

The (all)determining Role of the Silent Educator

*A Thesis on the Multidimensional Influence of
Parental Educational Involvement*

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Abstract

This study focuses on the relationship between parental socio-economic status, parental educational involvement, and educational attainment. In order to gain more insight into this relationship, I investigated whether parental educational involvement serves as a mediating factor in the relationship between parental socio-economic status and educational attainment of the child. In doing so, I differentiated between parental literary involvement and parental cultural involvement as two dimensions of parental educational involvement. In addition, I investigated whether the relationship between both dimensions of parental educational involvement and educational attainment of the child was affected by parental emotional involvement. Based on relevant theoretical frameworks and scientific studies, expected outcomes were formulated into a total of five hypotheses. These were tested using linear regression analyses based on the Family Survey Dutch population (Meuleman, Tolsma & Kraaykamp, 2017/2018). The analyses revealed there to be significant correlations between parental socio-economic status and educational attainment, in which both dimensions of parental educational involvement served as a mediating factor. Parental emotional involvement on the other hand did not come up as a significant moderator. In conclusion, it can be stated that parental socio-economic status does seem to determine the educational attainment of a child. Additionally, parental literary involvement and parental cultural involvement offer an explanation for this mechanism while parental emotional involvement does not play a role here.

Keywords: *Parental Socio-Economic Status; Educational Attainment; Parental Educational Involvement; Cultural Capital; Parental Emotional Involvement*

1. Introduction

When 650 Dutch middle school teachers were asked for their opinions on the inequalities of opportunity within the educational system, it was found that only 4% observes no inequalities in their classroom at all (Van der Pers et al., 2022). The socio-economic background of the student was identified as the most prominent cause of these inequalities, and only 20% of the teachers felt like they can directly reduce these inequalities within the educational sphere. Additionally, 75% of the teachers felt like they were in need of more knowledge on the topic of inequalities of opportunity, within all different sectors of education and levels of experience. Van der Pers et al. (2022) conclude the study by stating that the teachers acknowledge the issue of educational inequalities as well as a current lack of conversation on this issue and place urgency at the importance of more knowledge on the topic.

Inequalities of opportunity within education indicate unequal chances for students to learn and develop themselves because of the environment they live in, their background or social exclusion. In other words, it means that students with comparable talents and capacities do not get to attain the same results because of a range of influential factors that are determined by the cradle they were born in. Research conducted by the Dutch Central Planning bureau shows that inequalities in educational attainment between children in the Netherlands already start at an early age (2020). These inequalities are inextricably related to background characteristics on which the child has no influence, such as parental income, parental educational level, parental migration background, and the gender of the child. When zooming into the parental socio-economic status, it was found that there are measurable differences in educational performances between children whose parents have a higher income and educational level as opposed to children whose parents have a lower income and educational level. Children whose parents have a lower socio-economic status perform worse in mathematics and linguistics than children whose parents have a higher socio-economic status. These differences were already visible when the children did not yet attend primary school, and did not disappear when the children went to primary school. The Dutch Central Planning Bureau expresses their worry on these findings, as an early educational disadvantage can have long term consequences. Failing to invest in a child's future by under stimulating their educational development can lead to that child's potential being incompletely realized.

Earlier studies show that the Dutch educational system has characteristics that could potentially contribute to the persistent inequalities based on parental background (Badou & Day, 2021). Dutch students get assigned to an educational level when they are eleven years old. Compared to other countries, this crucial moment of choice takes place at an early age in the Netherlands given the fact that this advice strongly influences the entire educational career which is about to follow (Verstraten & Zumbuehl, 2021). This also means that students do not have much time to prove and develop themselves as well as to break free from their cultural, social and economic background. If the age at which the students get their advice would be higher, the strong correlation between parental background and educational attainment could possibly be reduced (Van Elk et al., 2011). The Dutch educational system

thus does not comply with the ideal of full equality of opportunities for every child, which makes it a relevant context for this study. That brings us to the first Research Question, in which the relationship between parental socio-economic status and educational involvement will be tested within the context of this study.

Research Question 1. *“To what extent does the parental socio-economic status influence the educational attainment of the child?”*

One influential parental characteristic that has been a topic of interest within educational, pedagogical and sociological literature is parental educational involvement (Boonk et al., 2018). Cairney (1992) describes parents as silent partners of teachers. It is undeniable that parents play a vital role in their children's education. Parents listen, prompt, share, ask and answer questions, make meaning and support their children. The ultimate focus point of this study will be the role of parents as these so-called silent educators. The concept of parental educational involvement is anything but new within the educational sciences, as Gordon (1979) and Henderson (1987) already included it in their research on educational sociology decades ago. Parental educational involvement is a multilayered concept that includes all manners in which parents behave to promote and enhance the educational attainment of the child (Boyle & Benner, 2020). These can take place at school, for example by attending parent-teacher meetings, but they can also take place at home. These home-based involvement behaviors tend to be more invisible as they take place in the domestic atmosphere. Exactly these more invisible behaviors will be the focus point of this study. Parents may encourage the educational development of their child on a home-based level amongst others with the values they transmit, the social networks they find themselves in, and the use of language at home (Bakker et al., 2013). Not every parent has the same means and resources to invest in the development of their children. Given the fact that individuals with a higher socio-economic status in general have more economic, social and cultural resources than those with a lower socio-economic status (Gallo et al., 2005), the assumption arises that parents with a higher socio-economic status have more material and non-material resources and therefore more opportunities to be involved in the educational attainment of their child.

In regard to the subsequent potential influences of parental education involvement, there seems to be some controversy within the literature. Some argue that parental involvement has a clear positive influence on the educational attainment of the child (Gonzalez-Peinda et al., 2002; Jafarov, 2015). Others claim that parental involvement has a detrimental influence (Izzo et al., 1999; Shumow & Miller, 2001; Cooper et al., 2000). Even though parental involvement research has greatly expanded over the past decade, the findings on its influence on the educational attainment of the child still seem to be mixed (Morani et al., 2015). Scholars place the cause of the dissension at the heterogeneity of the concept of parental involvement and the methodological limitations of earlier studies. As parental education involvement is a concept existing out of several dimensions, it is quite complex to create a clear-cut definition and suitable operationalization. For example, there appears to be a crucial difference

between the quantity and the quality of parental educational involvement and its influence on the educational attainment of the child (Morani et al., 2015). Also, McNeal (2014) argues that it is of importance to distinguish between involvement based on the relationship between the parent and the child on the one hand and involvement based on the relationship between the parent and the school on the other hand. Epstein (1995; 2008) additionally found there to be six different categories in which parents show their educational involvement, namely, parenting, communicating, volunteering, learning and home, decision making and collaborating with the community. These categories all have different mechanisms working behind them, resulting in mixed results concerning the influence of parental educational involvement. The ambiguity of the concept appears to result in contradictory findings, in which there is no clear consensus on the direction and strength of the effect of parental educational involvement (Moroni et al., 2015). In this study, two specific dimensions of parental educational involvement will be examined providing insight into the complex and multilayered relationship between parental educational involvement and educational attainment. In the literature, parental literary involvement and parental cultural involvement are found to be determining factors which are highly influenced by parental socio-economic status and subsequently affect the educational attainment of the child (Rodrigues et al., 2009; Denney et al., 2010; Buis, 2013; Broer et al., 2019; Bourdieu, 1986; De Graaf et al., 2000). Therefore, it will be tested whether these two dimensions can mediate the relationship between parental socio-economic status and educational attainment. This results in the second Research Question, consisting of two sub-questions.

Research Question 2A. *“To what extent does parental literary involvement explain the relationship between parental socio-economic status and the educational attainment of the child?”*

Research Question 2B. *“To what extent does parental cultural involvement explain the relationship between parental socio-economic status and the educational attainment of the child?”*

In addition to the effects of parental educational involvement on children's educational attainment, parental emotional involvement seems to be an influential component at work here. In order to emotionally invest in their children, parents are supposed to show their interest, help their children become self-aware and support their children in setting goals (Roy & Giraldo-García, 2018). Parents are often perceived as support systems for their children's social and emotional learning. Children learn from their parents as they gain and apply knowledge, attitudes and abilities that will help them understand and manage emotions, set goals, embrace empathy for others and make responsible decisions (Taylor et al., 2017; Redding, 2014). Therefore, the expectation arises that parents need to socially and emotionally support their children in order to have a real impact on their development and facilitate their educational success. In line with this expectation, one would assume that there will be different outcomes for parents who are merely educationally invested with their children and parents who are both educationally and emotionally invested with their children (Roy &

Giraldo-García, 2018). In order to gain more insight into the relationship between parental educational involvement and the educational attainment of the child, this study will examine the influence of parental emotional involvement. This leads to the last two sub-questions of this study.

Research Question 3A. *“To what extent does the relationship between parental literary involvement and the educational attainment of the child differ for different levels of parental emotional involvement?”*

Research Question 3B. *“To what extent does the relationship between parental cultural involvement and the educational attainment of the child differ for different levels of parental emotional involvement?”*

2. Theoretical Framework

2.1 The influence of parental socio-economic status

Within sociological literature, family background is considered to be a multidimensional concept that has the ability to influence the educational attainment of the child (Buis, 2013). There is a variety of resources that can be transferred from one generation to the next, which can be offered to a child by one or more parents and positively contribute to their educational attainment. Additionally, parents may influence their children's educational career in a negative manner by the transmission of restraints, such as economic or emotional deprivation (Kiernan & Huerta, 2008). To sketch a vivid image; the metaphorical backpack a child brings to school every day can be filled with either useful tools and resources to flourish within the educational system or limitations and heavy weights that slow down the development of the child. The background of the child and their parental socio-economic status can be identified as determinants which influence the weight and usefulness of the backpack.

Socio-economic status is defined as ‘the social standing or class of an individual or group’ by The American Psychological Association and has commonly been used as a way of measuring family background (APA, 2018). Within literature, there has been an ongoing debate on how to conceptualize and measure socio-economic status (Broer et al., 2019). Originally, the occupational status of the father was most often used to measure the socio-economic status of the family. Later, scholars decided that socio-economic status should be a composite variable based on income, education and occupation of both parents (Brese & Mirazchiyski, 2013). Breen and Jonnson (2005) also identify parental educational attainment and parental occupation to be the most representative determinants for parental socio-economic status. Nevertheless, Buis (2013) argues that parental occupation seems to have become relatively less important over time in the Netherlands compared to parental educational attainment. Therefore, in this study parental socio-economic status will be conceptualized based on parental educational attainment of both the father and the mother.

Bourdieu (1986) identifies three fundamental forms of capital that can be transmitted from one generation to the next, namely economic, social, and cultural capital. The transmission of these forms of capital would contribute to the maintenance of social inequalities between families with differing socio-economic statuses. Economic resources allow parents to invest in their children's educational career, while a lack of economic resources constrain parents to financially support their children. Cultural capital contributes to the transmission of cultural messages and social class. This can occur in a so-called physical manner through physical appearance, body language and pronunciation or in an objectified manner through the accessibility to books and dictionaries for example (Broer et al., 2019). Social capital then allows families to have advantages within the educational system because of their social networks and useful connections. These three forms of capital, which are transmitted from parent to child, all influence the weight of the backpack and therefore highly influence the educational outcomes of the child.

The family investment perspective and the family stress perspective also link family demographics such as socio-economic status to children's developmental outcomes (Iruka et al., 2012). A higher socio-economic status, which often goes hand in hand with a higher income and educational level, provide families with the resources to purchase goods, materials, experiences and services which positively affect children's development (Haveman & Wolfe, 1995). On the other hand, a lower socio-economic status is most regularly associated with a lower income and educational level which might create economic hardship and psychological stress which stands in the way of the optimal development of the child (Conger et al., 1993). While the family investment perspective and the family stress perspective suggest different mechanisms underlying the relationship between parental socio-economic status and the development of the child, several studies have combined both perspectives to gain insights into child development outcomes as these perspectives both primarily argue for the non-negotiable relationship between parental socio-economic status and the development of the child (Chen et al., 2023).

These above theories and studies altogether result in the first Hypothesis.

