KU LEUVEN

FACULTEIT SOCIALE WETENSCHAPPEN

Civic engagement among adolescents.

The role of parents, teachers, and schools as political socialisation agents in a globalised world.

Sari Verachtert

Proefschrift aangeboden tot het verkrijgen van de graad van Doctor in de Sociale Wetenschappen

Promotor: Prof. Dr. Marc Hooghe

Onderzoekseenheid: Centrum voor Politicologie

2023

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In this first chapter, after a short introduction and an overview of the different empirical chapters, I briefly define the main concepts that are part of this dissertation. Second, I present political socialisation as a theoretical framework to explain the political development of adolescents. In line with the focus of the different research questions, I approach this theory by looking at the role of parents and schools as important socialisation agents for developmental influences. Next, I present a visualisation of the conceptual framework that guides this dissertation. By doing so, all the integrated concepts of this dissertation are brought together. Furthermore, I discuss the existing literature and address several important gaps in the literature related to this dissertation. Finally, I conclude this first chapter by providing the reader with more information about citizenship education and education for sustainable development in the Flemish education system and the two case studies used in the dissertation.

Chapter 1. General introduction

We are currently faced with some global environmental, socio-political, and economic challenges and tensions including climate change and environmental degradation, social injustice, economic inequality, and the increase in migration between countries to name but a few. Additionally, the COVID-19 pandemic and the ongoing war in Ukraine demonstrate the complex, unpredictable, and uncertain times we live in which pose a threat on our core values of democracy (European Commission/EACEA/Eurydice, 2016; Maaß et al., 2022). These multiple challenges and social changes are expected to influence the socio-political attitudes and behaviour – both among adults but particularly among young people (Hooghe, 2004).[1] Although political development is a lifelong process, the aging stability hypothesis states that the impact is rather limited for adults since their initial democratic orientations are developed throughout the early years and remain relatively stable during life course (Alwin & Krosnick, 1991; Sears & Funk, 1999). Following the impressionable years hypothesis, the impact might be stronger for younger cohorts who experience these challenges early in life, during the so-called formative years (Alwin, Cohen, & Newcomb, 1991; Hooghe & Wilkenfeld, 2008). During this particularly critical period ranging between childhood and adulthood (Neundorf et al., 2013), young people are viewed as sensitive to tensions and dilemmas in broader societal and global issues and to influences from various potential socialisation agents such as the family, the school, peers as well as the media for developing their political attitudes and behaviour (Flanagan, 2013; Neundorf & Smets, 2017). During the past decades, these two closely related perspectives has received attention from various fields such as political science, sociology, and developmental psychology which has led to a substantial amount of political socialisation studies focusing on youth's socio-political attitudinal and behavioural development (Galston, 2001; Sherrod, Torney-Purta, & Flanagan, 2010).

A primary concern in the field of political science - which has received remarkable research attention – is the downward trend in political participation in most Western democratic societies, especially among the younger generations, in terms of voting and party membership, which are regarded as necessary preconditions for a successful democracy (Almond & Verba, 1963; Sherrod, Flanagan, & Youniss, 2002). In 'Bowling Alone' by Putnam (2000), it was already shown that there was a decline in political engagement among youth. More specifically, he stated that the younger generation were less critical and politically engaged compared to the older generations. More recent youth studies have also

[1] The definition of young people including adolescents differs in research and within the literature there is no real consensus on the age group (Pickard, 2019; Sherrod, Torney-Purta, & Flanagan, 2010). Although the adolescents in the case study included in Chapter 4 and 5 are specifically situated in the age category from 10 to 14 years old, the terms 'young people', '(young) adolescents', 'youth', 'pupils' and 'students', are used broadly and interchangeably throughout this dissertation and include generally people under 18 years old, based on the classification of Jekielek and Brown (2005) where 'young adulthood' comprises people aged 18 to 24 years old.

identified the gap in political participation between adolescents and adults with the youth scoring lower in almost every domain (Dalton, 2008; Sloam, 2014; Stoker, 2006), portraying young people as politically disengaged and 'apathetic' (Cammaerts et al., 2014; Theocharis & van Deth, 2018). There is still uncertainty and disagreement, however, how exactly this gap among different age cohorts develops (Hooghe, 2004; Dinas, 2013). In general, there are three theoretical arguments currently being adopted in research. First, the life-cycle or age approach assumes differences between the political participation of adolescents and adults (Weiss, 2020). This approach suggests a curvilinear pattern by age where participation increases from adolescence until adulthood and decreases again among older people (Jennings, 1979; Neundorf & Smets, 2017). Another approach is the generational or cohort effect (Jennings, 1984), which is based on the assumption that 'members of a cohort are affected by the ambient environment in which they are politically socialised' (Pickard, 2019, p. 12). Third, contrary to the rather pessimistic views of disengagement towards traditional and formal politics, several authors argue that the younger generation prefer other and more "critical" forms of political participation and civic engagement compared to older generations. There is indeed a growing body of literature that recognises the expansion of new forms of political participation, as young citizens[2] continue to find new ways of becoming engaged, involving issues such as the environment, poverty, human rights, income inequalities, gender equality, and tolerance (Inglehart & Norris, 2003; Norris, 2002; Torney-Purta, 2009; Zukin et al., 2006). As a consequence, some authors emphasize the need for research to expand the too narrow conceptualisation of youth political participation and civic engagement to more informative and alternative forms of participation (Dalton, 2008; van Deth, 2014). Following Pickard for instance (2019), young people's engagement in the 21st century is increasing and diversifying due to greater connection through digital technologies and the rise of globalisation. Furthermore, it has been argued that we need more research into how young people themselves interpret and understand political participation (O'Toole et al., 2003). Although the latter has been addressed a while ago, wide agreement exists among more recent authors as well (Weiss, 2020).

It is well established from the current state of research that adolescence constitutes an important phase to develop the basis of key political attitudes and behaviour (Flanagan, 2013; Rekker et al., 2015). The concerns about adolescents' lack of democratic engagement and its ramifications for democracy (Bougher, 2018) had led to a renewed interest in empirical political socialisation studies to fully understand the broader formation of engaged citizenship in the context of a rapidly changing society.

[2] Research findings imply that political attitudes and preferences are already developed quite early in life and seem to be deeply embedded among adolescents (Hess & Torney-Purta, 1967; Hooghe & Wilkenfeld, 2008). As a result, there is a growing recognition among scholars to better understand civic engagement and socialisation experiences among the younger generations including childhood and early adolescence (Astuto & Ruck, 2010; Sherrod, Flanagan, & Youniss, 2002). As Torney-Purta and Amadeo (2011) argue, the critical period for the development of civic competences starts from the age of 10. This makes the age group central to this dissertation suitable and necessary.

This dissertation seeks to expand this field of research in several ways – as further explained below. The *overall objective* of this dissertation is to contribute to the ongoing literature in the political science discipline about the formation of youths' political participation and civic engagement by looking at the mechanisms of political socialisation. Given the importance of parents and schools as socialisation agents in the democratic development of adolescents, I will shed light on their specific potential impact in the context of the current sustainable development challenges. Furthermore, I will look at how political attitudes manifest in teachers as role models and how they implement an open classroom climate as a socialisation practice to promote civic engagement in youth.

When investigating socialisation agents, it is important to note that the everyday experiences of young people within the family – and those within the schools, cannot be isolated from the socialisation function of other actors (Amnå, 2012). Several other agents such as neighbourhoods, peers, and the media influence the attitudinal and behavioural development of young people. In line with the increasing popularity of the internet, the media expecting to increase the (online) political engagement among young people, may well have been the political socialisation agent that has been discussed most often over the past years (McLeod, 2000; Quintelier, 2015). Other actors in the socialisation process also have an essential role. For instance, the social influence from the family often decrease during adolescence while peer groups become more influential for political socialisation (Dostie-Goulet, 2009). While all these socialisation agents are important and future research in the context of youth development is recommended, it falls outside the scope of the current dissertation to investigate the impact of neighbourhoods, media or peers on youth' development with regard to civic engagement. Furthermore, it should be pointed out that most civic engagement research focuses on future political participation. Rather, following some other authors (Andersson, 2015; Biesta & Lawy, 2006; Biesta, 2007; Biesta, Lawy, & Kelly, 2009), I argue that young people become already citizens at an early age. They interact and participate within different social contexts such as family, peer group, school, sports club and community and have already – to some extent – possibilities to engage in authentic various forms of social and political activities.

1.1 Outline of the dissertation

This dissertation is organised in *four parts* and consists of a collection of *seven empirical chapters*. All the chapters aim to contribute to answer the overarching research objective as introduced above and fit into the theoretical framework of political socialisation. The empirical chapters stand on their own and can be read independently and have their own specific research questions and gaps. This might sometimes imply a repetition of theoretical arguments across the different chapters. Furthermore, the chapters are all empirical in nature and are based on quantitative analyses of own collected data, with a single exception of Chapter 2, in which I make use of the ESS (2016) data situated in the broader European context. Geographically, the Flemish context (Dutch-speaking part of Belgium) is the main

area of research in this dissertation. In what follows, I outline a short overview of the seven chapters, guided by a conceptual visualisation (Figure 1.1) in line with the specific research questions.

1.1.1 Overview of the different chapters included in the dissertation

The different empirical chapters included in this dissertation are guided by *four main research goals* and several *research questions*. The *first part* of this dissertation, including two chapters (Chapter 2 and Chapter 3), will serve as an introduction for the subsequent chapters. In the first part, I will analyse relevant individual and contextual determinants of attitudes and behaviour related to environmental issues such as climate change. Due to the central role of the development of attitudes and behaviour throughout this dissertation, these first two chapters set out the stage of the dissertation. Based on the traditional Theory of Reasoned Action and Learning (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and the Theory of Planned Behaviour (Ajzen, 1991), there is a general agreement that attitudes are an essential condition to maintain in the development of behaviour. 'Attitudes have been, and remain, a crucial concept in social psychology theory, and the Fishbein/Ajzen model is commonly used to explain causal relationships between attitudes and behaviour' (Duarte, Escario, & Sanagustin, 2017, p. 25). The Theory of Planned Behaviour also suggests that behavioural intention can predict actual behaviour as well (Liu, Teng, & Han, 2020). Ever since, these approaches have been applied to a large variety of contexts (Oreg & Katz-Gerro, 2006). A similar interpretation in the relationship between attitudes and behaviour is often presumed by authors in the field of political science. Some studies have indeed shown that political attitudes are considered as important prerequisites for democratic citizenship and participation (Almond & Verba, 1989; Verba, Schlozman, & Brady, 1995). However, the study of Quintelier and van Deth (2014) for instance shows that political attitudes do not necessarily lead to political participation. Similarly, in environmental research, the link between attitudes and behaviour has sometimes been questioned in the literature and is subject of scholarly discussion (Juvan & Dolnicar, 2014; Kennedy et al., 2009). Therefore, in **Chapter 2**, I will add to the further investigation of the development of attitudes and behaviour with regard to environmental issues, and more precisely with regard to household[3] energy use. One of the limitations of earlier studies specifically focusing on household energy use as a form of environmentally friendly behaviour is that they have typically been restricted to a particular set of variables like income, household size, and other structural factors while neglecting attitudinal determinants (Enzler & Diekmann, 2019). Therefore, the research question which guides this investigation is as follows: *Whether, and if so, to what extent climate change attitudes and more specifically concern, responsibility, and awareness about climate change are associated with household energy use of Europeans, independent of the country of residence?* Consequently, cross-country European Social Survey data (ESS, 2016) were applied to allow for a broader and more complete understanding.

[3] Within this dissertation, the term 'household' has sometimes been used as a replacement for 'family'.

