \); the high reading habits group produced more words than the low reading habits group in both the positive (11.3 vs. 9.5, \( p = .002 \)), and the negative (9.2 vs. 7.3, \( p = .003 \)), categories, but there was no difference between the two reading habits groups for the production of neutral words (18.5 vs. 17.9; \( p = .129 \)). There was no gender by reading habits or three-way interaction (both \( F < 1 \)).

For the upper secondary school students, there was a main effect of emotion, \( F(2, 408) = 485.4, \ p < .001, \eta_p^2 = 0.70 \); participants produced significantly more words in the neutral (18.65) than the positive (12.63) category (\( p < .001 \), and more words in the positive than the negative (10.21) category (\( p < .001 \)). There was also a main effect of gender, \( F(1, 204) = 11.9, \ p = .001, \eta_p^2 = 0.06 \); females (14.5) produced more words than males (13.1). A main effect of reading habit was also found, \( F(1, 204) = 11.6, \ p = .001, \eta_p^2 = 0.05 \); the high reading habits group (14.5) produced more words than the low reading habits group (13.1). An emotion by gender interaction was found, \( F(2, 408) = 3.6, \ p = .029, \eta_p^2 = 0.02 \); simple main effects showed that females produced more words than males in both the negative (11.2 vs. 9.2 words, \( p = .002 \)) and positive (13.5 vs. 11.8 words, \( p = .002 \)) category, but there was no gender difference for the neutral words (19.0 vs. 18.4 words, \( p = .090 \)). The emotion by reading habits interaction was also significant, \( F(2, 408) = 4.47, \ p = .012, \eta_p^2 = 0.02 \). Simple main effects found that the group with high reading habits produced significantly more words in both the negative (11.2 vs. 9.2 words, \( p = .002 \)), and the positive (13.5 vs. 11.7 words, \( p = .001 \)) categories, but did not differ in the number of neutral words they produced (18.9 vs. 18.4 words, \( p = .194 \)).

**Discussion**

The current study investigated the link between reading habits and emotional vocabulary by asking Swedish adolescents to produce words in emotional (and neutral) categories and collecting information regarding their reading habits. A similar pattern of results was found for both the younger (secondary school students, mean age = 14 years) and the older (upper secondary school students, mean age = 17 years) group of participants. Firstly, participants generally produced more words in the neutral, followed by the positive, followed by the negative category. Secondly, females generally produced more words than males. This replicates previous studies (e.g. Goldshmidt & Weller, 2000; Vigil, 2009), including Neshat-Doost et al. (1999) who used the same methodology to measure the number of words in emotional categories produced by children in the UK. Interestingly, for the older participants (upper secondary
school students), we found that females produced significantly more words in the positive and the negative categories, but no such difference was found for the neutral category. This is likely due to a ceiling effect, whereby all groups managed to generate a high number of words for the neutral category. A similar pattern was found for the younger students, but while the gender difference was smaller for the neutral words than for the emotional categories, this difference was significant in the younger group of participants. This strengthens the notion that the lack of gender difference for the neutral words for the older adolescents was due to a ceiling effect, as the older participants have acquired a larger vocabulary than the younger group of participants, due to normal language development and education (e.g. Segbers & Schroeder, 2017). Finally, we found that participants who reported higher reading habits generally produced more words than participants who reported lower reading habits, which also replicates previous studies showing that reading has a beneficial effect on vocabulary size (e.g. Cunningham & Stanovich, 1998; Merga, 2017; Nagy et al., 1987).

Crucially, the current study found that participants with frequent, or high, reading habits produced significantly more words in both the negative and the positive category, compared to the group of participants with low reading habits. No such difference was found for the neutral category. While the latter result is incongruent with previous findings showing that reading increases overall vocabulary, it is, again, most likely a consequence of the methodological aspect of limiting the number of words to be produced per category to 20, thereby resulting in a ceiling effect. Therefore, while we cannot be certain based on the current data, it is highly likely that a more liberal measure of general vocabulary size would find differences between the high and the low reading groups for the number of words produced in the neutral category. However, we would like to stress that the current methodology was chosen for two reasons, namely, to investigate specifically emotional vocabulary (for which no ceiling effect was found), and to collect a list of the most frequent words that Swedish adolescents associate with the different emotional (and neutral) categories. The chosen methodology was therefore both suitable and highly informative. More importantly, we found a clear link between reading habits and the number of emotion words (both positive and negative) in that the more frequent readers produced significantly more emotion words than the less frequent readers. This suggests that reading habits (i.e. more reading) is associated with a larger vocabulary of emotion words.