Hypothesis 1. *“Parental socio-economic status has a positive influence on the educational attainment of the child.”*

2.2 The influence of parental educational involvement

According to Epstein (1995), there is no topic in education on which there is greater agreement than the need for parental educational involvement. Epstein considers there to be three major areas in which children grow and learn, namely the family, the school and the community. These spheres overlap by putting the child at the center of the relationship. In order to fully support the child, there must be frequent interactions amongst the three spheres. Therefore, it is of absolute relevance to prioritize strong relationships between the family, the school and the community of the child. This is called the theory of Overlapping Sphere of Influence. This theory would argue that it is of great interest for the child to have parents who are invested in their educational attainment, connecting the familiar and educational spheres.

Within literature, parental educational involvement is considered to be a form of capital that can be transmitted from parent to child (McNeal Jr., 2014). Parents all invest different quantities of time, attention and resources in their children. This is nonetheless not without the expectation of a return, as it will most likely lead to better educational performances. The majority of studies on the influence of parental socio-economic status on the parental educational involvement with the child find a positive relationship between these two. The overall level of parental involvement in families with a lower socio-economic status seems to be significantly lower than that in families with a higher socio-economic status (Butler & Le, 2018; Caro, 2018; Li et al., 2020). Zhao et al., (2023) identify some of the underlying mechanisms behind parental educational involvement. First, parents with a higher socio-economic status may have more skills and confidence in educationally supporting their children because

of their own educational attainment. Second, parents with a higher socio-economic status may have more resources, such as time or financial means, to support their children. A study by Cetin and Taskin (2016) additionally reveals that parents from different socio-economic backgrounds also have quite different ideas on the ideal parental educational involvement, resulting in a difference in behavior as well. Parents with a higher socio-economic status would value the educational attainment of their child more than parents with a lower socio-economic status, which resulted in a more invested attitude and active involvement the educational career of their children.

The positive relationship between parental socio-economic status and parental educational involvement seems to be established for the biggest part within sociological research. The relationship between parental educational involvement and the educational attainment of the child, on the other hand, evokes quite some discussion. Decades of research have shown that parental educational involvement has been positively related to educational attainment (Ogg & Anthony, 2020). Parental involvement plays an important role in students' education, and the advantages of it for students are numerous. Parental involvement appears to have a positive influence on the children's emotional development and behavior, well-being, social skills, school attendance and academic self-concept (Jafarov, 2015; Gonzalez-Peinda et al., 2002). On the other hand, there are studies claiming the exact opposite by referring to the negative impact of parental educational involvement as several studies found that parental educational involvement did in fact result in a decrease in the students' test scores (Izzo et al., 1999; Shumow & Miller, 2001; Cooper et al., 2000). The nature of involvement seems to be crucial in determining whether parental educational involvement has a positive or a negative influence on the educational attainment of the child (Fan & Williams, 2010). The earlier mentioned ambiguity of the concept of parental educational involvement results in contrasting findings. There seems to be an absence of a direct correlation between parental involvement and students' educational achievements and a clear operational definition of parental educational involvement and its different dimensions (Musengamana, 2023). This also places an urgency on the differentiation of the various dimensions of parental educational involvement and the specific mechanisms functioning behind them. In this study, the effects of parental literary involvement and parental cultural involvement on the educational attainment of the child will be the focus point. According to sociological literature, both dimensions could offer a meaningful explanation for the relationship between parental socio-economic status and the educational attainment of the child, which will be outlined in the following paragraphs.

Parental literary involvement refers to home-based literacy experiences and parents as active partners during early childhood in their child's literacy development (Denney et al., 2010). Parents are expected to play a significant role in the literary development of their child through teaching them languages, reading, writing and supporting the school's literacy agenda at home. This can take place during not only the early years of development but also during the primary and secondary schooling of the children (Tabbada-Rungduin et al., 2014). Within studies focused on the relationship between parental socio-economic status and literary involvement, a pattern of findings emerged which suggest that parents with a higher socio-economic status would more frequently read to their children and had

more books available in the house for children to read (Tabbada-Rungduin et al., 2014). According to Rodrigues et al. (2009), 27% of the language and cognitive skills of a 3-year-old can be explained by parental engagement in literacy activities. Through the presence of resources, families create an environment for children's reading development which can be either stimulating or restrictive. Subsequently, the development of reading habits and acquiring linguistic skills is acknowledged to play a crucial role in the educational attainment of the child (Buis, 2013). The influence of literary development of the child is expected to be especially important in countries like the Netherlands, because of the strong emphasis on teaching foreign languages at school (De Graaf et al., 2000). Therefore, the expectation arises that parental literary involvement has a mediating effect on the relationship between parental socio-economic status and educational attainment, which is formulated in Hypothesis 2A.

Hypothesis 2A. *“Parental literary involvement offers an explanation to the relationship between parental socio-economic status and the educational attainment of the child.”*

A second mechanism that is regularly deployed to explain the relationship between the parental socio-economic status and the educational attainment of the child, refers to the second sub-dimension of parental educational involvement which is parental cultural involvement and the transmission of cultural resources (Bourdieu, 1986). As discussed earlier, parents with a higher socio-economic status are expected to transmit cultural capital to their children to contribute to their educational attainment. The possession of cultural capital is considered to be an important factor for school success as well (Broer et al., 2019). De Graaf et al. (2000) identify two different ways in which the transmission of cultural capital may influence educational attainment. First, the way children are perceived by their teachers might be influenced by the amount of cultural capital the children own. Children with more cultural capital have developed a language and dialect, cultural preferences and ways of interacting that are generally perceived to be positive by their teachers. Given the fact that teachers play an important role in the educational attainment of the child, a positive perception by the teacher will be beneficial in the further educational career of this child. In addition, children with more cultural capital will also feel more comfortable within the educational environment than children with less cultural capital, which impacts their educational results in a positive way. This leads to the formulation of Hypothesis 2B.

Hypothesis 2B. *“Parental cultural involvement offers an explanation to the relationship between parental socio-economic status and the educational attainment of the child.”*

2.3 The influence of parental emotional involvement

The relationship between parental educational involvement and parenting style is considered not to be well-studied and often misunderstood within literature (Chung et al., 2020). Home-based parenting practices do not take place in isolation but occur in the emotional context of a parent-child relationship

(Darling & Steinberg, 1993). The Integrative Model of Parenting states that not only literal involvement, but also the way parents express this involvement and encouragement determines its effectiveness (Low & Doterer, 2013). Parents thus can play a dynamic role in enhancing their children's academic outcomes. They can provide their children with emotional and motivational support, which is often referred to as parental warmth (Jaiswal & Choudhuri, 2017; Ogg & Anthony, 2020). A strong positive association with a supportive, helpful parenting style and the educational attainment of the child is found (Jeynes, 2007). That means that in addition to being educationally involved in their children, the assumption arises that parents could even more positively influence their children's educational attainment by being emotionally invested.

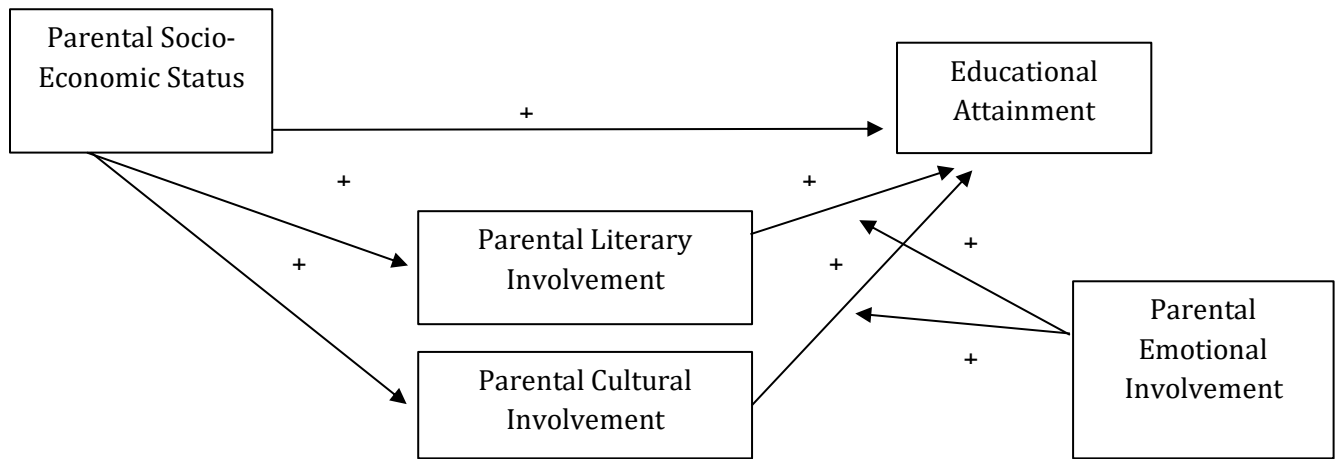
Within developmental psychology, one of the most prominent and empirically supported theoretical frameworks is the theory of ecological systems (Bronfenbrenner & Ceci, 1994; Darling, 2007; Darling & Steinberg, 1993). This theory focuses on the importance of interactions between three actors, namely individuals, processes, and contexts. It is claimed that these three are inextricably intertwined. In relation to the influence of parental involvement, the child would be the 'individual', the parental educational involvement would be the 'process' and the emotional relationship between parent and child would be the 'context'. The development of the child is influenced by so-called proximal processes, which are repeated interactions of the child with something or someone in their direct environment. An example of a proximal process could be an activity that parent and child do together such as reading or visiting a museum. Friedman et al. (1999) argue that the strength of the effect of this activity depends on the context in which the activity takes place. In other words, certain processes engaged by parents may have differing effects depending on the contexts in which they occur. Two different parents may initiate the exact same educational activities with their child, but the positive effect will be visible strongest for the child that finds itself in the most desirable context, which in this case refers to the emotional warmth of a parent-child relationship.

This was also found in a study on the significance of parental involvement in the development of the child by Liu et al. (2020). They found that the traditional way of thinking regarding parental involvement is often merely focused on supporting the education of the child. If parents were to additionally increase the involvement during early childhood in other domains beside the educational one, the positive influence of parental involvement in children's educational attainment would also increase. Based on these findings, the following two sub-Hypotheses were formulated.

Hypothesis 3A. *“The positive relationship between parental literary involvement and the educational level of the child will be stronger for children whose parents are more emotionally involved than for those whose parents are less emotionally involved.”*

Hypothesis 3B. *“The positive relationship between parental cultural involvement and the educational level of the child will be stronger for children whose parents are more emotionally involved than for those whose parents are less emotionally involved.”*

Figure 1. Conceptual Model



3. Data and Method

3.1 The Dataset

In order to test the hypothesis formulated above, the Family Survey Dutch Population (Meuleman, Tolsma & Kraaykamp, 2017/2018) was used. This survey offers an insight into the facts and figures on the Dutch population and their living situation. Based on large representative samples amongst the Dutch population, a survey was held. The questionnaire covers the life course in the broadest sense of the word by asking questions about the demographic, socio-economic and socio-cultural living conditions of the respondent. The sample of the Family Survey Dutch Population consists of Dutch citizens between the age of 18 and 70 years old, with a maximum of one person per household.

As the 2017- and the 2018-version of the Family Survey Dutch Population differed in contents and both questionnaires included items which were considered to be relevant for this study, these two were conducted into one dataset. For the largest part, the same respondents were included in the sample for both questionnaires which means that there is a large overlap in samples from 2017 and 2018. In 2017, the survey was presented to 4447 respondents of which 3050 (68,6%) fully completed the survey. In 2018, 3115 (74,8%) out of 4162 respondents completed the survey. After preparing the dataset and operationalizing all concepts, a sample existing out of 1857 respondents remained. The descriptive statistics of the prepared variables within this sample are visible in Table 1.

3.2 Inclusion Criteria

Before starting with the operationalization and analyses, I made a pre-selection of my sample. Due to the fact that only respondents who have completed their education are of relevance for my study, I first limited the sample to only include those over the age of 25 as the median age for finishing the highest educational level included is 25,5 years in the Netherlands (CBS, 2023). In doing so, 6.1% of the respondents were not included in the sample.