In the last decades, it became clear that the increase in climate change and environmental degradation as global problems should be taken seriously (IPCC, 2014, 2021). Notwithstanding, given the current international policy-making, it will be a challenge for the countries who agreed on the international Paris Agreement to keep the global temperature rise below 2 degrees (Crawley, Coffé, & Chapman, 2020). This pessimistic perspective was also reflected in the recently organised COP27 in Sharm el-Sheikh, which took little further steps to mitigate the extent of climate change (Obergassel, Hermwille, & Oberthür, 2021). In most liberal democracies public opinion often plays a role in the adopted climate policies (Burstein, 2003; Tjernström & Tietenberg, 2008). Indeed, government parties are more likely to act when the public is not only concerned but also see it as a highly salient and important topic. As a consequence, it is relevant to capture the dynamic nature of public opinion on environmental issues including the priority of climate change. In the study in **Chapter 3,** I will examine the level of attention on environmental issues and how it contributes to the broader theoretical development of issue salience within the context of an external major life event; the COVID-19 pandemic. More specifically, as a second research question, I will investigate *whether the overall salience of environmental issues among the public varies during an extraordinary life event like the COVID-19 pandemic*. The assumption is that the pandemic is likely to degrade the salience of climate change and the environment due to the priority for two issues that were prominent during the pandemic: health and the economy.

The risks posed by the increasing environmental issues and climate change with its role of human influence are a serious problem for our world (IPCC, 2021). In contrast to earlier studies, few people currently deny the urgency of embracing sustainable ways of living (Goldman, Pe'er, & Yavetz, 2017). Ensuring a sustainable and better future for all requires a shift in the attitudes and behaviour of individuals, institutions, and organisations in light of a rapidly changing world of the Anthropocene (Wals, Weakland, & Corcoran, 2017). Despite the fact that the complex current and future environmental and sustainability problems are a major issue for all countries and citizens to tackle (United Nations, 2008), there has to date been little research on people's attitudes and behaviour related to the multiple dimensions (economic, social, and ecological) and their relationships that characterize sustainability (Gericke et al., 2019; Goldman et al., 2017). Especially among young people, little attention has been paid to whether and how they act to sustainable development challenges. Given the increasingly globalised world and the pivotal role of young people representing our future, I want to gather insights into the development of civic engagement relating to the broader issue of sustainable development and look at the potential impact of two main socialisation agents in particular; parents and the school.

The *second part* of this work can be situated in the field of political socialisation research and discusses the significant findings of the third and the fourth empirical study of this dissertation. In Chapter 4, I look at parents while Chapter 5 constitutes the school as a socialisation context. While there are a number of other possible socialisation agents influencing youths' political and civic development (e.g.

peers, neighbourhoods, voluntary associations, and social media), previous studies, although scarce, have already shown that parents are particularly important socialisation agents in affecting their children's environmental attitudes (Grønhøj & Thøgersen, 2009, 2012; Leppänen et al., 2012; Meeusen, 2014) and behaviour (Casaló & Escario, 2016; Duarte et al., 2017). Children and adolescents spend a significant amount of time together with their parent(s) from a young age onward (Wanders et al., 2021). Investigating whether parents can be seen as important socialisation agents in relation to their broader attitudes and behaviour concerning sustainable development is thus an important question. Therefore, the research question in **Chapter 4** is *whether parents are important in their children's' formation of sustainable development competences?* which will be tested by using Flemish household panel data by looking at similarity in the family. Furthermore, since previous studies in the social learning theory imply that attitudes and behaviour are influenced by family characteristics, I will investigate whether discussions as a specific underlying socialisation mechanism in the family is important in the transmission and whether it leads to more attitudinal or behavioural congruence (Levinsen & Yndigegn, 2015; McIntosh, Hart, & Youniss, 2007). In an attempt to answer this research question, a Flemish case study with both parent and child-level data will be used. Furthermore, the study will investigate whether young people's sustainability's attitudes and behaviours are comparable to the older generation.

By only looking at household data to grasp the development of sustainability attitudes and behaviour, we miss the opportunity to better understand the relevant underlying mechanisms and processes of development. Indeed, next to the impact of parents, there is a growing consensus about the role of schools in influencing youths' development of civic engagement through citizenship education (Neundorf, Niemi, & Smets, 2016; Torney-Purta et al., 2001). Another school approach; education for sustainable development (ESD), has also been put forward as important by policy makers and researchers to help students to develop the knowledge, attitudes, behaviour, and thinking skills to make responsible and well-informed decisions to create a sustainable world (Agbedahin, 2019; Berglund & Gericke, 2018; Boeve-de Pauw et al., 2015; Hopkins, 2012). However, school effectiveness research looking at the impact of ESD on student outcomes show rather limited and small results. Furthermore, a limitation of these studies is that they mainly use cross-sectional data and have therefore not been able to show attitudinal and behavioural changes in time (Olsson, Gericke, & Boeve-de Pauw, 2022). Hence, **in Chapter 5,** I will investigate *whether the implementation of an education for sustainable development program positively contributes to the enhancement of young adolescents' sustainability attitudes and behaviour?* I will look at the implementation of a large-scale sustainable development intervention over a one-year period and test whether the specific intervention increased young adolescents' civic engagement in terms of knowledge, attitudes, and behaviours related to sustainable development over time (before and after the implementation of the program).

Within schools as socialisation environments, much of the work in adolescents' civic engagement focuses on school-related factors such as an open classroom climate (White & Mistry, 2019) while

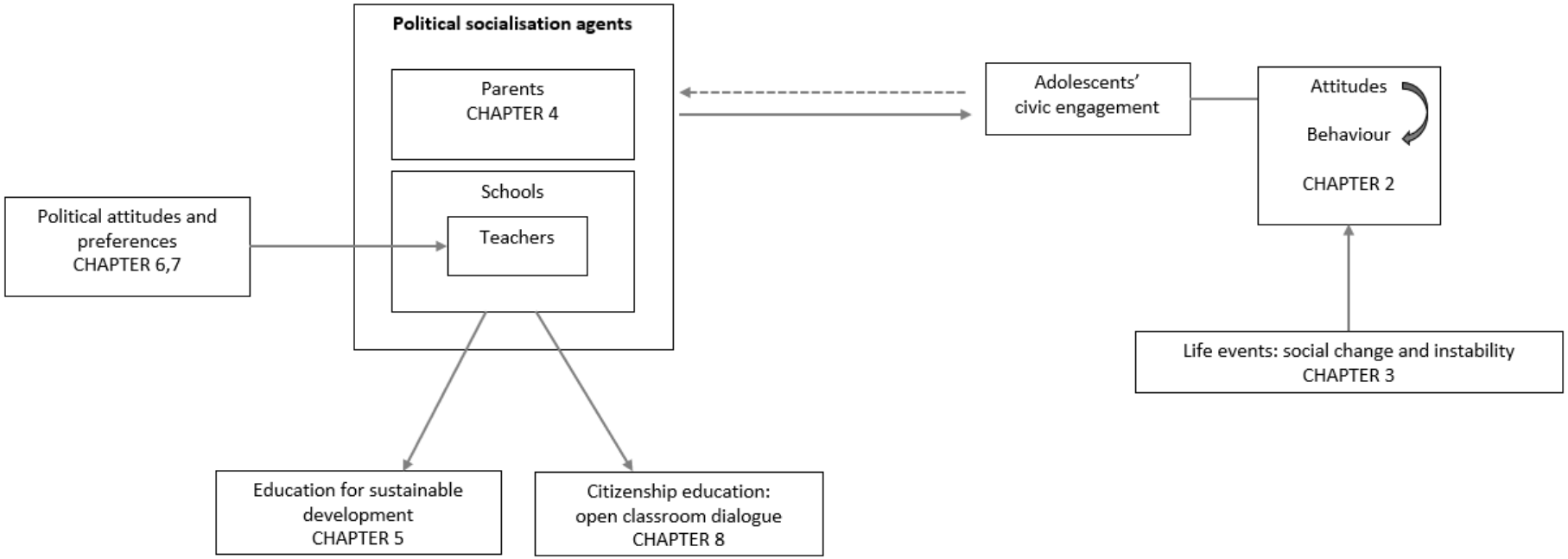
teachers has received remarkably little attention. Therefore, the *third part* of this dissertation is dedicated to teachers themselves. Based on the bioecological theory (Bronfenbrenner & Morris, 2006), teachers' interactions in the classroom may be related to adolescents' civic development (White & Mistry, 2019). Indeed, teachers are viewed as influential by their transmission of attitudes, values, beliefs, norms, and behavioural-patterns (Bar-Tal & Harel, 2002; Lumpkin, 2008). In the current literature on the importance of teachers in civic education, it is often assumed that teachers have a liberal minded value pattern. However, there is little attention devoted to investigate the validity of this assumption (Myers, 2009; Van de Werfhorst, 2020). Therefore, I will look at teachers as possible civic role models within the context of the democratic school by focusing on how teachers' broader political attitudes are manifested, which, in turn, might affect the students themselves. In line with Hastie (2007), I will examine liberalisation based on an increased tolerance for minority social groups and support for left-wing parties. This research goal guides two empirical chapters. In **Chapter 6**, *I will look at teachers' tolerance for immigrants and investigate the determinants underlying these attitudes.* Tolerance is an important democratic value and one of the central principles of a diverse democracy (Sherrod et al., 2002). Answering this research question is theoretically relevant in view of important studies showing that teachers' racial and prejudice attitudes are promising predictors of children's attitudes (Vezzali, Giovannini, & Capozza, 2012). Furthermore, in **Chapter 7**, I will *empirically investigate the ideological and electoral preferences of teachers and how they are reflected in their teaching behaviour.*

Within the literature of citizenship education, an open classroom climate with classroom discussions is one of the main elements (Dostie-Goulet, 2009; Geboers et al., 2015; Wanders et al., 2020) and appears to effectively promote the development of citizenship attitudes and behaviour of young people. The teachers' style of instruction promoting an open classroom climate including discussions and dialogue appears to be positively related to adolescents' political engagement (Campbell, 2008; Dijkstra et al., 2015). In contrast to the sufficient body of research on democratic citizenship attitudes and learning outcomes among pupils, there is little agreement about how teachers aim at dealing with citizenship education as part of the curriculum and contribute to an open classroom climate in their teaching. Thus, research should be undertaken to investigate teachers' actual democratic classroom practices such as teaching methods and classroom interactions including discussion and dialogue, and at the same time consider them among different groups of teachers (e.g., age, gender, teaching subject). Therefore, the overall aim of the last research study in the *fourth part* of this dissertation (**Chapter 8**) is to *provide new insights into teachers' practices of promoting an open classroom climate as an obligatory part of the curriculum.*

1.1.2 Conceptual visualisation of this dissertation

In Figure 1.1, the main concepts in the boxes depict what will be assessed in the dissertation. The arrows with full lines suggest the relation(s) I will examine in the empirical chapters. The arrows with dotted lines in the figure refer to theoretically assumed relations but will not be investigated in this dissertation.

Figure 1.1. Conceptual visualisation of the dissertation



The political development of adolescents and the role of political socialisation agents

In what follows, I outline the theoretical framework guiding this dissertation. First, I discuss the theoretical conceptualisations of the terms political participation and civic engagement which will further guide this chapter. Next, I review the main theoretical frameworks for interpreting the influence of the socialisation agents on young people's political development – parents and schools including teachers. Finally, I conclude this introductory chapter with more explanation on two case studies, which were used for this dissertation.

1.2 Political participation and civic engagement conceptualised

Political participation and civic engagement constitute the central concepts underlying this dissertation. Therefore, in the next part, I will first conceptualise these terms. In particular, I discuss previous definitions and elaborate on the definitions that were chosen for this dissertation.

Political participation was already early defined by Verba and Nie (1972, p. 2) as 'those activities by private citizens that are more or less directly aimed at influencing the selection of governmental personnel and/or the actions they take' which thus also includes a broader variety of actions such as 'protests, strikes, or petitions as activities that participate in politics through other means than elections' (p. 47). With this definition, however, political participation focuses exclusively on acts directed toward the government. Today, to meet the needs of an increasingly globalised society, the field of political participation has been enriched by interdisciplinary research linking political science, sociology, and developmental psychology disciplines which has resulted in widely varying definitions and a 'broadened conceptualisation of political participation that goes beyond voting and electoral politics' (Sherrod et al., 2010, p. 2). Nevertheless, it can be criticised that together with the rapid and continuous development of forms of political participation, the many conceptualisations in the literature may also lead to different conclusions in research on the assumption of change and decline of political participation, as already mentioned above. In line with this criticism, in this dissertation I follow the 'minimalist' operational definition of van Deth (2014, p. 354) to conceptualise political participation as "a voluntary activity by citizens in the area of government, politics or the state".