We purposefully avoided rigorous matching of our participants or stringent criteria for measuring reading habits as we wanted to maximise the ecological validity and investigate adolescents’ reading habits and emotional vocabulary as they occur in real life. While there may be methodological limitations, the advantage remains that even under these circumstances we have managed to find clear connections between self-reported reading habits and the number of emotion words produced, for both groups of participants. The fact that we could find such differences despite the methodological limitations that we faced strengthens the notion that reading is associated with a larger emotional vocabulary. As mentioned in the Introduction, numerous studies have found clear connections between emotional vocabulary, emotional awareness, and emotion regulation, particularly adaptive emotion regulation (e.g. Denham, 1986; Kumschick et al., 2014; Neumann et al., 2017a, 2017b; Ornaghi et al., 2017; Wood &
Doughty, 2013), and that higher emotional competence can lead to higher levels of social competence, peer acceptance and even academic success for children and adolescents (e.g. Denham, 1986, 2007; Denham et al., 2003, 2015; Halberstadt, Denham, & Dunsmore, 2001; Schultz et al., 2001; Sette et al., 2017; Smith, 2001; Trentacosta & Fine, 2010). While these aspects fall outside the scope of this current paper, it is worth mentioning them in order to put the results from the current study into a broader theoretical context. The findings from the current study may act to link the existing knowledge of reading habits and vocabulary size in general on the one hand, and emotion regulation and emotional competence on the other hand, by specifically investigating the link between reading habits and emotional vocabulary.

Although more research is needed to determine the relationship between reading and emotional vocabulary, the findings from this study can potentially have important implications for the understanding of emotional competence. In the long run, this might lead to research providing methods for increasing emotion vocabulary, and thereby emotional competence and emotion regulation. This can, in turn, have important implications for education (not least special education), with schools and teachers encouraging children and adolescents to read more, or policymakers embracing the development of teaching methods which aim to increase emotional vocabulary. It can even be useful in clinical settings, offering clinical psychologists and counsellors a means of enhancing emotional competence and emotion regulation in adolescents with emotional issues or difficulties by incorporating reading exercises as a means of increasing emotional vocabulary.

The current study found that females produced more emotion words than boys. This was true despite the equal gender distributions between the low and the high reading habits groups, and equal average number of hours spent reading per week between males and females in this study. However, there are studies which have found that girls tend to read more than boys, and that boys generally tend to have more negative attitudes towards reading (e.g. Clark & Foster, 2005; Kush & Watkins, 1996; Logan & Johnston, 2009). This may be connected to the finding that girls generally tend to express their emotions more than boys (e.g. Goldshmidt & Weller, 2000). This notion would be consistent with the findings from the current study: if girls tend to be more positive about reading, in turn leading them to read more than boys, they might increase their emotional vocabulary, which will benefit their emotion awareness and competence. Certainly, other factors are likely to contribute to why girls and women are more emotionally expressive than boys and men, including social norms, socioeconomic status, cultural aspects and so forth (e.g. Davis, 2007; Vigil, 2009), but future research should investigate more closely the effectiveness of an implemented reading intervention on increasing emotional vocabulary in general, and perhaps specifically for adolescent boys, who may benefit the most from enhanced emotion regulation and emotional competence.

In order to fully understand the connection between reading and emotional vocabulary, future research should address several questions. Firstly, it is paramount to establish potential cause and effect connections in order to find out what lies behind the association between reading and emotional vocabulary. The current study cannot establish whether the observed link between reading habits and emotional vocabulary
is causal. Is it, indeed, the case that reading causes a larger emotional vocabulary, or is it the case that children with larger emotional vocabulary are intrinsically more interested in reading, perhaps precisely due to a larger emotional vocabulary or emotional competence making them more likely to maximise their reading experience? Perhaps the two even affect each other bi-directionally. Investigating and potentially establishing cause and effect is therefore vital.

If one does entertain the notion that reading leads to an increased emotional vocabulary, future studies may want to more closely investigate both the quantity and the quality of reading needed. For example, exactly what type of reading, or books, are optimal for increasing emotional vocabulary, and is there a minimum amount of time spent on reading to show beneficial effects on emotional vocabulary?

Future research may also investigate modularity in language exposure by comparing printed books with audiobooks, which is increasingly popular. Likewise, reading other types of printed text (such as forum discussions or texts on social media), or listening to written information (such as vlogs or podcasts) may be explored in future studies. While these various methods of acquiring text or information fall outside the scope of the current paper, we acknowledge that reading habits in general, and in particular for the adolescent population, are not limited to the classical ways of reading, but are transforming to include these additional forms of input. Nevertheless, the current study offers an insight into the connection between reading habits and emotional vocabulary in adolescents.

**Acknowledgements**

We thank Emma Hermansson for assisting with data collection.

**Disclosure statement**

No potential conflict of interest was reported by the author(s).

**ORCID**

Alexandra S. Dylman https://orcid.org/0000-0002-5545-1058

**References**


Kolinsky, R., & Morais, J. (1999). We all are Rembrandt experts—or, How task dissociations in school learning effects support the discontinuity hypothesis. *Behavioral and Brain Sciences, 22*, 381–382. doi:10.1017/S0140525X99392025