3.3 Operationalization

3.3.1 Parental Socio-Economic Status

Parental socio-economic status is the independent variable in this study. As mentioned in the theoretic framework of this study, there has been an ongoing debate on how to conceptualize and operationalize socio-economic status (Broer et al., 2018; Brese & Mirazchiyski, 2013; Breen & Jonnson, 2005). Based on the argumentation of Buis (2013), claiming that parental educational attainment is the most relevant predictor of parental socio-economic status in our modern society, in this study parental socio-economic status will be based on parental educational attainment.

The next question that comes up while operationalizing parental socio-economic status, is whether to base this on the educational attainment of the father, the mother or a combination of both.

The more traditional approach would be to only focus on the father, who was seen as the dominant predictor of the socio-economic well-being of the family for the largest part of history (Brese & Mirazchiyski, 2013). Hauser (1994) claims that the majority of studies focusing on parental socio-economic status improperly use variables related to either the father or the mother. This may result in distorted results, for example in the case of non-traditional families where children do not live in a family with both biological parents. Therefore, I included both the educational level of the mother and the father as predictors in the analyses. By separating the two, potential differences in the direction and strength of the effects can be distinguished.

In the questionnaire, the respondent was asked about the highest completed education of the father and the mother. For both questions, the respondent had the possibility to choose one of the 8 categories: no completed education/primary school/VMBO/Havo or VWO/MBO/HBO/University/Other. In order to have a variable of interval measuring level, these educational levels were transformed into educational years (Table 4). Respondents who answered with ‘other’ were encoded to a missing value as this answer does not offer any insights into the educational level of the parents. That resulted in a total of 819 missings for the socio-economic status of the father and 767 missings for the socio-economic status of the mother. The missings were deleted with the use of listwise deletion, which means that these will not be included in further analyses. Table 5 and 6 show the frequencies for parental socio-economic status.

3.3.2 Parental Educational Involvement

Parental Literary Involvement

The first dimension of parental educational involvement that was operationalized is parental literary involvement. This concept was made measurable based on the following items: *"My parents read to me when I was a preschooler."*, *"I was given books on my birthday / Christmas / Saint Nicholas."*, *"In my family, we talked about the books that I read."* and *"My parents were interested in what I read."*. For every statement, respondents could choose between the following answer categories: never, sometimes or often. For every item, missing values were replaced by valid values on the highest correlating item. An overview of the correlations between the items is visible in Table 7. Additional missing values were then deleted with listwise deletion.

Subsequently, a factor analysis was used to determine whether the four items related to parental literary involvement would create a reliable scale (Table 8). In doing so, a single dimension was found with an initial eigenvalue of 2,763. Additionally, a reliability analysis showed a Cronbach's Alpha of 0,850 which would not increase as a result of the deletion of one of the items (Table 9). This confirms the expectation that these four items would create a reliable scale to measure parental literary involvement. Therefore, a new variable was constructed in which the average score of a respondent on all four items was taken (Table 10).

Parental Cultural Involvement

The second dimension of parental educational involvement that will be taken into consideration is parental cultural involvement. Respondents were asked to indicate their parents would take them to the following activities when they were about 15 years old: *"classical concerts, opera and ballet"*, *"art museums (visual arts, exhibitions)"* and *"serious theater performances (drama, dance)"*. Respondents could answer: never, 1/2/3 times a year, 4/5/6 times a year or more than 6 times a year. Potential missing values for one of the items were replaced with the value for the highest correlating item (Table 11).

Then a factor analysis was carried out to find out if these items could be constructed into a reliable scale for parental cultural involvement (Table 12). The results of this analysis showed there to be only one dimension, with an initial eigenvalue of 2,279. The reliability analysis confirmed the reliability of this scale construction with a Cronbach's Alpha of 0,838 (Table 13). The Cronbach's Alpha would increase with the deletion of the second item, referring to the number of visits to art museums. Nevertheless, given the minimal potential increase of 0,027 and the theoretical value of the item it will be included in the construction of the scale. Therefore, the average score of all three items was used to create a new variable measuring the extent of parental cultural involvement (Table 14).

For this new variable, there were 1187 missing items. This can be explained given that not all respondents were given the opportunity to answer the questions on parental cultural involvement. Respondents who had answered earlier on that their parents themselves would never attend classical concerts, opera and ballet, art museums and serious theater performances had to skip this question. In

order to include these system missings in the dataset, they were recoded into the category 'never'. As a result, the sample would not decrease as drastically as would be the case if these missing values were to be deleted from the dataset.

3.3.3 Parental Emotional Involvement

The moderating variable in this study is parental emotional involvement. This variable was operationalized based on the following four statements: *"When I came home, my parents always asked what I had done that day."*, *"Whenever I was having a harsh time, my parents would try to comfort me."*, *"Whenever I did something and it worked out, my parents were proud of me."* and *"By both words and deeds, my parents let me know that they loved me."*. Respondents could answer: not at all accurate, not very accurate, neutral, more or less accurate or completely accurate. For as much as possible, missing values were replaced by valid values for the highest correlating item (Table 15). The remaining missing values were deleted from the dataset.

Following, a factor analysis was carried out (Table 16). With an initial eigenvalue of 2,732 only one dimension was found. Also, a Cronbach's Alpha of 0,841 was found after performing a reliability analysis (Table 17). If the first item, which refers to parents asking what the respondent had done that day, were to be deleted the Cronbach's Alpha would increase to 0,851. Nevertheless, the item will be included in the scale construction given the minimal increase and theoretical value. Therefore, a variable was constructed in which the average score of the respondent on all four items was taken (Table 18).

3.3.4 Educational Attainment

The educational attainment of the respondent is the dependent variable in this study. Respondents were asked for the highest education they completed by receiving a diploma or certificate. Respondents had the opportunity to choose from 28 different categories, all referring to different educational levels. In order to create a variable of a ratio measuring level, the levels were transferred into a number of years which can be linked to that specific educational level. For example, a respondent who has finished primary school would be assigned 6 years whereas a respondent who has finished an MBO BOL education would be assigned 12 years. Those who filled in the category 'other' were recoded as missing value. This division of educational levels and educational years can be found in Table 19.

In total there were 66 missing values, including the respondents who filled in 'other'. These cases were all deleted from the sample as they do not give an indication to what educational level these respondents finished. The distribution of the variable can be found in Table 20.

3.3.5 Control Variables

In all the regression analyses, control variables were included. For these predictors, the expectation was that they would have an effect on both parental socio-economic status and educational attainment and therefore influence the relationship between these two. Potential research biases can be prevented by including these control variables in the analyses.

The first control variable that was included is the year of birth. Respondents were asked what year they were born in the form of an open question. There were no missing values here. An overview of this is presented in Table 21, in which the birth years are recoded into birth cohorts.

Second, respondents were asked about their gender. The two answer categories were male and female. There were no missing values for this item. Given the nominal measuring level, two dummy variables were created which would make it possible to include this variable in further analyses (Table 22).

Next, not only the country of origin of the respondent but also the country of origin of both parents were included in the analyses. Respondents had to answer the question in which country they were born. They could choose between the following answer categories: The Netherlands, Indonesia or the Moluccas, Turkey, Morocco, Suriname, Netherlands Antilles or Aruba, Southern Europe, Eastern Europe, Western Europe or Other. There were no missing values here. To prevent multicollinearity in further analyses, some of the categories were merged which is visible in Table 23. As this is a variable of nominal measuring level, dummy variables were created. Respondents were then also asked which country their father and mother were born in. Here too, no missing values appeared. The same categories were merged as for the respondents' country of origin, to prevent multicollinearity and in order to include this nominal variable in further analyses dummy variables were created. The division of these variables can be found in Table 24 and Table 25.

The last two control variables which were included in the analyses because of their expected influence on the outcomes were the health status of the father and mother during youth. In regard to the health status of the father, respondents were asked to describe their father's health when they were approximately 15 years old. They could choose between the following answer categories: poor, moderate, good, very good, excellent, I don't know and not applicable. There were 84 missing values, which refer to the respondents who chose to answer with 'I don't know' or 'not applicable'. These missing values were deleted with the use of listwise deletion (Table 26). During the operationalization of the health Status of the mother, 47 missing appeared which were also deleted from the dataset (Table 27).

Table 1. Descriptive Statistics

	<i>Min.</i>	<i>Max.</i>	<i>Aver.</i>	<i>SD</i>	<i>%</i>
SES father	0	17	12,259	4,168	
SES mother	0	17	11,319	4,019	
Parental Literary Involvement	1	3	2,088	0,589	
Parental Cultural Involvement	1	4	1,345	0,524	
Parental Emotional Involvement	1	5	3,913	0,928	

Educational Years	0	19	12,731	2,700
Year of Birth	1946	1993	1964,830	13,596
Gender				
<i>Male</i>	0	1		46,6
<i>Female</i>	0	1		53,4
Country of Origin				
<i>The Netherlands</i>	0	1		91,4
<i>Indonesia/Moluccas</i>	0	1		0,6
<i>Turkey/Morocco</i>	0	1		0,8
<i>Suriname</i>	0	1		1,2
<i>Netherlands Antilles/Aruba</i>	0	1		0,6
<i>Europe</i>	0	1		2,7
<i>Missing</i>	0	1		2,5
Country of Origin Father				
<i>The Netherlands</i>	0	1		88,1
<i>Indonesia/Moluccas</i>	0	1		1,9
<i>Turkey/Morocco</i>	0	1		1,1
<i>Suriname</i>	0	1		1,8
<i>Netherlands Antilles/Aruba</i>	0	1		0,6
<i>Europe</i>	0	1		2,9
<i>Missing</i>	0	1		2,4
Country of Origin Mother				
<i>Netherlands</i>	0	1		86,9
<i>Indonesia/Moluccas</i>	0	1		2,2
<i>Turkey/Morocco</i>	0	1		1,2
<i>Suriname</i>	0	1		2,0
<i>Netherlands Antilles/Aruba</i>	0	1		0,6
<i>Europe</i>	0	1		4,5

	<i>Missing</i>	0	1			2,6
Health Father		1	5	3,311	0,967	
Health Mother		1	5	3,350	0,904	

Source: FNB 2017/2018, N=1857

4. Analyses and Results

4.1 The Relationship between Parental Socio-Economic Status and Educational Attainment

In Hypothesis 1, the expectation was presented that parental socio-economic status would have a positive effect on the educational attainment of the respondent. The effect of both the socio-economic status of the mother and the father on educational attainment was tested with the use of Model 1 (Table 2). This Model offers an insight into the total effect of parental socio-economic status on the respondent's educational attainment. The educational attainment of the respondent is included as the dependent variable. The predictors that are included are: socio-economic status of the father, socio-economic status of the mother, parental emotional involvement, and all control variables. That results in the following equation.

$$\text{Educational attainment} = \beta_0 + \beta_1(\text{SES mother}) + \beta_2(\text{SES father}) + \beta_3(\text{parental emotional involvement}) + \beta_4(\text{birthyear}) + \beta_5(\text{gender}) + \beta_6(\text{country of origin}) + \beta_7(\text{country of origin father}) + \beta_8(\text{country of origin mother}) + \beta_9(\text{health status father}) + \beta_{10}(\text{health status mother}) + \varepsilon.$$

After performing a linear regression analysis, it was found that the socio-economic status of the mother had a positive significant effect on educational attainment ($b=0,099$; $p<0,001$). Additionally, the socio-economic status of the father had a positive and significant effect on educational attainment ($b=0,130$; $p<0,001$). These findings confirm the expectation of Hypothesis 1, stating that parental socio-economic status has a positive influence on educational attainment.