To date, there is no single, widely agreed-upon meaning for the term of civic engagement. The multifaceted concept of civic engagement, showing some similarities with political participation, "has been used to analyse all kinds of citizen behaviour, including activities and actions which can but do not necessarily have to be political" (Weiss, 2020, p. 2). For Barret and Pachi (2019, p. 3), civic engagement refers to "the engagement of an individual with the concerns, interests and common good of a community". They further argue that 'not all engagement is exhibited through participatory behaviour and it is entirely possible to have an interest in and to have knowledge, opinions or feelings about political or civic matters without undertaking any action'. Although the operationalisation of civic engagement is broad and differs slightly across studies, it is generally understood as "democratic and political attitudes, behaviour, knowledge and competencies related to an interest in improving the local community and the wider society" (Lenzi et al., 2014, p. 251). It is clear that - due to social changes in our society such as the globalisation - the literature on political participation and civic engagement will continue to evolve. Research in the area of political socialisation "needs to go beyond the limited conception of politics that can be found in the literature" (Annette, 2009, p. 155). This is in line with Amnå et al. (2009, p. 29) who suggest that "the limited sets of measures used in most studies cannot capture political involvement as it is broadly defined today". Although the need of the

reconceptualisation of political participation and citizenship engagement is clear, more empirical studies are needed to fully understand the diversifying political attitudes[4] and behaviour of people in order to prepare them better for the current and future global challenges and equip them with the competences – knowledge, attitudes, values, and skills – to be critical citizens (Byker, 2016; Byker & Putnam, 2019). For the purposes of this dissertation, I follow the recommendation of the previous authors, where I consider a broad measure to capture civic engagement, including both adolescents' political attitudes and behaviour, operationalised through the construct of sustainable development as one of the posed major challenges which we have to address today.

1.3 Political development among adolescents and the role of political socialisation agents

The theoretical framework that provides the main insights for almost all empirical chapters in this dissertation is the theory of political socialisation. Political socialisation has become a recognised part of political science research and engaged the interest of numerous political science scholars and educators. The term originates from the early work of Hyman (1959, p. 25) and is defined as an individual's "learning of social patterns corresponding to his societal positions as mediated through various agencies of society". Over the last few decades, a considerable amount of political socialisation research has been devoted to political interest, knowledge, participation, and attitude development of young people (Sherrod et al., 2010). Traditionally, socialisation is mainly based on the transmission of political attitudes, values, and party identification from authority figures to children and adolescents, which is often measured with correlations (Hess & Torney-Purta, 1967*;* Hyman, 1959; Jennings & Niemi, 1968; Zuckerman, Dasović, & Fitzgerald, 2007). However, in the literature it is argued that socialisation is not a one-way road with youth seen as passive recipients, but rather as a bidirectional or reciprocal or trickle-up process in which children and adolescents are active participants in their own civic development (Sherrod et al., 2002). Indeed, authority figures and youth might influence each other because values are influenced by interactions in different contexts, which allows for different viewpoints (Knafo & Galansky, 2008; McDevitt & Chaffee, 2002). For this reason, as Chapter 5 of this dissertation demonstrates, I specifically look at the congruence and similarity of sustainability attitudes and behaviour within the family, considering political socialisation as a bidirectional process.

[4] Although the terms attitudes, values, and beliefs are often used interchangeably in political socialisation research, some scholars have argued that it is important to distinguish between these terms. In this dissertation, I consider values as 'the basis of a person's system of attitudes and beliefs (Hogg & Vaughan, 2011) which 'reveal the principles we believe in and the standards that we use to guide our choices and behaviours'. (Flanagan, 2013, p. 27). Values are also defined as 'enduring beliefs that are deeply rooted in personality' (Pöge, 2020, p. 267). Furthermore, I follow the definition of Breckler (1984) on attitudes. Breckler defines an attitude as a latent mental construct towards an abstract or concrete object and has three components: the affective component indicating a person's feelings about the attitude object; the behavioural component describing the way the attitude influences a person's behaviour; and the cognitive component, a person's belief/knowledge about an attitude object (Hadjichambis et al., 2020).

1.3.1 The role of parents

The first socialisation agents I will focus on in this dissertation, are the parents. In the political socialisation literature, parents have continued to be viewed as one of the major influential socialising agents (Jennings, Stoker, & Bowers, 2009; Hatemi & Ojeda, 2020; Maccoby, 1992; Niemi & Junn, 1998; Sherrod et al., 2002). A common approach is the bioecological theory, which views parents as the most influential figures for their children's' development (Bronfenbrenner & Morris, 2006). Parents have indeed a substantial and long lasting impact on their children (Jennings et al., 2009; Zuckerman, 2005). Many previous studies in the field of political socialisation research have already indicated the influence of parents on youths' political development, such as identification with political parties (Jennings & Niemi, 1981; Ojeda & Hatemi, 2015), political ideology (Rico & Jennings, 2016), political engagement (Jennings et al., 2009), intergroup attitudes (Degner & Dalege, 2013), and cultural orientations (Vollebergh, Iedema, & Raaijmakers, 2001).

The transmission of family attitudes, values, beliefs, and behaviour from one generation to the next refers to intergenerational transmission (Grønhøj & Thøgersen, 2007; Moore et al., 2001) and can be seen as a powerful mechanism on transmission between parents and their children. A great deal of previous research on generational transmissions related to a wide variety of political attitudes and behaviour, has focused on direct and indirect transfer within the family context (Cross & Young, 2008; Jennings et al., 2009). On the one hand, direct socialisation takes place when the political and civic participation of the parents is high (Jennings & Niemi, 1968). If children and adolescents are able to observe their parents as active and involved in politics, they are more likely to engage in politics at a later age as well (Cicognani et al., 2012; Zukin et al., 2006). In this case, parents engage as socialisation agents through role modelling for their children to observe and imitate. Indirect socialisation on the other, occurs when children and adolescents are regularly exposed to political information and discuss politics within the family. It is indeed argued that political discussions within the family are part of the political socialisation process and can be seen as an activity where young people learn some basic democratic skills (Levinsen & Yndigegn, 2015). It has also been shown that parents who discuss political issues in the family more frequently are more effective in strengthening parent-child agreement. Furthermore, also interactions and experiences with socialisation agents seem to be beneficial for the development of civic competencies and engagement of adolescents (Andolina et al., 2003; Jennings et al., 2009; McDevitt & Kiousis, 2007; McIntosh et al., 2007; Schmid, 2012). Given the importance of discussions and interactions as a socialisation mechanism within the family, Chapter 4 specifically investigates whether the frequency of family discussions interfered for the transmission of sustainability attitudes and behaviour within the family.

As mentioned above, parents are traditionally considered to be one of the main socialisation agents of political and social behaviour for their children (Jennings & Niemi, 1981). However, more recently,

despite all structural and social changes in society and within families, scholars has questioned this considerable consensus on family influence by stressing the fact that classical approaches to political socialisation can no longer be taken for granted (Hatemi & Ojeda, 2020; McDevitt & Chaffee, 2002; Ojeda & Hatemi, 2015; Sapiro, 2004). As a result, in the more recent approach, family communication and socialisation are seen as reciprocal or trickle-up influences and interactive processes (McDevitt & Chaffee, 2002), where children and adolescents might start the political discussions and encourage parents to enlarge their civic engagement (McIntosh et al. 2007; Zuckerman, 2005) and thus, no longer considered purely as top-down processes (Glass, Bengtson, & Dunham, 1986; Niemi & Jennings, 1968).

Although political similarities between parents and their children has been found in different empirical studies (Jennings and Niemi, 1968; Jennings et al., 2009; Gidengil et al., 2016), one of the gaps conceive the broader conceptualisation of political citizenship, beyond participation which also includes broader civic engagement (Amnå et al., 2009; Ekman & Amnå 2012). Hence, it becomes clear that more studies on the political socialisation of democratic attitudes and behaviour will certainly contribute to the research field (Sandoval-Hernandez et al., 2018). In line with these arguments, in Chapters 4 and 5 of this dissertation, I will look at sustainable development attitudes and behaviours as a specific form of civic engagement.

1.3.2 The role of education

Schools are, next to parents, considered important institutions in which political socialisation occurs such as the socialisation on political participation and civic engagement. Already in the early days, researchers agreed that the school fulfils the role of an important political socialisation agent (Almond & Verba, 1963; Dewey, 1916; Hess & Torney-Purta, 1967). Some scholars even argue that the school is the most important predictor for the development of civic knowledge, democratic attitudes, and political behaviour (Parker, 2003; Verba & Nie, 1972). It has been argued that to unlike other societal contexts, the school has the potential to reach almost all young people (Stadelmann-Steffen & Sulzer, 2018). Furthermore, schools are part of the daily life of young people and can be seen as mini-societies in which the first experiences with politics and participation as citizens take place (Flanagan, 2013) including a more diverse population (i.e. ethnicity, gender, religion, and age) in comparison to adolescents' private networks (Sincer et al., 2022). Schools can also contribute to civic learning and the formation of attitude and citizenship competences (Biesta, 2011; Biesta & Lawy, 2006; Sherrod et al., 2002) where pupils learn about citizenship and roles in society (Godfrey & Grayman, 2014).

Citizenship education

Against the background of the global challenges, young people should develop social, political, civic and intercultural competences (European Commission/EACEA/Eurydice, 2016). This requires shifts in our current education and learning systems. A solution which is often mentioned in literature and

national and international policy to reach this goal is citizenship education. Citizenship education should not only focus on enhancing students' civic knowledge but their citizenship competences as well (LeCompte, Blevings, & Riggers-Piehl, 2020). Citizenship education is consistently seen as one of the most efficient ways to foster democratic citizenship competences such as democratic values and skills and tolerant attitudes among young people. Although citizenship education is a field with a long history and thus not a new approach (Campbell, 2019), the renewed attention and interest in civic education over the last few decades can be partly seen in the context of the widespread concern about the political participation and civic engagement decline among young people (Zukin et al., 2006; Youniss, 2011) as already explained above in this dissertation. Stimulating the development of students' civic knowledge (Schulz et al., 2016), democratic attitudes, and behaviour needed for civic engagement and critical thinking skills (Veugelers, 2011; Westheimer & Kahne, 2004) should be a clear goal of citizenship education (Campbell, Levinson, & Hess, 2012). Citizenship education is considered to have an important socialising effect on young people (Neundorf et al., 2016) and is expected to influence political attitudes and participation (Torney-Purta et al., 2001). Furthermore, findings of Neundorf, Niemi, & Smets (2016) contribute to a better understanding of citizenship research by showing that citizenship education classes also have an impact on the future political engagement of young citizens after they leave secondary school.

Today's globalising world poses also important questions about how citizenship and citizenship education should be defined. In more recent work, the conceptualisation of the concept 'citizenship' is being broadened. It is no longer understood as a legal political status (Schuitema et al., 2018) and not only connected to a national identity, but also to the global world (Veugelers, 2011). In line with this trend, some recent citizenship education research has shifted its attention towards an approach of citizenship that has a more global perspective at its centre (Byker, 2016; Osler & Starkey, 2006) which allows for a variety on the conceptualisation of citizenship education and how it could be approached (Althof & Berkowitz, 2006; Veugelers, 2011; Westheimer & Kahne, 2004). The definition that will guide this dissertation is based on the one of the Eurydice report :

> Citizenship education is a subject area that is promoted in schools with the aim of fostering the harmonious co-existence and mutually beneficial development of individuals and of the communities they are part of. In democratic societies, citizenship education supports students in becoming active, informed and responsible citizens, who are willing and able to take responsibility for themselves and for their communities at the local, regional, national and international level (European Commission/EACEA/Eurydice, 2017, p.9).