Table 2. Linear Regression Analysis

	<i>Model 1.</i>	<i>Model 2.</i>	<i>Model 3.</i>	<i>Model 4.</i>	<i>bèta's</i>
The Intercept	-56,490***	-56,045***	-55,316***	-56,194***	
SES father	0,130***	0,109***	0,108***	0,109***	0,169
SES mother	0,099***	0,080***	0,080***	0,080***	0,118
Literary Involvement		0,703**	0,566***	0,622***	0,136
Cultural Involvement		0,305*	0,361	0,303**	0,059
Emotional Involvement	0,110			-0,100	-0,032
Interaction 1		-0,030			
Interaction 2			-0,015		
Birthyear	0,034***	0,033***	0,033***	0,033***	0,169

Gender						-0,089
(ref = male)						
	<i>Female</i>	-0,399***	-0,478***	-0,479***	-0,481***	
Health Father		0,056	0,037	0,035	0,038	0,014
Health Mother		-0,044	-0,065	-0,068	-0,062	-0,021
Country of Origin						0,080
(ref = the Netherlands)						
	<i>Indonesia/Moluccas</i>	-0,822	-0,834	-0,851	-0,824	
	<i>Turkey/Morocco</i>	-0,392	-0,155	-0,162	-0,149	
	<i>Suriname</i>	-1,457	-1,453	-1,466	-1,441	
	<i>Antilles/Aruba</i>	1,103	1,382	1,402	1,368	
	<i>Europe</i>	-0,387	-0,336	-0,336	-0,351	
	<i>Other</i>	-0,261	-0,297	-0,288	-0,307	
Country of Origin						0,096
Father						
(ref = the Netherlands)						
	<i>Indonesia/Moluccas</i>	0,552	0,644	0,638	0,654	
	<i>Turkey/Morocco</i>	1,330	1,421	1,419	1,441	
	<i>Suriname</i>	0,460	0,439	0,466	0,443	
	<i>Antilles/Aruba</i>	-0,867	-1,084	-1,097	-1,090	
	<i>Europe</i>	-0,077	-0,132	-0,124	-0,126	
	<i>Other</i>	0,994	1,010	1,013	1,004	
Country of Origin						0,070
Mother						
(ref = the Netherlands)						
	<i>Indonesia/Moluccas</i>	-0,141	-0,199	-0,193	-0,205	
	<i>Turkey/Morocco</i>	-0,399	-0,554	-0,555	-0,573	
	<i>Suriname</i>	0,087	0,209	0,208	0,195	
	<i>Antilles/Aruba</i>	-1,406	-1,417	-1,419	-1,417	
	<i>Europe</i>	0,563	0,588	0,579	0,595	
	<i>Other</i>	-0,350	-0,230	-0,237	-0,223	

Source: FNB 2017/2018, N=1857

* $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$

4.2 The Mediating Effect of Parental Literary Involvement

Hypothesis 2A proposed that parental literary involvement could offer an explanation for the relationship between parental socio-economic status and educational attainment. To test this mediating effect of parental literary involvement, I used Process Macro by Hayes (2018). This is a statistical tool which can be used to differentiate between the direct, indirect and total effect of one or more mediating or moderating variables on the relationship between the independent and dependent variables through bootstrapping (Abu-Bader & Jones, 2021).

First, the mediating effect of parental literary involvement was tested for the relationship between the socio-economic status of the mother and educational attainment. In order to do this, not only the total effect of the independent variable on the dependent variable but also the direct effect and the indirect effect through the mediating variable were examined (Table 3). The total effect of the socio-economic status of the mother on the educational attainment of the respondent was equal to 0,1654 and found to be significant (95% CI: 0,1318-0,1989). The direct effect on educational attainment was also significant (95% CI: 0,1146;0,1823), with a coefficient of 0,1485. Lastly, the indirect effect through the mediating variable was also significant (95% CI: 0,010;0,247) and equal to 0,0169. These findings reveal that there is a significant mediating effect of parental literary involvement on the relationship between socio-economic status of the mother and educational attainment of the respondent.

Second, the mediating effect on the relationship between socio-economic status of the father and educational attainment was tested through Process Macro. Here there was found to be a significant total effect of 0,1668 (95% CI: 0,1361-0,1975). The direct effect of socio-economic status of the father on educational attainment was equal to 0,1516 and also significant (95% CI: 0,1206-0,1826). Last, the indirect effect through parental literary involvement was also significant (95% CI: 0,0089;0,0227), with a coefficient of 0,0153. These results prove there to be a significant mediating effect of parental literary involvement on the relationship between the socio-economic status of the father and the educational attainment of the respondent.

Given the significant indirect effects through parental literary involvement for the relationship between the socio-economic status of both parents and the educational attainment of the respondent, Hypothesis 2A can be confirmed. Parental literary involvement seems to partly explain the relationship between parental socio-economic status and educational attainment.

Table 3. Process Macro

	<i>Total effect</i>	<i>Direct effect</i>	<i>Indirect effect</i>
Literary Involvement	0,1654*	0,1485*	0,0169*
(SES mother)			

Literary Involvement	0,1668*	0,1516*	0,0153*
(SES father)			
Cultural Involvement	0,1567*	0,1485*	0,0123*
(SES mother)			
Cultural Involvement	0,1592*	0,1516*	0,0076*
(SES father)			

4.3 The Mediating Effect of Parental Cultural Involvement

The second potential mediating variable is parental cultural involvement. Hypothesis 2B states that this variable would offer an explanation for the relationship between parental socio-economic status and educational attainment. This effect was also tested with Process Macro (Hayes, 2018). The findings of this analysis can be found in Table 3.

First, the effect of parental cultural involvement on the relationship between the socio-economic status of the mother and the educational attainment of the respondent was tested. The total effect of the independent variable on the dependent variable was significant (95% CI: 0,1232-0,1902) and equal to 0,1567. Subsequently, the direct effect was significant (95% CI: 0,1146-0,1823), with a coefficient of 0,1485. The indirect effect through parental cultural involvement was also significant (95% CI: 0,0026-0,0226), with a coefficient of 0,0123. That means that parental cultural involvement partly offers an explanation for the relationship between the socio-economic status of the mother and the educational attainment of the respondent.

Then, the mediating effect of parental cultural involvement on the relationship between the socio-economic status of the father and educational attainment was tested with the use of Process Macro. Here, the total effect was significant (95% CI: 0,1286-0,1898) with a coefficient equal to 0,1592. With a coefficient of 0,1516, the direct effect was also found to be significant (95% CI: 0,1206-0,1826). Additionally, the indirect effect through parental cultural involvement was equal to 0,0076 and also found to be significant (95% CI: 0,0008-0,0145). These findings prove there to be a significant mediating effect for parental cultural involvement in the relationship between the socio-economic status of the father and educational attainment.

These findings confirm the expectation that parental cultural involvement could at least partially explain the relationship between parental socio-economic status and educational attainment. Therefore, Hypothesis 2B is confirmed.

4.4 The Moderating Effect of Parental Emotional Involvement

The effect which was examined in this study is the potential moderating effect of parental emotional involvement on the relationship between parental socio-economic status and the educational attainment of the respondent. In doing so, Hypothesis 3A and 3B were tested. These Hypotheses expected the relationship between on the one hand parental literary involvement and parental cultural involvement and on the other hand educational attainment to increase in strength for higher levels of parental emotional involvement.

Model 2 tests the moderating effect of parental emotional involvement on the relationship between parental literary involvement and educational attainment of the respondent (Table 2). In order

to gain insight into this effect, an interaction term was created and included in this Model. In addition, the mediating variables and all control variables were included and controlled for in this Model.

$$\text{Educational Attainment} = \beta_0 + \beta_1(\text{SES mother}) + \beta_2(\text{SES father}) + \beta_3(\text{parental literary involvement}) + \beta_4(\text{parental cultural involvement}) + \beta_4(\text{parental emotional involvement} * \text{parental literary involvement}) + \beta_5(\text{birthyear}) + \beta_6(\text{gender}) + \beta_7(\text{country of origin}) + \beta_8(\text{country of origin father}) + \beta_9(\text{country of origin mother}) + \beta_{10}(\text{health status father}) + \beta_{11}(\text{health status mother}) + \varepsilon.$$

Model 2 revealed there to be a non-significant effect ($p=0,443$) of the interaction term ($b=-0,030$). This means that there was no significant moderating effect found, and the relationship between parental literary involvement and educational attainment does not differ for different levels of parental emotional involvement. This is not in line with the expectation formulated in Hypothesis 3A, which has therefore been rejected.

The third and last Model focuses on the potential moderating effect of parental emotional involvement on the relationship between parental cultural involvement and educational attainment of the respondent. The interaction term, mediating variables, and control variables were included in Model 3, which brings us to the following equation.

$$\text{Educational Attainment} = \beta_0 + \beta_1(\text{SES mother}) + \beta_2(\text{SES father}) + \beta_3(\text{parental literary involvement}) + \beta_4(\text{parental cultural involvement}) + \beta_4(\text{parental emotional involvement} * \text{parental cultural involvement}) + \beta_5(\text{birthyear}) + \beta_6(\text{gender}) + \beta_7(\text{country of origin}) + \beta_8(\text{country of origin father}) + \beta_9(\text{country of origin mother}) + \beta_{10}(\text{health status father}) + \beta_{11}(\text{health status mother}) + \varepsilon.$$

Model 3 also found a non-significant effect for the interaction term ($b=-0,015$; $p=0,795$). Therefore, Hypothesis 3B has also been rejected. Unlike the earlier presented expectation, parental emotional involvement does not seem to have a moderating effect on the relationship between parental cultural involvement and educational attainment.

4.5 The Strength of the Predictors

In order to compare the strengths of the different predictors, Sheaf variables were created for the dummy-variables. These Sheaf variables were conducted based on equations which include the b-coefficients of the individual dummy variables from Model 4, in which all predictors were included (Table 2). The Sheaf Variables were created for the country of origin and the country of origin of both parents. The equations for these look as followed:

$$\text{Sheaf (country of origin)} = (-0,798 * \text{InMo}) + (-0,122 * \text{TurMo}) + (-1,384 * \text{Suri}) + (1,405 * \text{AntAru}) + (-0,376 * \text{Eu}) + (-0,315 * \text{Mis_C})$$

$$\text{Sheaf (country of origin father)} = (0,632 * \text{InMo_F}) + (1,453 * \text{TurMo_F}) + (0,400 * \text{Suri_F}) + (-1,148 * \text{AntAru_F}) + (-0,132 * \text{Eu_F}) + (1,012 * \text{Mis_F})$$

$$\text{Sheaf (country of origin mother)} = (-0,199 * \text{InMo_M}) + (-0,612 * \text{TurMo_M}) + (0,196 * \text{Suri_M}) + (-1,361 * \text{AntAru_M}) + (0,601 * \text{Eu_M}) + (-0,200 * \text{Mis_M})$$

After adding the Sheaf variables to the linear regression analysis, the different predictors can be compared in strength to one another through the bèta's. It appears to be that the socio-economic status of the father (0,169) and year of birth (0,169) are the strongest predictors for educational attainment. Then, parental literary involvement (0,136), the socio-economic status of the mother (0,118), parental cultural involvement (0,059), and gender (-0,089) follow up. Lastly, parental emotional involvement (-0,032), the health status of both parents (0,014;-0,021), the country of origin (0,080) and the country of origin of both parents (0,096;0,070) seem to be the weakest predictors of educational attainment.

4.6 Proportion Explained Variance

For all four models, the proportionate explained variances are presented in Table 28. All Models can be considered to have a strong proportionate explained variance according to the general rules of Field (2018), meaning that the predictors included in Models offer a strong explanation for the variance of educational attainment as the dependent variable.

5. Conclusion and Discussion

The ultimate goal of this study was to gain insight into the potential influential role of parents as silent educators. It was found that there was a relationship between the socio-economic status of both parents and the educational attainment of the child. Additionally, the analyses revealed both dimensions of parental educational involvement, namely parental literary involvement and parental cultural involvement, to be able to partially explain the relationship between parental socio-economic status and the educational attainment of the child. Last, the potential influence of parental emotional involvement on the relationships between parental educational involvement and the educational attainment of the child was not confirmed.

These findings predominantly offer support for the theoretical frameworks as set forth earlier in this study. In regard to the relationship between parental socio-economic status and educational attainment not only the multidimensional influence of family background as explained by Buis (2013), but also the family stress model and the family investment model (Iruka et al., 2012) seem to be confirmed within the specific context of this study. Together with the year of birth, the socio-economic status of both parents appeared to be the strongest predictor for the educational attainment of the child. Also, the decision to differentiate between the influence of the father and the mother seems to have been relevant as the results had different effects on both parents. Here, the effect of the socio-economic status of the father seemed to be more influential than the socio-economic status of the mother.