In the context of the global challenges and an increasing decline of youth political participation, citizenship education seems more important than ever (Maaß et al., 2022). Currently, in most Western democracies, schools are expected to contribute actively to students' citizenship competences (Hess,

2009). As a result, citizenship education has often been implemented in the formal curriculum (European Commission/EACEA/Eurydice, 2017). In most countries, citizenship education in secondary schools is not a separate subject or a single teaching method but integrated as a cross-curricular topic embedded within a multitude of subjects with a strong focus on practical and extra-curricular activities (Deimel et al., forthcoming). Given that teachers organize and shape classroom environments, they are in a powerful position to support children's experiences with civic engagement (White & Mistry, 2019). Furthermore, teachers hold a key position in the classroom, and, to a large extent, determines what actually is included in and excluded from the classroom. Consequently, schools differ in their implementation of citizenship education (Deimel et al., forthcoming). Some studies show that there is a 'civic opportunity gap' where students have unequal opportunities to take part in citizenship education (Kahne & Middaugh, 2008). Given the widespread importance of citizenship education and its changing rapidly over time (Veugelers, 2021), it is important to understand how teacher contribute to citizenship outcomes. Despite an increasing body of research in citizenship education, empirical knowledge about the role of teachers in approaching citizenship is scarce, if not missing to date. This calls for future research in the discourse of citizenship education focusing on the teacher itself, which is an important contribution of this dissertation.

The importance of an open classroom climate

Citizenship competences of pupils can be socialised by direct or indirect learning. Indirect learning includes the social interactions in the school context among students and among students and teachers and the discussions and dialogues in the classroom which are valuable in the citizenship development (Lawy & Biesta 2006; Schuitema, ten Dam, & Veugelers, 2008; Torney-Purta & Amadeo, 2011). An open or a democratic classroom climate has been the subject of civic education research by many scholars and already in early work from Almond and Verba (1963) and Niemi and Junn's (1998), an open classroom climate was viewed as important (Persson, 2015).[5] An open classroom climate is defined as a classroom in which students feel free to openly discuss social and political topics on controversial issues (Torney-Purta, 2002). Schools with an open classroom climate has been identified to be positively associated with adolescents' civic outcomes such as political interest, political trust, political knowledge, tolerance towards immigrants, support for equality, political participation, and civic engagement (Campbell, 2008; Gniewosz & Noack, 2008; Hess & Posselt, 2002; Quintelier & Hooghe, 2013; Persson, 2015; Torney-Purta et al., 2001; Knowles, Torney-Purta, & Barber, 2018). An open classroom climate where students interact and discuss ideas with their teachers and peers, is an

[5] Beyond the open classroom climate (Campbell, 2008; Hess, 2009), there is evidence for the effectiveness of other teacher practices in citizenship education such as extracurricular activities (McFarland & Thomas, 2006), formal civic education (Galston, 2001), and active learning strategies (Quintelier, 2010). However, these elements are out of the scope of the current dissertation.

ideal environment to stimulate adolescents' civic and political competences where students can practice and experience what it is to be a citizen (Parker, 2003; Stadelmann-Steffen & Sulzer, 2018; Torney-Purta et al., 2001). Furthermore, it stimulates students to develop their own views on moral and social issues, recognise multiple perspectives (Schuitema et al., 2008) and improve their critical thinking skills (ten Dam & Volman, 2004; Veugelers, 2021).

Schools are places of diversity regarding language, ethnicity, gender and religion which may result in different opinions among the students. In an open classroom climate, students should get the chance to discuss social and political issues even if they differ from common beliefs and norms of the school (Sivenbring, 2019). According to Hess (2009) and Parker (2003) the discussion of controversial topics in classrooms are the foundation of a working democracy and can contribute to the building of political tolerance of students. Notwithstanding, teachers often avoid discussions with students that express extreme views (Grimm & Pilkington, 2015). The study of Zembylas and Bekerman (2013) for instance shows how schools avoid topics involving politics or religion because students might have different opinions. Among scholars it is noted that the success of the implementation of citizenship education will depend, next to the learning strategy, on how well teachers are prepared to teach about controversial issues (Oulton et al., 2004). However, the latter is not well understood and there is little research into practices in secondary schools regarding this topic. Furthermore, within citizenship research, it still remains unclear how an open classroom climate takes place (Campbell, 2008; Lenzi et al., 2014; Martens & Gainous, 2013). Teachers are however the central actors in education with certain levels of freedom to decide what kind of citizenship practices they want to implement in their classrooms. Hence, teachers are able to create conditions for an open classroom climate (Wanders et al., 2021). Investigating the effectiveness of teacher practices is particularly important in education systems that give them much autonomy (i.e. education system of Flanders). Hence, it is the aim of this dissertation to fill in this gap in the current literature by studying the practices of the teachers in Flanders, a region where citizenship education is only an implicit part of the curriculum.

Education for sustainable development

While the transition towards a more sustainable world was set in motion several decades ago due to the Brundlandt report (1987), it is clear that a shift towards sustainability requires more action. In order to shift to sustainable societies, we need to change our ways of thinking and acting with regard to sustainable development issues. Indeed, there is the need of collective and individual action from the entire population including individuals, organisations, and governments to address sustainable development issues which are not only environmental but also social and economic problems (Jickling & Wals, 2008). As a result, these issues are often understood as complex or 'wicked', involving controversy on how to solve it due to intertwined, but sometimes conflicting interests (Rittel & Webber, 1973). Since the last years, both policymakers, scholars, and citizens (including the youth) urge for

change and action towards a more sustainable society at present and future. The latter is reflected in the international climate strike movements such as the Fridays for Future which started in 2018 where students among the world strike for increased action on climate change which received widespread media attention and can be seen as one of the largest environmental youth movements today (Cologna, Hoogendoorn, & Brick, 2021). Consequently, the sustainability debate has recently gained momentum and public attention. Although there are no fixed solutions, it is important to make (young) citizens competent to take well-informed and conscious choices for challenges in the context of sustainable development in order to secure the quality of life for current and future generations. Furthermore, part of the global challenges are issues related to the environment and to sustainable development including climate change which calls for cooperation and collective actions at both global and local levels now and in the future (UNESCO, 2016). Within this debate, much of the current literature pays particular attention on young people as they are most likely to be affected by the current globalisation and the climate change (IPCC, 2014). Thus, given the lack of previous research on early adolescents' engagement in sustainability challenges, it is clear that there is enough reason that close attention must be paid to the attitudes and behaviour of this particular age group.

Sustainable development is seen as an important aim of citizenship education (Cheah & Huang, 2019). Moreover, the importance of sustainable development across the globe is shaping the meaning of citizenship (Cheah & Huang, 2019). Educational efforts towards a more sustainable world are often grouped under the term Education for Sustainable Development (ESD) which is commonly understood as education that encourages changes in knowledge, skills, values and attitudes to enable a more sustainable and just society for all. ESD is presumed to 'empower and equip current and future generations to meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development' (UNESCO, 2018, p. 6). Furthermore, 'ESD aims to produce learning outcomes that include core competencies such as critical and system thinking, collaborative decision-making, and taking responsibility for present and future generations' (p. 7). ESD is seen by policymakers, educators and scholars as one of the key implementations to achieve sustainable development because of its democratic educational approach which is closely linked to citizenship education and environmental education, and can equip students with the competences needed to act upon the complexity of sustainable development (Breiting & Mogensen, 1999; UNESCO, 2020). Ensuring a sustainable future in order to secure the quality of life for current and future generations, requires a holistic, pluralistic and action-oriented way of thinking and acting (Sinakou, Boeve-de Pauw, & van Petegem, 2019). This means that one's explore the interconnectedness within issues of sustainability (holism), acknowledge different viewpoints and perspectives on sustainable development (pluralism) which allow us to undertake action towards current and future sustainability challenges (Rudsberg & Öhman, 2010).

Today, due to large international organizations such as the United Nations, education is viewed as an important tool to equip future generations with the necessary action competences to face sustainability challenges. The European reference framework on key competences for lifelong learning for instance explicitly feature sustainability in the description of citizenship competence (European Commission, 2019). The United Nations also declared 2005-2015 as the Decade of Education for Sustainable Development to put sustainability on the school agenda worldwide (Arbuthnott, 2009). Another example are the 17 United Nations Sustainable Development Goals in which Target 4.7 focuses on education that all countries must promote and address. As a result, depending on the country, ESD is currently widespread implemented as a subject as part of civic education or a broader cross-curricular theme in schools. Recently, ESD was also placed at the centre of the 2030 Sustainable Development Agenda (UNESCO, 2018). Although the policy attention of ESD, the question remains whether programs and projects launched in schools are successful and whether they have the desired effect: 'need for more research, innovation, monitoring and evaluation to develop and prove the effectiveness of ESD good practices' (UNESCO, 2014, p. 10). In line with the rather limited evidence of the effectiveness of ESD programmes, we should investigate this important issue if we want ESD to make a real contribution to the needed changes in our society (Waltner et al., 2019). Furthermore, the current scarce school effectiveness research show rather limited and small effectiveness of sustainable development programs implemented in education (Boeve-de Pauw & Van Petegem, 2011; Johnson & Činčera, 2015; Olsson, Gericke, & Rundgren 2016). Furthermore, researchers point to the need for longitudinal level studies. Therefore, as an important contribution of this dissertation, I will look at the effect of a particular ESD program on young adolescents' competencies which are needed to face the sustainable challenges ahead. More specifically, I will make use of a uniquely designed educational sustainable development intervention looking at the changes in sustainable development competences which consist of attitudes and behaviour, before and after an ESD intervention.

1.3.3 The role of teachers' attitudes

Children are not born with attitudes and although some attitudes may be instinctive, most attitudes are learned and must be acquired as we grow up (Baron & Byrne, 1994). There is wide agreement that we learn directly or indirectly about social and political issues from individual experiences and from various socialisation agents - both during childhood and adolescence (Neundorf & Smets, 2017). Relying on developmental frameworks, young people's civic engagement can be influenced by a person's interaction opportunities within different contexts or systems, "such as family and peers, with whom most social interactions take place; or schools, where youth spend most of their daily lives" (Tzankova et al., 2021, p. 1313). From the perspective of Bandura's social learning theory (1977, 1986), children and adolescents primarily learn how to behave through modelling and by observing influential others within a social context. These social learning mechanisms serve as the basis of the socialisation research (Degner & Dalege, 2013). According to the bioecological theory, interactions are the primary

mechanisms through which human developmental takes place (Bronfenbrenner & Morris, 2006). These social learning mechanisms might also take place in schools and classrooms. Indeed, teachers are often seen as role models in the school context, who can influence the attitudes and behaviour of their students (Sanderse, 2013). Teachers enter the classroom with their political and social attitudes and beliefs, as well as their own prejudices and misconceptions (Bakari, 2003). Teachers' attitudes are influenced by the social, cultural, and historical contexts they experience and have a strong impact on the decisions or practices they develop in the classroom (Schultz, Jones-Walker, & Chikkatur, 2008; Vollmer, 2000). Given the influential and important socialisation role of teachers through which students can learn about cultural diversity, tolerance, non-discrimination, develop a sense of belonging within a multicultural society and interact with others (Hello, 2003; Walton et al., 2014), 'the public expects teachers to display behaviours reflective of moral virtues' (Lumpkin, 2008, p. 45). However, there is little attention devoted to investigate the validity of this assumption (Myers, 2009; Van de Werfhorst, 2020). Therefore, we must have a deeper understanding of how teachers democratic attitudes and beliefs are manifested in secondary school classrooms these days, which is the goal of this dissertation in Chapter 7.

1.4 Case studies

The first case study is the large-scale VALIES (valorising integrated and action oriented education for sustainable development at school) study, funded by Fonds Wetenschappelijk Onderzoek (FWO), supporting fundamental and strategic scientific research in Belgium. Several partners (universities and educational umbrella organisations) were involved in the VALIES project such as University Leuven, University Antwerp, Artevelde University College, Provincial Education Flanders, and Catholic Education Flanders. The main aim of VALIES was to build teachers' competences to implement education for sustainable development in their schools and classrooms. The VALIES program for the professional development of teachers was implemented in about 50 Flemish primary and secondary schools from all five provinces of Flanders. During this program, teachers were initiated and trained in ESD with key concepts such as holism, pluralism, and action-orientation.

For the research focus of the current dissertation, I specifically focused on the students and their parents involved in the project. Original survey studies were carried out to collect first hand data. Paired data, one child and one parent in each household, were collected from children and their parents. The first VALIES survey (before measurement) was implemented for children of the VALIES schools and one of their parents. In total, 2,565 children aged 10 to 14 from 47 Flemish primary and secondary schools were recruited for the first survey wave. Every child who participated in the VALIES project filled in a survey in the classroom in September 2019 and passed on a survey with similar questions to one of their parents. Both parents and children could make use of a paper or a web-based survey. The parents received one reminder after four weeks sent by teachers to increase the response rate. We asked the respondents in the first survey if they wanted to take part in the second wave in June 2020. We also

included a control group of parents from 10 different schools (5 primary and 5 secondary schools) who did not participate in the VALIES project. In total, 2,565 parents were contacted by their children to fill in the first survey and 426 parents were contacted for the control group. For the second survey (after measurements) in June 2020, the parents were contacted by the researchers directly through e-mail or home address, without relying on schools or children. Finally, a first reminder after four weeks with an information letter about the study and a second reminder four weeks later, including a new survey, were sent to the parents. The second sample consists of 634 parents (551 parents of the VALIES project and 83 parents of the control group). At the start of the project 47 schools (with mostly two classrooms from each school participating in the project) were included in the VALIES project and the surveys. However, due to the COVID-19 pandemic, some schools decided to not participate in the VALIES project and did not complete the survey from the second wave in June 2020. After all, 28 from the initial 47 schools participated in the second wave of the survey (after measurement moment). In the survey of the first wave, questions related to sustainable attitudes and behaviours, knowledge and interest in sustainable issues were included, which were identical for parents and children. In the parental survey, we also included political questions and demographic characteristics questions. In the survey of the second wave, we added some extra questions related to the corona crisis for the parental survey. The sustainable attitudes and behaviours were measured using a reduced version of the sustainable consciousness questionnaire (SCQ-Scale) developed by Gericke et al. (2019). This scale includes 27 items measuring the environmental, social, and economy dimensions of sustainability, making use of a holistic approach of sustainability.

The second case study, ONarVla (online positive narratives for the prevention of radicalisation in Flemish education), which was funded by the European Commission, aims to make extremist messages less attractive by supplying correction information, alternative narratives and possibilities for democratic social commitment. ONarVla is supported by the Radicalisation Awareness Network's (RAN) to address the prevention of radicalisation in education more effectively. Considerable scattered information regarding the prevention of radicalisation is already available for secondary teachers in Flanders, Belgium. However, a shared and distinct online learning platform with information and concrete tools for teachers to use in the classroom is still lacking. ONarVla wanted to address this gap and wanted to show teachers the radicalisation process and possible push and pull factors, to clarify the role and influence of new media and online manipulation processes and to develop tools and guidance concerning the role that they themselves can play at each stage of this process with the implementation of an online platform implemented by the other partners (Departement Onderwijs en Vorming; DOV, Klasse, Mediawijs and CIRRA) of the project. Essential to the project is the organisation of a before and an after measurement. However, for the purpose of this dissertation, I made use of the first survey analysis.

A representative sample of 2000 secondary school teachers from Flanders received a questionnaire that could be filled in at home. All teachers were working in the general secondary education, technical and vocational secondary education system in Flanders. The questions in the survey are based on questions included in the International Civic and Citizenship Education Study (ICCS, 2016) implemented by the International Association for the Evaluation of Educational Achievement (IEA) and other questionnaires that were used before in our research group, e.g. Centre for Citizenship and Democracy. The survey also included new designed questions specifically related to the content of the project e.g. radicalisation, polarisation, social media, and fake news but are not used within this dissertation.

1.5 Citizenship education and education for sustainable development in the Flemish education system

Before elaborating on citizenship education and education for sustainable development in the Flemish context, I discuss the Flemish education system in the following section.

Belgium as a federal country consists of three regions (the Flemish region, the Brussels-Capital Region and the Walloon region) and three language communities (the Dutch-speaking community, the French-speaking community and the German-speaking community). Education, together with many other policy areas (culture, healthcare,…) falls under the purview of the language communities. In other words, the Flemish community is responsible for education in Flanders – the northern Dutch-speaking region of Belgium, and the Dutch-speaking schools in Brussels (Verachtert, Stiers, & Hooghe, 2022). However, Flemish schools have a high degree of autonomy at the local level which is grounded in the principle of "freedom of education", guaranteed by Article 24 of the Belgian Constitution (European Commission/EACEA/Eurydice, 2022; OECD, 2015) which has led to a substantial socio-economic and ethnic segregation in Flemish schools (Agirdag, Van Houtte, & Van Avermaet, 2012).

In Flanders, there are several types of education which are recognised by the Flemish government and organised through three educational networks: GO! Onderwijs van de Vlaamse Gemeenschap, organised by the Flemish Community; Onderwijskoepel van Steden en Gemeenten and Provinciaal Onderwijs Vlaanderen, organised by the cities, municipal or provincial authorities and the free-schools, government-aided education organized by a private person or organisation, which are mainly Catholic schools (Katholiek Onderwijs Vlaanderen). Furthermore, in Flanders, schools are often grouped in educational umbrella organisations of their educational network in which they follow the developed curricula (European Commission/EACEA/Eurydice, 2020).

Elementary education in Flanders includes both pre-school education (from 2,5 to 6 years) and primary education (from 6 to 12 years). Secondary education on the other hand, is organised for adolescents from twelve to eighteen years old. Furthermore, schooling is compulsory from age six to eighteen. Besides, unlike primary education, secondary education in Flanders is divided in three stages and various types of education. The first stage of secondary education (12-14 years) offers a common

curriculum of basic general education. The second and third stage of secondary education is from fourteen to eighteen years and lasts for two years each. Secondary education is organized into four different main tracks of education. General secondary education focuses on a broad general education and prepares students for higher education. Technical secondary education comprises general and technical-theoretical subjects. Arts secondary education combines general education with an active art practice. The vocational secondary education is characterized by a practically-oriented type of education (Eurydice/European Commission/EACEA, 2017). Research has shown that ethnic and socioeconomic inequalities are reflected in the Flemish secondary tracking system, with ethnic minority students being overrepresented in technical and vocational tracks (Demanet, Van den Broeck & Van Houtte, 2014).

There is an absence of standardized central tests in Flemish education. Consequently, after secondary education, all students receive a secondary education diploma, granting access to higher education (Van den Broeck, 2020). It is also important to note that although there is a non-binding advice given by the teacher at the end of primary education, the track enrolment for both secondary and higher education (with a few exceptions) is not regulated by admission requirements (Van den Broeck et al., 2020). Nevertheless, the success rate for students from vocational and technical tracks is lower than for those from the general track (Neundorf et al., 2016).

The attainment targets in Flanders state the minimum goals for education that the government considers necessary and are thus an instrument to guarantee the minimum desired quality of education (OECD, 2015). In 2018, there was an overall reform of the attainment targets in secondary schools in Flanders. Sixteen interdisciplinary key competencies were approved (as can be seen in Table 1.1), within which the new attainment targets had to be formulated (Loobuyck, 2021). As a result, a new curriculum with educational objectives in Flemish secondary schools was implemented in September 2019, starting with the first grade (12 to 14-year-olds). The educational providers have to take these sixteen competencies into account and schools have to demonstrate that they do a commitment and make efforts to ensure they reach the attainment targets. This means that schools will be controlled for their results on reaching all the sixteen key competencies with their students. Within this context, it is important to point out that the constitutional court annulled Flanders' new attainment targets for the second and third grade of secondary schools (pupils aged 14 to 18) in 2022. Following the Catholic educational umbrella, the constitutional court agreed that the attainment targets do not leave sufficient room for the realisation of the individual educational project of the school and the teachers, which restricts the freedom of education. A transitional phase is currently going on and by the school year 2024-2025, the new attainment targets should be implemented in the second and third grade.

Table 1.1 Sixteen key competencies, 2018 (Adapted from Loobuyck, 2021)

1. competences in the field of physical, mental and emotional awareness and in the field of physical, mental and emotional health;
2. competences in Dutch;
3. competences in other languages;
4. digital competences and media literacy;
5. social relational competences;
6. competences in mathematics, science and technology;
7. *citizenship including competences in living together;*
8. competences related to historical consciousness;
9. competences related to historical consciousness;
10. *competences in sustainability;*
11. economic and financial skills;
12. legal competences;
13. learning competences including research competences, innovation thinking, creativity, problem-solving and critical thinking, systems thinking, information processing and collaboration;
14. self-awareness and self-expression, self-management and agility;
15. development of initiative, ambition, entrepreneurial spirit and career skills;
16. cultural awareness and expression.

1.5.1 Citizenship education

In line with many other European countries (Eurydice/European Commission/EACEA, 2017), the Flemish Government and Parliament agreed to introduce citizenship education for all students in Flemish secondary schools (Loobuyck, 2021). One of these interdisciplinary key competences is 'citizenship including competences in living together', which is also reflected in different educational goals. Consequently, due to the compulsory character, all teachers are expected to contribute to citizenship education in one or another way. Furthermore, it is important to note that since 2018, one of the educational umbrella organisations, GO! Onderwijs van de Vlaamse Gemeenschap, has decided to include citizenship education as a separate subject in their curriculum and no longer as an integrated cross-curricular topic.

1.5.2 Education for sustainable development

As can be seen in Table 1.1, 'competences in sustainability' is next to citizenship competences, one of the key competences of the curriculum renewal which have to be taken into account. Although these competences do not directly refer to education for sustainable development as a goal as such, there are

clear associations with the principles of ESD. The competences are also in line with UNESCO; the United Nations' specialized agency for education, which endorsed 17 sustainable development goals (SDGs) in the context of Agenda 2030. The SDGs 'recognize that all countries must stimulate action the following key areas – people, planet, prosperity, peace and partnership – in order to tackle the global challenges that are crucial for the survival of humanity' (United Nations, 2018, p. 8) One of the UNESCO's responses to the global challenges is formulated in target 4.7 of the SDGs stating that "by 2030, all learners should acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development" (United Nations, 2018).

In line with the European context (European Commission/EACEA/Eurydice, 2017), citizenship education and education for sustainable development are now explicitly stated in the Flemish curricula. The substantial autonomy of schools and teachers in Flanders offers many opportunities for schools and teachers how to define their educational approach. Hence, how the curriculum is implemented in the classroom remains primarily the responsibility of the teacher. As a result, they can determine the amount of attention paid to citizenship education and education for sustainable development. Consequently, in line with this dissertation, research that addresses in what way schools and teachers develop and implement the new key competences is required. Furthermore, it is important to look at the translation of ESD and citizenship into effective education practices which is part of this dissertation.

Different reasons can be given to consider Flanders; a Western European region with a unique and distinct educational system, as an interesting case to investigate the research questions regarding the role of schools as socialisation agent. There are the recent changes in policy in Flanders, where citizenship education and education for sustainable development are being promoted as important purposes of education and recently strengthened in education. Furthermore, Flanders is an interesting case due to the high autonomy of schools and teachers in what and how they teach.

PART I: DETERMINANTS OF ENVIRONMENTAL ATTITUDES AND BEHAVIOUR

Chapter 2. The Effects of Attitudes on Household Energy Behaviour[6]

Abstract

Several attempts in environmental research have been made to investigate which factors are crucial for people to act pro-environmentally. Yet, research results remain rather inconsistent, especially across countries. The present paper aims to explore whether climate change attitudes and household energy use are associated for European citizens, independently of the country. This cross-national study uses items from the recent ESS 2016 'climate change and energy' module measuring people's attitudes to climate change, and energy preferences at the European level by using a multilevel analysis. I found that at the individual-level, both climate change concern, responsibility and awareness are important to explain variance in energy-saving behaviour, although in different ways. The results suggest that using only variables directly related to attitudes, is too limited to explain household energy behaviour. The present study indicates that gender, income and education have a significant impact on behaviour. At the country level, GDP and unemployment rate seem to predict less in relation to household energy behaviour. Climate change attitudes seem to have an impact on people's energy-saving behaviour, even after controlling for socio-economic characteristics. However, it is important to distinguish between different measures of household energy behaviour.