In addition, it has been found that the two dimensions of parental educational involvement, parental literary involvement and parental cultural involvement, mediate the relationship between parental socio-economic status and educational attainment to a different extent. Therefore, it has been a relevant addition to make a theoretical and methodological distinction between the different dimensions of involvement. This differentiation was made to tackle the frequently occurring lack of clear differentiation and operationalization of the multi-dimensional concept of parental educational involvement. Both dimensions of parental educational involvement were made measurable based on a number of statements, creating a reliable scale. It was found that these two dimensions indeed offer explanatory mechanisms for the relationship between parental socio-economic status and educational attainment, but that the explanatory effect of parental literary involvement seems to be stronger than the effect of parental cultural involvement. Even though the effects for both dimensions go in the same direction, if these would have been merged together in measuring the influence of parental educational involvement, the effect of parental literary involvement would have been underestimated while there would have been an overestimation on the effect of parental cultural involvement.

Contrary to the above findings, parental emotional involvement did not seem to have an effect on the relationship between parental educational involvement and educational attainment. Nevertheless, it could be interesting to explore other dimensions of parental educational involvement besides parental literary involvement and parental cultural involvement to see if a moderating effect can be found there. As the theoretical framework focused on parental emotional involvement does not specifically zoom

into parental literary involvement or parental cultural involvement in relation to parental emotional involvement but focuses on general parental educational involvement, it could be the case that there are dimensions of parental educational involvement for which the relation with educational attainment differs per level of parental emotional involvement.

This brings us to one of the more critical aspects of the set-up of this study, which has to do with the sample and use of the dataset the Family Survey Dutch Population (Meuleman, Tolsma & Kraaykamp, 2017/2018). The surveys used to answer the research questions were held in 2017 and 2018, amongst respondents aged between 18 and 70 years old. In order to present a representative image of the current situation within the Dutch educational system, this is not the most useful sample. The average year of birth in the used sample equals 1964, which refers to an average age of 53.5. In the last couple of decades, there have been plenty of changes in the Dutch educational system (Luijkx & de Heus, 2008), the influence of parental education on the educational attainment of their children (Mooyart & Liefbroer, 2016) and the extend of parental educational involvement for both parents (Denessen, 2019). Therefore, potential future research focused on answering similar research questions but then with a sample only consisting of adolescents could be relevant in presenting a more representative and up-to-date image of the situation.

Also, the operationalization of cultural capital and parental cultural involvement in this study could be considered to be approached in a quite traditional and perhaps outdated way. In this study, cultural involvement refers to so-called high arts such as classical concerts, opera, ballet, art performances, and serious theater. Within more recent literature on cultural capital, there has been a transformation on how to approach arts and culture in our modern society (Tajtakova, 2013). There have been changes in how art is created and how it is delivered to the audience as a result of new information systems, innovations, and digital technologies. Prieur and Savage (2013) therefore argue that the traditional forms of highbrow culture as defined to be cultural capital by Bourdieu in France during the 1960s should be revised. Cultural consumption has changed in form and frequency, and in order to examine parental cultural involvement, it could be relevant to include more modern forms of cultural capital to create a complete image.

An additional point of critique to the set-up of the dataset has to do with the retrospective approach, as the respondents were asked to answer questions about their own childhood. This retrospective approach to childhood experiences is a widely used technique that does get critiqued for its limitations (Hardt et al., 2006). Human memory is not capable of remembering everything throughout our lives, and our memories are merely reconstructions of past events which are a continuous subject to change (Nader, 2003). Schacter (2001) distinguishes transience to be of importance in how our mind can remember or forget. The longer the period between the actual event and the recall, the more likely that someone has forgotten or mentally altered the event. Especially since the sample includes respondents who are of age, the reliability of the retrospective questions and answers decreases. This is something to keep in mind during the interpretation of the results and an additional argument

for future research to focus on a sample existing out of adolescents in order to aim for more reliable answers on the retrospective questions.

Next, is a point of critique focused on the methodological approach in testing the mediation effects. For the last couple of years, the Process Macro tool has been a popular tool to examine underlying processes and conditions with the use of structural equation models (Rohrer et al., 2022). Nevertheless, there are plenty of reasons to critically approach this tool. Interpreting the output of Process Macro requires strong assumptions which are not always taken into consideration in the field. Reserve causality and unobserved confounding must be ruled out, as correlations between variables are often mistaken for causal relationships during the interpretation of the results. Fiedler et al. (2011) also warn of misunderstandings of mediation analysis in identifying mediators. All a mediation analysis, such as Process Macro, can do is reveal the significant influence of the mediator on the dependent variable. Therefore, one must be careful in interpreting Process Macro results, also in this study.

Lastly, a more general and personal point of critique on this study, has to do with the operationalization and approach to the dependent variable educational attainment. In this study, educational attainment was measured based on educational years. In most cases, the number of educational years will correlate with the highest completed educational level. Nevertheless, there are some exceptions to this. You could think about students who had to repeat one or more years and students who did not follow the natural route during their educational career because they for example first finished their Mavo after which they continued with Havo or because they attended University after finishing their HBO. Additionally, neither educational level nor educational years do create a representative picture of the extent to which a child was able to flourish within the educational system. If a child gets to finish their MBO without any anxiety or pressure and with full motivation and satisfaction, in my eyes this would suggest a 'higher educational achievement' than a child who gets pressured into university and succeeds to finish their education while experiencing high levels of stress and the minimal space to develop and flourish. In my eyes, the emphasis on lower and higher levels of education should therefore be shifted to the more general concept of 'educational experience' or 'fulfillment of educational potential'.

In summary, this study has proven the determining role of the parent as the silent educator. Even though it did not appear to be all-determining, it is definitely an influential role which is worth investigating. There are plenty of possibilities for future research to further extend and explain the underlying mechanisms which are at work here. In doing so, hopefully not only the 96% of Dutch teachers as identified by Van der Pers et al. (2022) who experience inequalities within the educational system, but also the 75% of the teachers who felt like they were in need of more knowledge on the topic of inequalities of opportunity will decrease over time.

6. Appendix

6.1 Literature

- Abu-Bader, S., & Jones, T. V. (2021). Statistical mediation analysis using the sobel test and hayes SPSS process macro. *International Journal of Quantitative and Qualitative Research Methods*.
- APA. (2018). Socioeconomic status. Retrieved from <http://www.apa.org/topics/socioeconomicstatus/>
- Badou, M., & Day, M. (2021). *Kansengelijkheid in het onderwijs*. Verwey-Jonker Instituut.
- Bakker, J. T. A., Denessen, E. J. P. G., Dennissen, M. H. J., & Oolbekkink-Marchand, H. W. (2013). Leraren en ouderbetrokkenheid: Een reviewstudie naar de effectiviteit van ouderbetrokkenheid en de rol die leraren daarbij kunnen vervullen. Behavioral Science Institute. Radboud University Nijmegen.
- Boonk, L., Gijsselaers, H. J., Ritzen, H., & Brand-Gruwel, S. (2018). A review of the relationship between parental involvement indicators and academic achievement. *Educational research review*, 24, 10-30.
- Bourdieu, P. (1986). *The forms of capital*. In J. Richardson (Ed.), Handbook of theory and research for the sociology of education. New York: Greenwood.
- Boyle, A. E., & Benner, A. D. (2020). Understanding parental educational involvement: The roles of parental general and child-specific school readiness beliefs. *Merrill-Palmer Quarterly*, 66(2), 199-226.
- Breen, R. and Jonsson, J. O. (2005). Inequality of opportunity in comparative perspective: recent research on educational and social mobility. *Annual Review of Sociology*, 31, 223-243.
- Brese, F., & Mirazchiyski, P. (2013). Measuring students' family background in large-scale international education studies. Issues and methodologies in large-scale assessments. Special issue 2. IERI Monograph series. Hamburg: IERI.
- Broer, M., Bai, Y., Fonseca, F., Broer, M., Bai, Y., & Fonseca, F. (2019). A review of the literature on socioeconomic status and educational achievement. *Socioeconomic inequality and educational outcomes: Evidence from twenty years of TIMSS*, 7-17.
- Bronfenbrenner, U., & Ceci, S. J. (1994). Nature-nurture reconceptualized in developmental perspective: A bioecological model. *Psychological Review*, 101, 568–586.

- Buis, M. L. (2013). The composition of family background: The influence of the economic and cultural resources of both parents on the offspring's educational attainment in the Netherlands between 1939 and 1991. *European Sociological Review*, 29(3), 593-602.
- Butler, Y. G., & Le, V.-N. (2018). A longitudinal investigation of parental social-economic status (SES) and young students' learning of English as a foreign language. *System*, 73, 4–15.
- Cairney, T. H. (1992). *Parents, Our Silent Partners*. University of Western Sydney, Nepean.
- Caro, D. H. (2018). Socioeconomic gaps in subject interest: The mediating role of parental cognitive involvement. Large-scale Assessments. *Education*, 6(1),
- Cetin, S. K., & Taskin, P. (2016). Parent involvement in education in terms of their socio-economic status. *Eurasian Journal of Educational Research*, 16(66), 105-122.
- Chen, J. H., Zheng, H., Drake, B., & Jonson-Reid, M. (2023). Explaining adolescent problematic behavior: An application of the family stress model and the Family Investment Model. *Journal of Child and Family Studies*, 32(7), 1977-1988.
- Chung, G., Phillips, J., Jensen, T. M., & Lanier, P. (2020). Parental involvement and adolescents' academic achievement: Latent profiles of mother and father warmth as a moderating influence. *Family process*, 59(2), 772-788.
- Conger, R. D., Conger, K. J., Elder, G. H., Jr., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1993). Family economic stress and adjustment of early adolescent girls. *Developmental Psychology*, 29, 206-219.
- Cooper, H., Lindsay, J. J. and Nye, B. (2000). Homework in the home: how student, family, and parenting-style differences relate to the homework process. *Contemporary Educational Psychology*, 25, 464–487.
- Darling, N. (2007). Ecological systems theory: The person in the center of the circles. *Research in Human Development*, 4, 203–217.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, 113, 487–496.
- De Graaf, N.-D., De Graaf, P. M. and Kraaykamp, G. (2000). Parental cultural capital and educational attainment in the Netherlands: a refinement of the cultural capital perspective. *Sociology of Education*, 73, 92-111.

- Denessen, E. (2019). The Netherlands: Parental involvement in the Netherlands. *Parental Involvement Across European Education Systems* (pp. 64-76). Routledge.
- Denney, M. K., Moore, K., & Snyder, J. (2010). Supporting parent and caregiver involvement in early Literacy practices with young children from diverse backgrounds and abilities. *Research Brief*, 1(1).
- Epstein, J.L. (1995). School/Family/Community partnerships: Caring for the children we share. *The Phi Delta Kappan*, 76(9), 701-712.
- Epstein, J.L. (2008). Improving family and community involvement in secondary schools. *Principal Leadership*, 8(2), 16-22.
- Fan, W., & Williams, C. M. (2010). The effects of parental involvement on students' academic self-efficacy, engagement and intrinsic motivation. *Educational psychology*, 30(1), 53-74.
- Fiedler, K., Schott, M., & Meiser, T. (2011). What mediation analysis can (not) do. *Journal of Experimental Social Psychology*, 47(6), 1231-1236.
- Friedman, S. L., & Wachs, T. D. (1999). Measuring environment across the life span: Emerging methods and concepts. *American Psychological Association*, (pp. xvii-419).
- Glijn, R., Kooiman, N., van Gaalen, R. (2023). Voorsorteren op gezinsleven? Centraal Bureau voor de Statistiek. Retrieved from <https://www.cbs.nl/nl-nl/longread/statistische-trends/2023/voorsorteren-op-gezinsleven-/bijlage>
- Gallo, L. C., Bogart, L. M., Vranceanu, A. M., & Matthews, K. A. (2005). Socioeconomic status, resources, psychological experiences, and emotional responses: a test of the reserve capacity model. *Journal of personality and social psychology*, 88(2), 386.
- Gonzalez-Pienda, J. A., Nunez, J. C., Gonzalez-pumariega, S., Alvarez, L ,Roces, C. and Garcia, M. (2002). A structural equation model of parental involvement, motivational and attitudinal characteristics, and academic achievement. *The Journal of Experimental Education*, 70(3), 257-287.
- Gordon, I. (1979). *The effects of parent involvement in schooling*. In R. S. Brandt (Ed.), *Partners: Parents and schools*. Alexandria, VA: Association for Supervision and Curriculum Development.