[6] This chapter is based on the following paper: Verachtert, S. (2022). The Effects of Attitudes on Household Energy Behaviour. A Study of Climate Change Concern, Responsibility and Awareness in European Societies. *Social Science Quarterly, 103*(5), 1221-1233.

2.1 Introduction

Climate change is one of the most urgent global environmental problems the world is facing today (IPCC, 2014, 2018). Within the literature there is a consensus that environmental problems (e.g. climate change, air pollution, biodiversity loss) can only be addressed effectively if there is a recognition of their existence and if all individuals want to act to solve them. In Europe, most people acknowledge the global environmental problems and the responsibility to act (European Commission, 2008). However, according to the widely recognized attitude-behaviour gap, such attitudes do not always turn into behaviour (Juvan & Dolnicar, 2014; Kennedy et al., 2009). Regardless of the numerous theoretical frameworks that have been developed to explain the barriers to pro-environmental behaviour (Kollmus & Agyeman, 2002), the matter is complicated and there is no single model to explain it. Hence, providing a better understanding of the attitude-behaviour gap is a continuous necessity within this field of research. According to climate change research, household energy behaviour contributes substantially to global greenhouse gas emissions (Gardner & Stern, 2002; IPCC, 2018). However, research looking at the relationship between pro-environmental attitudes and household energy use is still unclear (Chen et al., 2016). Most attitudinal behavioural studies related to energy use in the home "focus on income, household size and other structural factors while neglecting the potential relevance of attitudinal factors such as environmental concern" (Enzler & Diekman, 2019, p. 12).

Against this background and following the argument that understanding public attitudes to climate change and energy reduction and preferences across countries is vitally important to a successful transformation to a low-carbon society (Verschoor et al., 2020), the present paper aims to explore whether climate change attitudes and household energy use are associated for European citizens, independently of the country. Seeking to obtain a cross-cultural perspective is motivated by the idea that although the extensive literature on the determinants and outcomes of environmental attitudes and behaviour has contributed to a better insight into how individuals perceive and engage environmental problems, these studies are often restricted to the individual level (Bamberg & Möser, 2007; Bamberg & Rees, 2015). Past cross-national studies focusing on climate change beliefs and concern have only been conducted in a single or small number of countries and comparisons are difficult due to different conceptualizations of climate change dimensions (Poortinga et al., 2019). In the current paper, the European Social Survey (ESS) 2016 is used to explore the following research question: "How are climate change concern, responsibility, and awareness related to household energy behaviour across Europeans societies?". I first compare climate change attitudes and energy use behaviour in the 23 countries included in the ESS study on a descriptive level. Second, I analyse the ESS data by using multilevel models in order to explain the individual and the country-level influences on household energy behaviour. Specifically, this paper tries to understand whether attitudinal factors, such as climate change concern, responsibility and awareness are related to specific energy-saving behaviour. The ESS

data provides a unique opportunity to test the relationships between those variables that are typically not studied together in attitudinal behavioural studies.

2.2 Background

Individual-level and country-level predictors of environmental attitudes

The extensive literature on environmental attitudes has shown that the socio-demographics of gender, education, SES, age and political orientation are all important factors on an individual level. Gender has received much attention in this field of research (Bord & O'Connor, 1997). Women are found to be more concerned about the environment than men which is often explained by the traditional gender socialisation theory where individuals are shaped by gender expectations within the context of cultural norms (Zelezny et al., 2000). Women are socialised to have a motherhood mentality or a stronger ethic of care, which would extend traditional child-and caretaking expectations to a higher concern about the environment (Hunter et al., 2004). However, some researchers have found no gender differences in environmental research (Gelissen, 2007). Another focus in the research on environmental attitudes is the influence of the socio-economic status (SES). Research has generally illustrated a positive relationship between SES and environmental attitudes (Pampel, 2014). People with a higher household income are more environmental concerned than those with a lower income (Shen & Saijo, 2007). Although, research has not brought consensus in this debate (Pampel & Hunter, 2012). Environmental attitudes have also been found to be positively affected by higher levels of education (Kollmuss & Agyeman, 2002). People with higher levels of formal education express higher levels of concern about the environment in general and climate change in particular (Marquart-Pyatt, 2008). Although it is often assumed that education is a measurement for environmental knowledge (Poortinga et al., 2019), an increase in knowledge about environmental problems may raise peoples' concern and awareness but it does not necessarily result in behavioural changes (Whitmarsh, 2011). On the other hand, a lack of knowledge can be a barrier to change behaviour (Kollmuss & Agyeman, 2002). There also have been found strong associations between environmental concern and political orientation (Borick & Rabe, 2010). The left-right wing orientation, characterized by right-wing voters being the least environmental concerned (Olofsson & Öhman, 2006; Poortinga, et al., 2019). Several studies found that younger people are more concerned about environmental problems than older ones (Milfont et al., 2015; Van Liere & Dunlap, 1980) and that older people are less concerned about the impact of climate change (Shi et al., 2016; Whitmarsh, 2011). Age effects have been explained by the fact that older people are more integrated into existing social orders and may have more to lose by changes in behaviour that are needed to reduce climate change (Poortinga et al., 2011). In other studies, age seemed to work in the opposite direction from the usual studies that show greater concern with younger people (Grønhøj & Thøgersen, 2009). Some scholars show that young people hold more positive attitudes towards environmental

issues, but show less pro-environmental behaviour compared with older people (Leppänen et al., 2012; Shen & Saijo, 2008).

Social research also focuses on explaining country-level factors in environmental attitudes (Franzen & Meyer, 2010; Poortinga et al., 2019). Countries differ in economic, political, and environmental features and contexts, which might affect pro-environmental attitudes of individuals (Marquart-Pyatt, 2012). A valuable theory in this field is the 'postmaterial value theory' by Inglehart (1995). Inglehart argued that citizens of wealthier nations tend to have more pro-environmental attitudes because of a general shift from materialistic to post-materialistic values in modern societies. However, some scholars argue that environmental concern is even higher in poorer nations (Gelissen, 2007; Knight & Messer, 2012). According to Franzen and Meyer (2010), explaining country-level differences is still an issue in environmental research.

Attitudes as predictors of environmental behaviour

Over the past decades, social and behavioural scholars have focused on the role of environmental attitudes in the formation of environmental behaviour, resulting into a vibrant field of research (Best & Mayerl, 2013). They were often disappointed as the relationship between attitudes and behaviour was found to be weak (Bamberg, 2003). Although the link between attitudes and behaviour has been questioned in the literature (Heimlich & Ardoin, 2008), there are different approaches to look at their relation. The oldest and most simple model of pro-environmental behaviour is based on environmental knowledge, leading to environmental awareness and attitudes which lead in turn to pro-environmental behaviour (Kollmuss & Agyeman, 2002). However, while changes in attitudes and values are necessary drivers for action they are insufficient to change pro-environmental behaviour (Arbuthnott, 2009; Marjainé et al., 2011). More recent theoretical approaches such as the one formulated by Bamberg (2003) conceptualize attitudes as an important indirect determinant of environmental behaviour. Furthermore, Duarte et al. (2017, p. 25) argue that it is important to recognize that contextual and relational factors, such as education, family, and peers, have a significant influence in shaping environmental attitudes. Chapman and Sharma (2001) and more recently, Torgler and García-Valiñas (2007) and Coertjens et al. (2010) include also family, socio-economic, and school factors.

The current paper uses the climate change and energy module from the ESS 2016 study, based on Sterns' Value-Belief-Norm (VBN) model (2000). The VBN model states that human values (Schwartz, 1977), together with beliefs regarding climate change and feelings of personal responsibility drive personal preferences for energy supply sources and energy demand reduction. To answer the research question in this paper, three concepts included in Sterns model : (1) awareness (2) concern and, (3) responsibility will be used to examine the extent to which household energy behaviour can be predicted from these three types of attitudes. The first attitudinal item is climate change awareness. Previous research showed that increases in environmental knowledge and awareness did not lead to pro-

environmental behaviour (Kollmuss & Agyeman, 2002). However, people will be more likely to act to address climate change if they believe it poses a risk (Stevenson et al., 2014). It is hypothesized that individuals with more awareness about climate change are more likely to reduce their energy use (H1). The second attitudinal item is climate change concern. Concern has been used interchangeably with other concepts referring to the whole range of environmentally related perceptions, such as environmental values, environmental attitudes, emotions, knowledge, values, behaviour and ecological worldview (Bamberg, 2003; Dunlap et al., 2000) making it difficult to reach consensus on the operationalization (Best & Mayerl, 2013; Xiao & Dunlap, 2007). In this study, climate change concern is specifically related to how worried people are about the climate change. It is hypothesized that individuals who are worried about climate change, are more likely to show energy-saving behaviour (H2). A third study's intent is to test climate change responsibility as a predictor of energy-saving behaviour. How responsible a person feels for the environment is a promising predictor, following Kaiser and Shimoda (1999). It is hypothesized that individuals with a stronger sense of responsibility to reduce climate change are more likely to behave pro-environmentally and reduce their energy use (H3).

2.3. Data and Methods

2.3.1 Data

The analysis is based on the data provided by the European Social Survey (ESS, 2016). ESS data are collected in 23 different countries and it is a cross-section survey with rounds that are conducted every two years. I use data from the ESS climate change and energy module from Round 8 (N = 44,387) from 2016 to examine climate change perceptions and household energy consumption across 22 European countries and Israel (see Table 2 in Appendix).[7] The climate change and energy module contained 39 items measuring people's attitudes to climate change, energy security and energy preferences at the European level.

2.3.2 Measures

Dependent variables

The variety of single energy-saving behaviours and its consequences has generally been neglected in research of energy use in the home (Stern, 2000). Therefore, this study looks at specific energy-saving behaviour and includes two individual-level dependent variables from the ESS module to measure household energy behaviour. The first household energy behaviour question (1) is "In your daily life,

[7] The 23 countries are the following: Austria, Belgium, Czechia, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Russian Federation, Slovenia, Spain, Sweden, Switzerland, United Kingdom.

how often do you do things to reduce your energy use?", on a 6-point Likert scale ranging from 1 (never) to 6 (always). The second household energy behaviour question (2) is "If you were to buy a large electrical appliance for your home, how likely is it that you would buy one of the most energy efficient ones?", measured on a 10-point Likert scale ranging from 0 (not at all likely) to 10 (extremely likely).

Independent variables

Climate change attitudes The first attitudinal item measures climate change awareness "Do you think the world's climate is changing?", included a 4-point Likert scale ranging from 1 (definitely not changing) to 4 (definitely changing).[8] The second item regarding attitudes measures climate change concern "How worried are you about climate change?", with a 5-point Likert scale ranging from 1 (not at all worried) to 5 (extremely worried). In addition to awareness and concern, the model also included climate change responsibility: "To what extent do you feel a personal responsibility to try to reduce climate change?', with a 10-point Likert scale raning from 1 (not at all) to 10 (a great deal).

Socio-demographic variables Following these questions, there was a set of socio-demographic variables at the individual level that will be used as covariates to control for the effect on household energy behaviour. The gender of the respondent is included as a dummy variable with male as the reference category (female = 1). Age, which is centered, is included as the age of the respondent. Our sample is restricted to respondents aged 15-85. The educational level was recoded to three levels (1=primary, 2=secondary, 3=tertiary). I also included income (feeling about households's current income) as a dummy variable (living comfortably or coping on present income=1, living difficult=0). The political ideology is included as a measurement indicating the position of a respondent on a scale from right (0) to left (10).