- Hauser, R. M. (1994). Measuring socioeconomic status in studies of child development. *Child Development*, 65(6), 1541–1545.
- Hardt, J., Sidor, A., Bracko, M., & Egle, U. T. (2006). Reliability of retrospective assessments of childhood experiences in Germany. *The Journal of nervous and mental disease*, 194(9), 676-683.
- Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of Economic Literature*, 33(4), 1829-1878.
- Henderson, A. T. (Ed.). (1987). *The evidence begins to grow: Parent involvement improves student achievement*. Columbia, MD: National Committee for Citizens in Education. ERIC Document Reproduction Service No. PS 018600.
- Iruka, I. U., LaForett, D. R., & Odom, E. C. (2012). Examining the validity of the family investment and stress models and relationship to children's school readiness across five cultural groups. *Journal of Family Psychology*, 26(3), 359.
- Izzo, C. V., Weissberg, R. P., Kaspro, W, J. and Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance. *American Journal of Community Psychology*, 27(6), 817-839
- Jafarov, J. (2015). *Factors affecting parental involvement in education: The analysis of literature*. Queen's University of Belfast, United Kingdom.
- Jaiswal, S. K., & Choudhuri, R. (2017). A review of the relationship between parental involvement and students' academic performance. *The International Journal of Indian Psychology*, 4(3), 110-123.
- Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education*, 42, 82–110.
- Kiernan, K. E., & Huerta, M. C. (2008). Economic deprivation, maternal depression, parenting and children's cognitive and emotional development in early childhood 1. *The British journal of sociology*, 59(4), 783-806.
- Li, X., Yang, H., Wang, H., & Jia, J. (2020). Family socioeconomic status and home-based parental involvement: A mediation analysis of parental attitudes and expectations. *Children and Youth Services Review*, 116, 105111.

- Liu, Y., Sulaimani, M. F., & Henning, J. E. (2020). The significance of parental involvement in the development in infancy. *Journal of Educational Research and Practice*, 10(1), 11.
- Lowe, K., & Dotterer, A. M. (2013). Parental monitoring, parental warmth, and minority youths' academic outcomes: Exploring the integrative model of parenting. *Journal of youth and adolescence*, 42, 1413-1425.
- Luijkx, R., & de Heus, M. (2008). *The educational system of the Netherlands*. The international standard classification of education (ISCED-97). An evaluation of content and criterion validity for, 15, 47-75.
- McNeal Jr, R. B. (2014). Parent Involvement, Academic Achievement and the Role of Student Attitudes and Behaviors as Mediators. *Universal Journal of Educational Research*, 2(8), 564-576.
- Meuleman, R., Tolsma, J., & Kraaykamp, G. (2018). Family Survey Dutch Population. Retrieved from <https://www.dataarchive.lissdata.nl/study-units/view/919>
- Mooyaart, J. E., & Liefbroer, A. C. (2016). The influence of parental education on timing and type of union formation: Changes over the life course and over time in the Netherlands. *Demography*, 53(4), 885-919.
- Moroni, S., Dumont, H., Trautwein, U., Niggli, A., & Baeriswyl, F. (2015). The need to distinguish between quantity and quality in research on parental involvement: The example of parental help with homework. *The journal of educational research*, 108(5), 417-431.
- Musengamana, I. (2023). A systematic review of literature on parental involvement and its impact on children learning Outcomes. *Open Access Library Journal*, 10(10), 1-21.
- Nader, K. (2003). Neuroscience: Re-recording human memories. *Nature*. 9:571–572.
- Ogg, J., & Anthony, C. J. (2020). Process and context: Longitudinal effects of the interactions between parental involvement, parental warmth, and SES on academic achievement. *Journal of school psychology*, 78, 96-114.
- Planbureau, C. (2020). *Ongelijkheid van het jonge kind*. CPB Notitie. Den Haag: Centraal Planbureau.
- Prieur, A., & Savage, M. (2013). Emerging forms of cultural capital. *European societies*, 15(2), 246-267.

- Redding, S. (2014). The “something other”: Personal competencies for learning and life. Philadelphia, PA: Temple University, Center on Innovations in Learning. Retrieved from http://www.adi.org/downloads/TheSomethingOther_rev03.10.15.pdf
- Rodriguez, E. T., Tamis-LeMonda, C. S., Spellman, M., Pan, B., Raikes, L.-G., & Luz, G. (2009). The formative role of home literacy experiences across the first three years of life in children in low-income families. *Journal of Applied Developmental Psychology*, 30, 677-694.
- Rohrer, J. M., Hünermund, P., Arslan, R. C., & Elson, M. (2022). That’s a lot to process! Pitfalls of popular path models. *Advances in Methods and Practices in Psychological Science*, 5(2).
- Roy, M., & Giraldo-García, R. (2018). The role of parental involvement and social/emotional skills in academic achievement: global perspectives. *School Community Journal*, 28(2), 29-46.
- Schacter DL (2001) *The Seven Sins of Memory: How the Mind Forgets and Remembers*. Houghton Mifflin Co.
- Shumow, L. and Miller, J. D. (2001) ‘Parents’ at-home and at-school academic involvement with young adolescents. *The Journal of Early Adolescence*, 21(1), 68-91.
- Tabbada-Rungduin, T., Abulon, E. L., Fetalvero, L., & Suatengco, R. (2014). Exploring parental involvement and teachers’ activities in early literacy development. *International Journal of Research Studies in Education*, 3(3), 3-19.
- Tajtakova, M. (2013). New Facets of Culture and the Arts Within the Nowadays World of Information Systems and New Technology. *American Academic & Scholarly Research Journal*, 5(3).
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development*, 88(4), 1156–1171.
- van der Pers, M., Middelbeek, L., Lockhorst, D., Brouwer, P., Louws, M., Schenke, W., Van Stigt, A., De Vries, B., & Walraven, A. (2022). *Kansenongelijkheid in het onderwijs vanuit het perspectief van de leraar*. University of Groningen.
- Van Elk, R., Van Der Steeg, M., & Webbink, D. (2011). Does the timing of tracking affect higher education completion? *Economics of Education Review*, 30(5), 1009-1021.
- Verstraten, P., Visser, D., & Zumbuehl, M. (2021). Ongelijkheid in het Nederlandse onderwijssysteem. Retrieved from <https://esb.nu/ongelijkheid-in-het-nederlandse-onderwijssysteem/>

Zhao, X., Cao, W., & Maes, J. H. (2023). Association between adolescents' socioeconomic status and working memory updating functioning: Role of parental educational involvement. *Journal of Research on Adolescence*, 33(3), 931-942.

6.2 Tables

Table 1. Descriptive Statistics

	<i>Min.</i>	<i>Max.</i>	<i>Ave.</i>	<i>SD</i>	<i>%</i>
SES father	0	17	12,259	4,168	
SES mother	0	17	11,319	4,019	
Parental Literary Involvement	1	3	2,088	0,589	
Parental Cultural Involvement	1	4	1,345	0,524	
Parental Emotional Involvement	1	5	3,913	0,928	
Educational Years	0	19	12,731	2,700	
Year of Birth	1946	1993	1964,830	13,596	
Gender					
<i>Male</i>	0	1			46,6
<i>Female</i>	0	1			53,4
Country of Origin					
<i>The Netherlands</i>	0	1			91,4
<i>Indonesia/Moluccas</i>	0	1			0,6
<i>Turkey/Morocco</i>	0	1			0,8
<i>Suriname</i>	0	1			1,2
<i>Netherlands Antilles/Aruba</i>	0	1			0,6
<i>Europe</i>	0	1			2,7
<i>Missing</i>	0	1			2,5
Country of Origin Father					
<i>The Netherlands</i>	0	1			88,1
<i>Indonesia/Moluccas</i>	0	1			1,9
<i>Turkey/Morocco</i>	0	1			1,1
<i>Suriname</i>	0	1			1,8
<i>Netherlands Antilles/Aruba</i>	0	1			0,6
<i>Europe</i>	0	1			2,9

<i>Missing</i>	0	1		2,4
Country of Origin Mother				
<i>Netherlands</i>	0	1		86,9
<i>Indonesia/Moluccas</i>	0	1		2,2
<i>Turkey/Morocco</i>	0	1		1,2
<i>Suriname</i>	0	1		2,0
<i>Netherlands Antilles/Aruba</i>	0	1		0,6
<i>Europe</i>	0	1		4,5
<i>Missing</i>	0	1		2,6
Health Father	1	5	3,311	0,967
Health Mother	1	5	3,350	0,904

Source: FNB 2017/2018, N=1857

Table 2. Linear Regression Analysis

	<i>Model 1.</i>	<i>Model 2.</i>	<i>Model 3.</i>	<i>Model 4.</i>	<i>bèta's</i>
The Intercept	-56,490***	-56,045***	-55,316***	-56,194***	
SES father	0,130***	0,109***	0,108***	0,109***	0,169
SES mother	0,099***	0,080***	0,080***	0,080***	0,118
Literary Involvement		0,703**	0,566***	0,622***	0,136
Cultural Involvement		0,305*	0,361	0,303**	0,059
Emotional Involvement	0,110			-0,100	-0,032
Interaction 1		-0,030			
Interaction 2			-0,015		
Birthyear	0,034***	0,033***	0,033***	0,033***	0,169
Gender (ref = male)					-0,089
<i>Female</i>	-0,399***	-0,478***	-0,479***	-0,481***	
Health Father	0,056	0,037	0,035	0,038	0,014
Health Mother	-0,044	-0,065	-0,068	-0,062	-0,021
Country of Origin (ref = the Netherlands)					0,080
<i>Indonesia/Moluccas</i>	-0,822	-0,834	-0,851	-0,824	
<i>Turkey/Morocco</i>	-0,392	-0,155	-0,162	-0,149	
<i>Suriname</i>	-1,457	-1,453	-1,466	-1,441	
<i>Antilles/Aruba</i>	1,103	1,382	1,402	1,368	
<i>Europe</i>	-0,387	-0,336	-0,336	-0,351	
<i>Other</i>	-0,261	-0,297	-0,288	-0,307	
Country of Origin Father (ref = the Netherlands)					0,096
<i>Indonesia/Moluccas</i>	0,552	0,644	0,638	0,654	
<i>Turkey/Morocco</i>	1,330	1,421	1,419	1,441	
<i>Suriname</i>	0,460	0,439	0,466	0,443	

<i>Antilles/Aruba</i>	-0,867	-1,084	-1,097	-1,090
<i>Europe</i>	-0,077	-0,132	-0,124	-0,126
<i>Other</i>	0,994	1,010	1,013	1,004
Country of Origin				0,070
Mother				
(ref = the Netherlands)				
<i>Indonesia/Moluccas</i>	-0,141	-0,199	-0,193	-0,205
<i>Turkey/Morocco</i>	-0,399	-0,554	-0,555	-0,573
<i>Suriname</i>	0,087	0,209	0,208	0,195
<i>Antilles/Aruba</i>	-1,406	-1,417	-1,419	-1,417
<i>Europe</i>	0,563	0,588	0,579	0,595
<i>Other</i>	-0,350	-0,230	-0,237	-0,223

Source: FNB 2017/2018, N=1857

* p < 0,05; ** p < 0,01; *** p < 0,001

Table 3. Process Macro

	<i>Total effect</i>	<i>Direct effect</i>	<i>Indirect effect</i>
Literary Involvement	0,1654*	0,1485*	0,0169*
(SES mother)			
Literary Involvement	0,1668*	0,1516*	0,0153*
(SES father)			
Cultural Involvement	0,1567*	0,1485*	0,0123*
(SES mother)			
Cultural Involvement	0,1592*	0,1516*	0,0076*
(SES father)			

Source: FNB 2017/2018, N=1857

* p < 0,05

Table 4. Coding Educational Level to Years of Education Father and Mother

	<i>Educational Years</i>
No Completed Education	0
Primary School	6
VMBO/LBO/MULO/ULO/MAVO	12
HAVO/VWO	13
MBO	16
HBO	17
University	17

Table 5. Frequencytable Socio-Economic Status Father

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
0	81	4,4	4,4
8	406	21,9	26,2
12	655	35,3	61,5
13	68	3,7	65,2
16	226	12,2	77,3
17	421	22,7	100,0

Source: FNB 2017/2018, N=1857

Table 6. Frequencytable Socio-Economic Status Mother

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
0	96	5,2	5,2
8	516	27,8	33,0
12	773	41,6	74,6
13	53	2,9	77,4
16	197	10,6	88,0
17	222	12,0	100,0

Source: FNB 2017/2018, N=1857

Table 7. Correlation Parental Literary Involvement

	<i>"My parents read to me when I was a preschooler."</i>	<i>"I was given books on my birthday/Christmas/Saint Nicholas."</i>	<i>"In my family, we talked about the books that I read."</i>	<i>"My parents were interested in what I read."</i>
<i>"My parents read to me when I was a preschooler."</i>	1	0,482	0,566	0,583
<i>"I was given books on my birthday/Christmas/Saint Nicholas."</i>	0,482	1	0,574	0,531
<i>"In my family, we talked about the books that I read."</i>	0,566	0,571	1	0,770
<i>"My parents were interested in what I read."</i>	0,583	0,531	0,770	1

Source: FNB 2017/2018, N=1857

Table 8. Factor Analysis Parental Literary Involvement

	<i>Communalities</i>	<i>Factor</i>
"My parents read to me when I was a preschooler."	0,398	0,680
"I was given books on my birthday/Christmas/Saint Nicholas."	0,374	0,656
"In my family, we talked about the books that I read."	0,641	0,873
"My parents were interested in what I read."	0,630	0,857
The Initial Eigenvalue	2,763	

Source: FNB 2017/2018, N=1857

Table 9. Reliability Analysis Parental Literary Involvement

	<i>Cronbach's Alpha when deleting item</i>
"My parents read to me when I was a preschooler."	0,835
"I was given books on my birthday/Christmas/Saint Nicholas."	0,842
"In my family, we talked about the books that I read."	0,773
"My parents were interested in what I read."	0,779
Cronbach's Alpha	0,850

Source: FNB 2017/2018, N=1857

Table 10. Frequencytable Parental Literary Involvement

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
1,00	105	5,7	5,7
1,25	138	7,4	13,1
1,50	234	12,6	25,7
1,75	216	11,6	37,3
2,00	261	14,1	51,4
2,25	267	14,4	65,8
2,50	243	13,1	78,8
2,75	154	8,3	87,1
3,00	239	12,9	100,0

Source: FNB 2017/2018, N=1857

Table 11. Correlation Parental Cultural Involvement

	<i>Attending classical concerts, opera and ballet</i>	<i>Visiting art museums</i>	<i>Attending serious theater performances</i>
<i>Attending classical concerts, opera and ballet</i>	1	0,438	0,598
<i>Visiting art museums</i>	0,438	1	0,498
<i>Attending serious theater performances</i>	0,598	0,498	1

Source: FNB 2017/2018, N=1857

Table 12. Factor Analysis Parental Cultural Involvement

	<i>Communalities</i>	<i>Factor</i>
<i>Attending classical concerts, opera and ballet</i>	0,589	0,819
<i>Visiting art museums</i>	0,387	0,658
<i>Attending serious theater performances</i>	0,638	0,930
The Initial Eigenvalue	2,279	

Source: FNB 2017/2018, N=1857

Table 13. Reliability Analysis Parental Cultural Involvement

	<i>Cronbach's Alpha when deleting item</i>
<i>Attending classical concerts, opera and ballet</i>	0,758
<i>Visiting art museums</i>	0,865
<i>Attending serious theater performances</i>	0,699
Cronbach's Alpha	0,838

Source: FNB 2017/2018, N=1857

Table 14. Frequencytable Parental Cultural Involvement

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
1	1217	65,5	65,5
1,33	60	3,2	68,8
1,67	45	2,4	71,2
2	458	24,7	95,9
2,33	34	1,8	97,7
2,67	14	0,8	98,4
3	20	1,1	99,5
3,33	4	0,2	99,7
4	6	0,3	100,0

Source: FNB 2017/2018, N=1857

Table 15. Correlation Parental Emotional Involvement

	<i>“When I came home, my parents always asked what I had done that day.”</i>	<i>“Whenever I was having a hard time, my parents would try to comfort me.”</i>	<i>"Whenever I did something and it worked out well, my parents were proud of me."</i>	<i>“By both words and deeds, my parents let me know that they loved me.”</i>
<i>“When I came home, my parents always asked what I had done that day.”</i>	1	0,551	0,473	0,440
<i>“Whenever I was having a hard time, my parents would try to comfort me.”</i>	0,551	1	0,666	0,658
<i>"Whenever I did something and it worked out well, my parents were proud of me."</i>	0,473	0,666	1	0,655
<i>“By both words and deeds, my</i>	0,440	0,658	0,655	1

*parents let me
know that they
loved me.”*

Source: FNB 2017/2018, N=1857

Table 16. Factor Analysis Parental Emotional Involvement

	<i>Communalities</i>	<i>Factor</i>
<i>“When I came home, my parents always asked what I had done that day.”</i>	0,326	0,602
<i>“Whenever I was having a hard time, my parents would try to comfort me.”</i>	0,576	0,854
<i>“Whenever I did something and it worked out well, my parents were proud of me.”</i>	0,535	0,803
<i>“By both words and deeds, my parents let me know that they loved me.”</i>	0,519	0,779
The Initial Eigenvalue	2,732	

Source: FNB 2017/2018, N=1857

Table 17. Reliability Analysis Parental Emotional Involvement

	<i>Cronbach's Alpha when deleting item</i>
"When I came home, my parents always asked what I had done that day."	0,851
"Whenever I was having a hard time, my parents would try to comfort me."	0,762
"Whenever I did something and it worked out well, my parents were proud of me."	0,785
"By both words and deeds, my parents let me know that they loved me."	0,793
Cronbach's Alpha	0,841

Source: FNB 2017/2018, N=1857

Table 18. Frequencytable Parental Emotional Involvement (rounded)

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
1	32	1,7	1,7
2	107	5,8	7,5
3	374	20,1	27,6
4	822	44,3	71,9
5	522	28,1	100,0

Source: FNB 2017/2018, N=1857

Table 19. Coding Educational Level to Years of Education

<i>Educational Years</i>

No Education	0
Did not finish Primary School	0
Primary School	6
Lower and Higher Special Needs Education	6
VGLO	8
LBO	10
Lower Technical/Housekeeping/Industry School	10
MULO, ULO, Mavo	10
VMBO	10
MMS	9
HBS	9
Havo	11
VWO	12
Gymnasium/Atheneum/Lyceum	12
KMBO	12
MBO-BOL	12
MBO-BBL	12
MBO-Plus	12
HBO	15
Teacher Training College	15
Conservatory/Art School	15
Scientific Education Bachelor	15
Scientific Education Master	16
PhD	19

Table 20. Educational Attainment

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
0	11	0,6	0,6

6	28	1,5	2,1
8	11	0,6	2,7
9	37	2,0	4,7
10	407	21,9	26,6
11	90	4,8	31,4
12	473	25,5	56,9
15	546	29,4	86,3
16	233	12,5	98,9
19	21	1,1	100,0

Source: FNB 2017/2018, N=1857

Table 21. Frequencytable Year of Birth (rounded)

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
1940-1950	318	17,1	17,1
1951-1960	541	29,1	46,3
1961-1970	377	20,3	66,6
1971-1980	309	16,6	83,2
1981-1990	241	13,0	96,2
1991-2000	71	3,8	100,0

Source: FNB 2017/2018, N=1857

Table 22. Frequencytable Gender

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
Male	865	46,6	46,6
Female	992	53,4	100,0

Source: FNB 2017/2018, N=1857

Table 23. Frequencytable Country of Origin

	<i>Frequency</i>	<i>Percentage</i>
The Netherlands	1698	8,6
Indonesia/Moluccas	11	0,6

Turkey/Morocco	15	0,8
Suriname	23	1,2
Netherlands Antilles/Aruba	12	0,6
Europe	51	2,7
Missing	47	2,5

Source: FNB 2017/2018, N=1857

Table 24. Frequencytable Country of Origin of the Father

	<i>Frequency</i>	<i>Percentage</i>
The Netherlands	1636	88,1
Indonesia/Moluccas	36	1,9
Turkey/Morocco	21	1,1
Suriname	34	1,8
Netherlands Antilles/Aruba	12	0,6
Europe	73	3,9
Missing	45	2,4

Source: FNB 2017/2018, N=1857

Table 25. Frequencytable Country of Origin of the Mother

	<i>Frequency</i>	<i>Percentage</i>
The Netherlands	1613	86,9
Indonesia/Moluccas	41	2,2
Turkey/Morocco	22	1,2
Suriname	37	2,0
Netherlands Antilles/Aruba	11	0,6
Europe	84	4,5
Missing	49	2,6

Source: FNB 2017/2018, N=1857

Table 26. Frequencytable Health Status of the Father during Youth

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
1	58	3,1	3,1
2	237	12,8	15,9
3	889	47,9	63,8
4	415	22,3	86,1
5	258	13,9	100,0

Source: FNB 2017/2018, N=1857

Table 27. Frequencytable Health Status of the Mother during Youth

	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
1	34	1,8	1,8
2	202	10,9	12,7
3	946	50,9	63,7
4	431	23,2	86,9
5	244	13,1	100,0

Source: FNB 2017/2018, N=1857

Table 28. Lineair Regression Analysis R^2

	R^2
Model 1	0,195
Model 2	0,213
Model 3	0,213
Model 4	0,213

Source: FNB 2017/2018, N=1857

6.3 Syntax

Encoding: UTF-8.

**merging datasets.*

```
DATASET ACTIVATE DataSet1.  
SORT CASES BY nomem_encr.  
DATASET ACTIVATE DataSet2.  
SORT CASES BY nomem_encr.  
DATASET ACTIVATE DataSet1.  
MATCH FILES /FILE=  
/FILE='DataSet2'  
/BY nomem_encr.  
EXECUTE.
```

```
SORT CASES BY nomem_encr.
```

Encoding: UTF-8. DATASET ACTIVATE DataSet1.

**selection respondents.*

```
USE ALL.  
COMPUTE filter_$=(ox17a002<=1993).  
VARIABLE LABELS filter_$ 'ox17a002<=1993 (FILTER)'.  
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.  
FORMATS filter_$ (f1.0).  
FILTER BY filter_$.  
EXECUTE.
```

```
RENAME VARIABLES (ox17a002 = birye).
```

**datapreperation: parental socio-economic status.*

```
RECODE oz18a269 (1=0) (2=8) (3=12) (4=13) (5=16) (6=17) (7=17) (8=SYSMIS) INTO SESf.  
EXECUTE.
```

```
RECODE oz18a271 (1=0) (2=8) (3=12) (4=13) (5=16) (6=17) (7=17) (8=SYSMIS) INTO SESm.  
EXECUTE.
```

```
SELECT IF (not missing(SESf)).  
SELECT IF (not missing(SESm)).
```

**datapreperation: parental literary involvement.*

COR oz18a294 oz18a295 oz18a296 oz18a297.

IF (missing(oz18a294)) oz18a294=oz18a297.

IF (missing(oz18a295)) oz18a295=oz18a296.

IF (missing(oz18a296)) oz18a296=oz18a297.

IF (missing(oz18a297)) oz18a297=oz18a296.

EXECUTE.

FACTOR

/VARIABLES oz18a294 oz18a295 oz18a296 oz18a297

/MISSING LISTWISE

/ANALYSIS oz18a294 oz18a295 oz18a296 oz18a297

/PRINT INITIAL CORRELATION EXTRACTION ROTATION

/PLOT EIGEN

/CRITERIA MINEIGEN(1) ITERATE(25)

/EXTRACTION PAF

/CRITERIA ITERATE(25) DELTA(0)

/ROTATION OBLIMIN

/METHOD=CORRELATION.

RELIABILITY

/VARIABLES= oz18a294 oz18a295 oz18a296 oz18a297

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=SCALE CORR

/SUMMARY=TOTAL.

COMPUTE litinv=MEAN.3(oz18a294, oz18a295, oz18a296, oz18a297).

EXECUTE.

SELECT IF (not missing(litinv)).