Country-level variables At the country-level I included GDP per capita (Per capita GDP 2016 converted to measure the purchasing power in each country in dollars) and unemployment rate (percentage). The GDP and unemployment rate variables come from the World Bank database.[9]

2.3.3 Methods

A series of multilevel analyses were applied to answer the predetermined research question: "How are climate change concern, responsibility, and awareness related to household energy behaviour of Europeans citizens?" and to examine which part of the variance in the outcome variables can be attributed to individual and country-level characteristics. The dataset was cleared of missing values for the dependent and independent variables at individual-level and includes respondents from 15-85 years old (N=34,788). The data have a hierarchical structure, with individuals nested in countries, so a linear

[8] Items were recoded to a 3-point scale with 1=definitely + probably not changing, 2=probably changing and 3=definitely changing.
[9] World Bank data available at www.worldbank.org

multilevel approach was used. Two levels were distinguished in the data: the individual level (N=43,788) and the country level (N=24). Multilevel modeling includes residuals at the individual and country-levels. Residual variance can be devided into two parts: between-country variance and within-country variance. In addition to the descriptive statistics, three sets of analyses were conducted to assess country differences in household energy behaviour. First, a null model with no explanatory variables was constructed. The null model can determine the proportion of variance at the individual and the country level. Second, a random intercept model with all individual-levels; awareness, concern, responsibility, political orientation, gender, age, income and level of education, was estimated (model 1). Third, the country-level explanatory variables, GDP and unemployment rate are inserted in the final model (model 2). In this way, I could investigate whether differences among countries with regard to household energy behaviour could be explained by either contextual effects or individual effects.[10]

2.4 Results

2.4.1 Descriptive analyses

Table 1 in the Appendix provide some descriptive statistics (means, standard deviations) of the key variables at individual-level. On average, most respondents acknowledge the climate change (mean is 1.45 on a scale from 1-3). The majority of the respondents are 'somewhat worried' about the climate change (mean 3.04 on a scale from 1-5) and they feel moderately responsible about it (mean 5.68 on a scale from 1-10). The average respondent is rather determined to buy the most energy efficient appliances (mean 7.83 on a scale from 0-10) and do things to reduce their energy use (mean 4.37 on a scale from 1-6). These results indicate the differences between climate change concern, responsibility, awareness and household energy behaviour among European citizens. As we can measure a difference in the frequencies in the two items regarding energy use and in order to assess household energy use precisely, three different analyses, each with a different dependent variable, will be conducted: behaviour 1, behaviour 2 and finally the sum of the two individual dependent variables, behaviour 1+2. All the depedent variables are recoded on a scale of ten. The first regression model was constructed with the dependent variable behaviour question 1. In the second regression model, the dependent variable was behaviour question 2. The third regression model was conducted with the sum of the two dependent variables (behaviour question 1+2). The mean scores per country on the independent and dependent individual and contextual-variables and standard deviations included in the multilevel models are also reported in Table 2 in Appendix.

[10] As a robustness test, I also controlled for fixed effects for countries in a standard regression. The countries were added as dummy variables in all the three different models, with Austria as the reference category (Table 3 in Appendix). The results show that the effects of climate change attitudes are mediated by the differences across the countries.

Looking at the country level, some differences can be noticed. Responses to the first question about pro-environmental behaviour related to energy use indicate that Hungary, on average has the highest value on 'How often do you do things to reduce your energy use?'. This value is surprisingly high (5.47). We should take into account that the standard deviation is also rather high (2.79). Israel (3.91) and Iceland (3.95), on the other hand has the lowest score. The second question regarding pro-environmental behaviour 'how likely to buy the most electrical appliance for your home?' indicates that Germany (8.46) has the highest score while The Russian Federation (6.38) and Iceland (6.88) score much lower. Climate concern ranged from 2.66 in Estonia to 3.53 in Portugal. The respondents from Portugal also have the highest mean score of awareness of climate change (2.77), in contrast to Czechia (2.33). Responses to the question about responsibility indicate that French respondents (6.97) feel the most responsible to reduce climate change. The lowest mean score was observed for Czechia (3.40).

2.4.2 Multilevel analyses

In addition to the descriptive statistics to assess country differences in household energy use, three sets of analyses were conducted. The first model estimated in the multilevel analysis is the null model, where no variables are included and only the intercept is random. The ICC (intraclass correlation coefficient), completed for each dependent variable of household energy behaviour separately, indicate that 3.47 % of the total variance in behaviour 1, 5.60 % of the total variance in behaviour 2, and 5.66 % of the total variance in behaviour 1+2 can be attributed to between-country differences. The chi-square for the LR (likelihood ratio) test comparing the null model with two levels to the one-level equivalent is respectively: 1011.30; 1618.07 and 1629.88 and significant. Although the total variance contributed to between-country differences in the dependent variables is rather small, the LR test indicates that a two-level model is necessary and that the variation between countries, in adtion to variation within countries, cannot be ignored. The null model indicates significant variation among countries in their household energy behaviour that, presumably, can be explained by individual and country-level characteristics. The intercept in the null models (6.98; 7.82; 7.40) is the average of the country mean scores for behaviour1, behaviour2 and behaviour1+2.

Before adding country-level predictors, we must in addition to the dependent variables, add the individual-level variables into the model (model 1). The variables measured at the individual level included climate change awareness, responsibility and concern. I also control for gender, age, income, political ideology and education at the individual-level. Age is grand mean centered.[11] At the country-level, I included the GDP and unemployment rate. At the individual level, the dependent variable 'behaviour 1' was included in the model for the first multivariate analysis. Model 1 shows that climate

[11] Centering variables is advised in multilevel analysis to hold compositional differences in individual characteristics constant.

change awareness, concern and responsibility are all significant predictors of energy reduction behaviour. The results show that the relationship between concern (b =.222) and energy reduction behaviour seems to be the strongest, followed by awareness (b =.169) and responsibility (b =.111). In the second analysis I added the dependent variable 'behaviour 2'. Awareness, concern and responsibility were again significant predictors of buying energy efficient appliances. The results show that awareness (b =.292) is the strongest, followed by concern (b =.171). Responsibility (b =.129) seems to explain the least. The third analysis includes the dependent variable as the sum of the two former dependent variables (behaviour 1+2). Again a significant effect is noticeable. It found that both awareness concern and responsibility were significant predictors of energy-saving behaviour. Correlations ranged from .120 for responsibility and .230 for awareness. Awareness seems to predict energy-saving behaviour the most, while responsibility explains the least. Our results provide strong evidence for an association between climate change awareness, concern, responsibility and energy-saving behaviour. However, it is clear that it is relevant to distinguish between different measures of household energy behaviour.

I also control for socio-demographic measures that have been found to influence household energy behaviour. A positive correlation between gender and energy-saving behaviour within all three different models can be observed. The respondents were asked to identify themselves as male or female. Dummy variables have been added to check for possible gender differences (coded as 0 = male, 1=female) with the expectation that women are more pro-environmental. In addition, the gender dummy allows an analysis of the possible effects of gender. In fact, gender had a significant effect on energy-saving behaviour with coefficients ranging from .132 in the first model to .138 in the third model. Women report a higher sense of energy-saving behaviour than men. Other research has already found that higher education leads to people who are more concerned about the environment (Boeve-de Pauw, 2011; Meeusen, 2014). Therefore, I also included 'highest level of education' in our analyses. The variable 'years of education' was measured as a dummy variable. I expect that the level of education is positively related to the dependent variable. The results indicate that the level of education indeed influences household energy behaviour with correlations for higher education ranging from .268 in our first analysis to .531 in the second analysis. Indicating that education is one the most important factors in predicting environmental behaviour related to how likely people would buy one of the most energy efficient electrical appliances. Besides the socio-demographic variables, I controlled also for the political orientation on a left-right scale. The control variable 'political ideology' was measured on a scale from right to left, ranging from 0 (right) to 10 (left). I expect that people who place themselves more on the left side, are more pro-environmental and show more energy-saving behaviour. Although political ideology is often described as one of the key predictors of differences in pro-environmental behaviour, the results show that it influences only to a very small extent. In addition, political ideology was not significantly correlated with household energy behaviour in the second and third analysis. This means that left oriented people do not show significantly more energy-saving behaviour. The effect of

age was negligible, although significant (.017; .019; .018) Finally, income seems to predict household energy behaviour in different ways, depending on the action itself. With behaviour 1 (In your daily life, how often do you do things to reduce energy use), people who live comfortable score lower (b=-.188) on reducing energy use than people who have some difficulties with their income. Looking at behaviour 2, another result can be observed. In comparison to behaviour 1, people who live comfortable score higher on this energy-saving behaviour and are more likely to buy the most energy efficient electrical appliances (b= .149). To conclude, after controlling for age, income, level of education, political ideology and gender, this study found that both climate change awareness, responsibility and concern were still significant predictors of household energy behaviour.

At the country level, Table 2.1 shows that there is a reducation of the variance compared to model 1 due to including these country-level variables. GDP is significiant and negatively related to the dependent variables in all three analyses although very small (-.008; -.014; -0.11). People living in countries with a lower GDP tend to show less energy-saving behaviour. No significant effect of unemployment was found, indicating that the proportion of unemployment in a country does not affect household energy behaviour. In Table 2.1 I also report the deviance of each model per analyses, telling how well the model fits the data. Inclusion of the country characteristics results in a significant improvement of the model fit (Model 1 – Model 2) in all three analyses. However, the within-country differences are much larger than the between-country differences (3.47, 5.60 and 5.66 per cent of the total variance). The between-country differences are best explained by the wealth of a country, measured by per capita GDP. The results show that on average, richer countries have higher levels of energy-saving behaviour than poorer countries.

Tabel 2.1. Multilevel regressions for household energy behaviour

	Behaviour 1 (reducing energy use)		Behaviour 2 (buying the most energy efficient appliances)		Behaviour 1+2	
	Model 1 (b/se)	Model 2 (b/se)	Model 1 (b/se)	Model 2 (b/se)	Model 1 (b/se)	Model 2 (b/se)
Level 1 individual-level						
Awareness	.169*** (.019)	.169*** (.019)	.292*** (.021)	.292*** (.021)	.230*** (.016)	.230*** (.016)
Responsibility	.111*** (.004)	.111*** (.004)	.129*** (.005)	.121*** (.005)	.120*** (.004)	.120*** (.004)
Concern	.222*** (.013)	.218*** (.013)	.171*** (.015)	.170*** (.015)	.195*** (.011)	.194*** (.010)
Age (centered)	.017*** (.000)	.017*** (.000)	.019*** (.000)	.019*** (.001)	.018*** (.000)	.018** (.000)
Education (reference = primary)						
Secondary	.168*** (.027)	.169*** (.037)	.372*** (.031)	.373*** (.031)	.270*** (.023)	.271*** (.023)
Tertiary	.268*** (.027)	.269*** (.028)	.531*** (.031)	.532*** (.031)	.400*** (.023)	.401*** (.023)
Sex (Female=1)	.132*** (.020)	.131*** (.020)	.144*** (.022)	.143*** (.022)	.138*** (.017)	.137*** (.017)
Ideology	.021*** (.005)	.020*** (.005)	-.009 (.005)	-.009 (.005)	.006 (.004)	.006 (.004)
Income (Living comfortable=1)	-.188*** (.027)	-.187*** (.027)	.149*** (.030)	.149*** (.030)	-.020 (.023)	-.020 (.023)
Level 2 country-level						
GDP per capita in $US, 2016 (/1000)		-.008** (.002)		-.014* (.004)		-.011*** (.003)
Unemployment rate, 2016		.023 (.015)		.036 (.029)		.023 (.017)
Explained variance intercept						
Level 1	3.36 (.026)	3.245 (.027)	4.21 (.032)	3.969 (.033)	2.390 (.018)	2.273 (.019)

Level 2	.094 (.029)	.021 (.008)	.270 (.081)	.073 (.025)	.141 (.042)	.015 (.005)
Cons	4.201*** (.094)	4.338*** (.174)	4.374*** (.132)	4.735*** (.290)	4.288*** (.097)	4.538*** (.158)
Log-likelihood	- 70305.707	- 56750.312	- 74209.004	- 59602.352	- 64384.125	- 51717.39
LR test vs. linear model	691.030 p-value <0.01	141.650 p-value <0.01	1685.200 p-value <0.01	457.000 p-value <0.01	1470.640 p-value <0.01	165.600 p-value <0.01

Note: Dependent variable: Energy behaviour question 1 on a 10 point scale, Energy behaviour question 2 on a 10 point scale, Energy behaviour question 1+2 on a 10 point scale, * p<.050, ** p<.010, *** p<.001. The values in the brackets contain the standard errors of the estimations.