VALUE LABELS litinv 1 'little involvement' 3 'much involvement'.

**datapreperation: parental cultural involvement.*

COR oz18a291 oz18a292 oz18a293.

IF (missing(oz18a291)) oz18a291=oz18a293.

```
IF (missing(oz18a292)) oz18a292=oz18a293.  
IF (missing(oz18a293)) oz18a293=oz18a291.  
EXECUTE.
```

```
FACTOR  
/VARIABLES oz18a291 oz18a292 oz18a293  
/MISSING LISTWISE  
/ANALYSIS oz18a291 oz18a292 oz18a293  
/PRINT INITIAL CORRELATION EXTRACTION ROTATION  
/PLOT EIGEN  
/CRITERIA MINEIGEN(1) ITERATE(25)  
/EXTRACTION PAF  
/CRITERIA ITERATE(25) DELTA(0)  
/ROTATION OBLIMIN  
/METHOD=CORRELATION.
```

```
RELIABILITY  
/VARIABLES= oz18a291 oz18a292 oz18a293  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/STATISTICS=SCALE CORR  
/SUMMARY=TOTAL.  
COMPUTE culin=MEAN(oz18a291, oz18a292, oz18a293).  
EXECUTE.
```

```
RECODE culin (SYSMIS=1) (ELSE=Copy) INTO culiniv.  
EXECUTE.
```

```
VALUE LABELS culiniv 1 'little involvement' 4 'much involvement'.
```

**datapreperation: parental emotional involvement.*

```
COR oz18a308 oz18a309 oz18a311 oz18a314
```

```
IF (missing(oz18a308)) oz18a308=oz18a309.  
IF (missing(oz18a309)) oz18a309=oz18a311.  
IF (missing(oz18a311)) oz18a311=oz18a309.  
IF (missing(oz18a314)) oz18a314=oz18a309.  
EXECUTE.
```

FACTOR

/VARIABLES oz18a308 oz18a309 oz18a311 oz18a314

/MISSING LISTWISE

/ANALYSIS oz18a308 oz18a309 oz18a311 oz18a314

/PRINT INITIAL CORRELATION EXTRACTION ROTATION

/PLOT EIGEN

/CRITERIA MINEIGEN(1) ITERATE(25)

/EXTRACTION PAF

/CRITERIA ITERATE(25) DELTA(0)

/ROTATION OBLIMIN

/METHOD=CORRELATION.

RELIABILITY

/VARIABLES= oz18a308 oz18a309 oz18a311 oz18a314

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=SCALE CORR

/SUMMARY=TOTAL.

COMPUTE emoinv=MEAN.3(oz18a308, oz18a309, oz18a311, oz18a314).

EXECUTE.

SELECT IF (not missing(emoinv)).

VALUE LABELS emoinv 1 'little involvement' 5 'much involvement'.

RECODE emoinv (1 thru 1.5=1) (1.6 thru 2.4=2) (2.5 thru 3.4=3) (3.5 thru 4.4=4) (4.5 thru Highest=5)

INTO emoinv_rounded.

EXECUTE.

**datapreparation: educational attainment.*

RECODE ox17a079 (1 thru 2=0) (3 thru 4=6) (5=8) (6 thru 10=10) (11 thru 12=9) (13=11) (14 thru 19=12) (20 thru 23=15) (24=16) (25=15) (26=16) (27=19) INTO edueyears.

EXECUTE.

SELECT IF (not missing(edueyears)).

**datapreparation year of birth.*

```
RECODE birye (1946 thru 1950=1) (1951 thru 1960=2) (1961 thru 1970=3) (1971 thru 1980=4) (1981 thru 1990=5) (1991 thru 1993=6) INTO biryear.  
EXECUTE.
```

```
VALUE LABELS biryear 1 '1940-1950' 2 '1951-1960' 3 '1961-1970' 4 '1971-1980' 5 '1981-1990' 6 '1991-2000'.
```

**datapreparation gender.*

```
RENAME VARIABLES (ox17a001=gender).
```

```
RECODE gender (1=1) (else=0) into male.  
RECODE gender (2=1) (else=0) into female.
```

**datapreparation country of origin.*

```
RECODE ox17a063 (1=1) (else=0) into Neth.  
RECODE ox17a063 (2=1) (else=0) into InMo.  
RECODE ox17a063 (3=1) (4=1) (else=0) into Turmo.  
RECODE ox17a063 (5=1) (else=0) into Suri.  
RECODE ox17a063 (6=1) (else=0) into AntAru.  
RECODE ox17a063 (7=1) (8=1) (9=1) (else=0) into Eu.  
RECODE ox17a063 (10=1) (else=0) into Mis_C.
```

**datapreparation country of origin of the father.*

```
RECODE ox17a066 (1=1) (else=0) into Neth_F.  
RECODE ox17a066 (2=1) (else=0) into InMo_F.  
RECODE ox17a066 (3=1) (4=1) (else=0) into Turmo_F.  
RECODE ox17a066 (5=1) (else=0) into Suri_F.  
RECODE ox17a066 (6=1) (else=0) into AntAru_F.  
RECODE ox17a066 (7=1) (8=1) (9=1) (else=0) into Eu_F.  
RECODE ox17a066 (10=1) (else=0) into Mis_F.
```

**datapreparation country of origin of the mother.*

```
RECODE ox17a068 (1=1) (else=0) into Neth_M.  
RECODE ox17a068 (2=1) (else=0) into InMo_M.  
RECODE ox17a068 (3=1) (4=1) (else=0) into Turmo_M.  
RECODE ox17a068 (5=1) (else=0) into Suri_M.  
RECODE ox17a068 (6=1) (else=0) into AntAru_M.  
RECODE ox17a068 (7=1) (8=1) (9=1) (else=0) into Eu_M.  
RECODE ox17a068 (10=1) (else=0) into Mis_M.
```

**datapreparation health status of the father during the youth.*

SELECT IF (not missing(oz18a300)).

RENAME VARIABLES (oz18a300 = fahealth).

**datapreparation health status of the mother during the youth.*

SELECT IF (not missing(oz18a301)).

RENAME VARIABLES (oz18a301 = mohealth).

**frequency tables.*

FREQUENCIES VARIABLES=SESf SESm litinv culinv emoinv_rounded edueyears male female
fahealth mohealth edueyears birye neth inmo turmo suri antaru eu mis_c neth_f inmo_f turmo_f suri_f
antaru_f eu_f mis_f neth_m inmo_m turmo_m suri_m antaru_m eu_m mis_m
/STATISTICS=MINIMUM MAXIMUM MEAN STDDEV
/ORDER=ANALYSIS

**interaction term moderation variable.*

```
COMPUTE interaction_lit=emoinv * litinv.  
EXECUTE.
```

```
COMPUTE interaction_cul=emoinv * culinv.  
EXECUTE.
```

**regressionanalysis Model 1.*

```
REGRESSION  
/MISSING LISTWISE  
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT eduyears  
/METHOD=ENTER SESf SESm emoinv birye female fahealth mohealth InMo Turmo Suri AntAru Eu  
Mis_C InMo_F Turmo_F Suri_F AntAru_F Eu_F Mis_F InMo_M Turmo_M Suri_M AntAru_M  
Eu_M Mis_M.
```

**regressionanalysis Model 2.*

```
REGRESSION  
/MISSING LISTWISE  
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT eduyears  
/METHOD=ENTER SESf SESm litinv culinv interaction_lit birye female fahealth mohealth InMo  
Turmo Suri AntAru Eu Mis_C InMo_F Turmo_F Suri_F AntAru_F Eu_F Mis_F InMo_M Turmo_M  
Suri_M AntAru_M Eu_M Mis_M.
```

**regressieanalysis Model 3.*

```
REGRESSION  
/MISSING LISTWISE  
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT eduyears
```

```
/METHOD=ENTER SESf SESm litinv culinv interaction_cul birye female fahealth mohealth InMo
Turmo Suri AntAru Eu Mis_C InMo_F Turmo_F Suri_F AntAru_F Eu_F Mis_F InMo_M Turmo_M
Suri_M AntAru_M Eu_M Mis_M.
```

**regressieanalyse Model 4.*

```
REGRESSION
```

```
/MISSING LISTWISE
```

```
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE
```

```
/CRITERIA=PIN(.05) POUT(.10)
```

```
/NOORIGIN
```

```
/DEPENDENT eduyears
```

```
/METHOD=ENTER SESf SESm litinv culinv emoinv birye female fahealth mohealth InMo Turmo
Suri AntAru Eu Mis_C InMo_F Turmo_F Suri_F AntAru_F Eu_F Mis_F InMo_M Turmo_M Suri_M
AntAru_M Eu_M Mis_M.
```

**sheaf variables.*

Compute CO_sh = (-0.798) * InMo + (-0.122) * TurMo + (-1.384) * Suri + (1.405) * AntAru + (-0.376) * Eu + (-0.315) * Mis_C.

Compute COF_sh = (0.632) * InMo_F + (1.453) * Turmo_F + (0.400) * Suri_F + (-1.148) * AntAru_F + (-0.132) * Eu_F + (1.012) * Mis_F.

Compute COM_sh = (-0.199) * InMo_M + (-0.612) * Turmo_M + (0.196) * Suri_M + (-1.361) * AntAru_M + (0.601) * Eu_M + (-0.200) * Mis_M.

```
REGRESSION
```

```
/MISSING LISTWISE
```

```
/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE
```

```
/CRITERIA=PIN(.05) POUT(.10)
```

```
/NOORIGIN
```

```
/DEPENDENT eduyears
```

```
/METHOD=ENTER SESf SESm litinv culinv emoinv birye female fahealth mohealth CO_sh COF_sh
COM_sh.
```

6.4 Privacy and Ethics Checklist

CHECKLIST ETHICAL AND PRIVACY ASPECTS OF RESEARCH

PART I: General Information

Project title: The effects of parental educational involvement

Name, email of student: Fleur Vergeer, 743928fv@eur.nl

Name, email of supervisor: Michael Giffin, giffin@essb.eur.nl

Start date and duration: 10-02-2025 / 31-08-2025

Is the research study conducted within DPAS
YES - NO

PART II: Human Subjects

1. Does your research involve human participants? YES - NO
2. Does your research involve field observations without manipulations that will not involve identification of participants. YES - NO
3. Research involving completely anonymous data files (secondary data that has been anonymized by someone else). YES - NO

PART IV: Sample

Where will you collect or obtain your data?

I obtained my data via the LISS Data Archive.

What is the (anticipated) size of your sample?

The anticipated size of my sample is 3165 respondents.

What is the size of the population from which you will sample?

The population from which the sample is taken consists of all Dutch citizens aged between 18 and 70 years old, with a maximum of one person per household. In total, the survey was presented to 4162 respondents.

Part V: Data storage and backup

Where and when will you store your data in the short term, after acquisition?

I will store the digital data file of my SPSS-dataset in a separate file on my laptop via OneDrive.

Who is responsible for the immediate day-to-day management, storage and backup of the data arising from your research?

I am responsible for the immediate day-to-day management, storage and backup of the data arising from my research.

How (frequently) will you back-up your research data for short-term data security?

I will back-up my research data on a weekly basis.

In case of collecting personal data how will you anonymize the data?

There will be no personal data.

PART VI: Signature

Please note that it is your responsibility to follow the ethical guidelines in the conduct of your study. This includes providing information to participants about the study and ensuring confidentiality in storage and use of personal data. Treat participants respectfully, be on time at appointments, call participants when they have signed up for your study and fulfil promises made to participants.

Furthermore, it is your responsibility that data are authentic, of high quality and properly stored. The principle is always that the supervisor (or strictly speaking the Erasmus University Rotterdam) remains owner of the data, and that the student should therefore hand over all data to the supervisor.

Hereby I declare that the study will be conducted in accordance with the ethical guidelines of the Department of Public Administration and Sociology at Erasmus University Rotterdam. I have answered the questions truthfully.

Name student: Fleur Vergeer

Name (EUR) supervisor: Michael Giffin

Date: 23-03-2025

Date: 23-03-2025

A handwritten signature in black ink, appearing to be 'Fleur Vergeer', with a stylized 'F' and a checkmark-like flourish.A handwritten signature in black ink, appearing to be 'Michael Giffin', with a complex, cursive style.