2.5 Discussion

Climate change is seen as one of the most serious challenges these days and this is reflected in the amount of research focusing on pro-environmental behaviour and attitudes. However, this research revealed some new insights within the current research, by indicating the effects of some variables at an individual and a country-level. The ESS module 'climate change and energy' from 2016, provides a unique opportunity to look at pro-environmental behaviour and attitudes of European societies regarding climate change and energy reduction. The aim of this paper was to explore the relation between climate change concern, awareness, responsibility and household energy behaviour and to examine whether the within-country, individual-level relationship between pro-environmental behaviour and pro-environmental attitudes varied across societies, and to what extent the country-level factors can explain variations, by using multilevel analysis. The data analyses focused on testing three hypotheses. In summary, the data analyses provides correlational support for all three hypotheses. It was hypothesized that respondents with more awareness about climate change are more likely show energy-saving behaviour. Generally, this hypothesis can be confirmed. The results underline the role of awareness about climate change as a determinant of energy-saving behaviour. Specifically, how likely people would buy one of the most energy efficient electrical appliances for their home is associated to differences between environmental awareness. On the other hand, we find evidence that the feeling of responsibility of individuals matters. Given the results, we can conclude that the second hypothesis is supported. Individuals with a stronger sense of responsibility to reduce climate change, are more pro-environmental and thus more likely to show energy-saving behaviour. Moreover, how likely people would buy one of the most energy efficient electrical appliance for their home is associated to differences between climate change responsibility. There is strong evidence to support the third hypothesis as well. Another predictor of energy-saving behaviour is concern, individuals who are worried about climate change, show more energy-saving behaviour. In contrast to awareness and responsibility, concern is more associated with doing things to reduce your energy use. To conclude, climate change concern, awareness and responsibility; e.g., climate change attitudes, seem to have an impact on people's energy-saving behaviour, even after controlling for socio-economic characteristics. However, it is important to distinguish between different measures of household energy behaviour.

As already mentioned, it is also important to consider other possible effects on pro-environmental behaviour related to energy use in the home. In addition to test the hypotheses, I controlled for age, gender, education, income and political orientation. The results remain robust after controlling for these variables. The socio-demographics factors "education", "income" and "gender" have strong importance as predictors of household energy behaviour. The education level positively affects energy-saving behaviour. Other previous studies have also shown that high levels of education correlate with environmental concern and behaviour (Givens & Jorgenson, 2011; Olofsson & Öhman, 2006). Furthermore, the results have examined the differences between men and women. The findings indicate

that women show more energy-saving behaviour, which is indeed in line with previous studies (Goldman et al., 2006; Torgler & Valinas, 2007; Zelezny et al., 2000). Although previous studies regarding the influence of income are mixed (Casalo & Escario, 2018; Shen & Sasijo, 2008) the analyses show some important differences in the effect of income on household energy behaviour. The results show that people with a lower income are not necessarly less pro-environmental than people with a higher level income, it is clearly depending from the energy behaviour itself. Age and political ideology had limited importance in this study although other studies show that pro-environmental engagement is greater among people who endorse liberal political ideology (Malka et al., 2009; McCright & Dunlap, 2011; Milfont, 2012; Wood & Vedlitz, 2007). Finally, I wanted to examine how country-level characteristics are related to household energy behaviour within the European context. The results show that including the two country characteristics does not validate the effect of country on the individual outcomes. Differences observed among individuals within a country are much larger than the differences observed between countries in terms of the average level of energy-saving behaviour. Although some of the country-level variables is explained by the models, a proportion of variation remains.

The descriptive results indicate that, in Europe in general, most respondents know climate is changing but they are less worried about climate change. Furthermore, they feel moderately responsible about the climate change. Looking at the household energy behaviour of Europeans, the average respondent is rather determined to buy the most energy efficient appliances and wants to do things to reduce your energy use. One unique aspect of this study is the multinational sample. The findings show that the climate change attitudes across the 23 European countries are largely consistent. This is in line with previous research (Marquart-Pyatt, 2008), demonstrating that the individual-level sources for environmental perceptions, including demographics and knowledge, are largely consistent across nineteen industrialized countries. The present study shows some limitations. One issue concerns the questions measuring household energy behaviour. Some questions are relatively vague, eg., ‘energy use reduction’ is not clearly specified. Respondents may think of different kinds of reductions or actions. Some scholars (Corraliza & Berenguer, 2000; Kaiser & Gutscher, 2003) argue that one critical determinant for the attitude-behaviour association is the degree of control one has over engagement in behaviour. When environmental behaviour is easier to engage in, the relation between attitude and behaviour increases. However, as this was a large scale comparative survey, it might indeed form quite a challenge to develop questions that are equally clear and possible in each and every society under investigation. Despite this limitation, the results provide the first assessment of the relation between climate change attitudes and household energy behaviour across European societies.

Chapter 3. Did the Covid-19 Pandemic Reduce Attention to Environmental Issues?[12]

Abstract

Theories on issue competition assume that there is only a limited number of issues that a person prioritizes simultaneously. In this research note, we test this mechanism by using a panel study that was conducted among Belgian parents in 2019 and 2020. Between the two observations of the study, the country suffered a severe health crisis due to the COVID-19 pandemic. We investigate whether this crisis reduced the priority of environmental issues among respondents. Our results show that attention for the economy strongly decreases respondent's environmental attitudes while no significant associations were observed between priority for health and changes in environmental attitudes and priority. Furthermore, we show that people seem to behave more environmentally friendly during the COVID-19 pandemic than before, which is a rather unexpected result given mechanism of issue competition.

[12] This chapter is based on the following paper: Verachtert, S., Stiers, D., & Hooghe, M. (2022). Did the COVID-19 Pandemic Reduce Attention to Environmental Issues? A Panel Study Among Parents in Belgium, 2019-2020. *Politics of the Low Countries*, *4*(1), 100-115.

3.1 Introduction

For most citizens, social and political issues will not receive all that much time and attention (Zaller, 1992). The topics that are being singled out to receive scarce cognitive resources, will be the ones that are considered as being most important by the actor (Wlezien, 2005). The literature on issue salience suggests that both citizens and political systems can only prioritize a limited number of issues simultaneously. It has been argued that sudden negative events such as externally induced crises tend to take priority, crowding out other issues from their place in the limelight (Rozin & Royzman, 2001). Thus far, most of the studies on issue competition deal with attention in the mass media, or with a place on the political agenda, but from a cognitive perspective a similar dynamic should be present on the individual level, too (Zaller, 1992). Moreover, previous research on issue competition has focused on the obvious example of the economy and economic crises (Cho & Young, 2002; Singer, 2013). As a result, we do not know whether the mechanism of issue competition also works on the individual level, and whether it applies to other examples of negative events or crises. Therefore, the aim of this research note is to examine the effects of a suddenly imposed major health crisis and high impact event on individuals' issue priorities. More specifically, for the purpose of this study, we test whether the COVID-19 crisis that started in 2020, had a negative effect on the priority of and attention to another major issue: climate change. In the years prior to 2020, climate change gradually gained importance, both among public opinion as within the international community, and this led to a wave of protest in industrialized societies (Boulianne, Lalancette, & Ilkiw, 2020). Environmental issues (e.g., climate change, protection of the environment) are key issues of concern in many countries around the world (Milfont & Schultz, 2016). An obvious question in the context of environmental concern is whether the COVID-19 pandemic, which rapidly evolved into a major social and political crisis, has led to a downgrading of the environment as an important priority. At present, there are only some studies available on whether the literature on issue competition can helps us to explain how the pandemic crowded out attention for climate change in the mass media (Rauchfleisch, Siegen & Vogler, forthcoming). This finding about the mass media, however, is not automatically also valid for public opinion as a whole, and therefore it is important to investigate whether citizens changed their attention for environmental issues due to the COVID-19 outbreak. Our main research question therefore is to what extent the COVID-19 pandemic reduced concern about climate change and giving priority to environmental issues?

Although the COVID-19 pandemic is not structurally different compared to other previous crises and pandemics (e.g., the financial Crisis of 2008 and subsequent years), this study wants to examine issue competition theory in the context of the COVID-19 pandemic because of its global nature and its unprecedented impact on almost all domains of life, including employment, culture, family life, and health. Globally, COVID-19 has an extremely large impact on the lives of citizens, not just because of

the health risk, but also because of the experience with isolation, social distancing, lockdowns and various national and international restrictions (Baker et al., 2020; Murray & Piot, 2021). If issue competition does occur, we would expect it in such extreme conditions. Empirically, compared to other research in the field of issue competition, this paper offers a contribution to the literature on issue competition by making use of a unique two-wave panel data survey, a format that is rather essential if one wishes to investigate the effect of an external event like this. The 634 panel respondents consisted of parents of school-age children, set up as a part of a study on environmental concern among pupils and their parents. The vast majority, ca. 78 % (E. Vloeberghs, Statbel, personal communication, October 12, 2021) of the adult population in Belgium has children. This means that our sample of parents covers a substantial majority of adults, but self-evidently we cannot make any claims about generalizability toward the full adult population. However, our research covers the majority of the population of Belgian parents. The panel survey is unique in the sense that the first wave was implemented well before the start of the COVID-19 pandemic while the second wave was conducted after the initial wave of the pandemic in Belgium, a country that has been seriously affected by the pandemic. This setting allows us to go beyond investigating differences in attention for the environment, as we can investigate for which respondents we observe *change* in priority for environmental issues. Doing so, the study provides a unique insight in changes in people's issue priorities during a major health crisis.

3.2 Literature

3.2.1 Issue Competition

Most citizens tend to have a limited ability to process information about social and current events (Zaller, 1992). Citizens are sometimes characterized as 'cognitive misers', who try to economize the intellectual effort needed to keep up with a rapidly evolving world (Peffley, Feldman, & Sigelman, 1987). This view implies that there could be a zero-sum relation between the priority of different topics competing for attention. To express it differently: if one topic increases in salience (i.e., the level of importance placed on a given issue (e.g., Burden & Sanberg, 2003)), it is assumed that other topics will necessarily decrease in priority (Zhu, 1992). Moreover, if one topic rises in visibility and importance on the agenda, other issues are given less attention in the media, the popular discourse, and to voters (Zaller, 1992).

The mechanism of issue competition among public opinion has been well document within the field of economic voting. There is an ongoing debate within this literature about whether an economic crisis increases the priority of the economy (Singer, 2013). Some scholars argue that a weak or volatile economy increases attention for the economy (Bloom & Price, 1975; Cho & Young, 2002; Singer, 2011), while other studies claim that the economy is always an important issue to voters (Duch & Stevenson, 2008; Fiorina & Shepsle, 1989). A more recent study from Singer (2013) argues that voters are more likely to emphasize importance for the economy during periods of bad or volatile economic

performance. The study confirms that voters' attention to economic issues is not stable but changes systematically. Moreover, during a period with a weak economy in which the priority of the economy increases in people's minds, voters are distracted from social policy, foreign affairs and issues related to the environment (Singer, 2013). Hence, the literature on the salience of the economy shows that, at least for some topics, issue salience seems to be a zero-sum game. Therefore, next to the first aim to examine the effects of a suddenly imposed major health crisis on individuals' priorities, our second goal here is to test whether the mechanism of a zero-sum game manifests itself in other crises and for other issues than the economy as well.

3.2.2 Concern for the Environment

Most previous studies on issue competition have been based on the effects of an economic crisis, as this is indeed the kind of crisis that contemporary industrialized societies will experience most frequently. We do not know, therefore, whether findings from these studies can be generalized toward the effects of other externally induced crisis experiences, and therefore our aim is to investigate the effects of a sudden health crisis, on a scale that Western societies had not experienced since decades. The aim of this study is to examine another important current policy issue: climate change and other environmental issues. We want to further investigate how the environmental concern of the Belgian population could also be subjected to the mechanism of issue competition, as it is generally considered a long-term problem with real-life consequences for most citizens after a considerable delay of time. We know from previous research that there is indeed a widespread concern about this issue among public opinion in industrialized societies (Bergquist & Warshaw, 2019; Egan & Mullin, 2017; Lewis, Palm, & Feng, 2018; Scruggs & Benegal, 2012). However, most of the existing literature on public opinion on climate change, neglected to include the priority of the issue (Crawley, Coffé, & Chapman, 2019). It is important to note in this regard that public concern about climate change can have real life consequences on climate policy. Studies have shown that governments are more likely to implement a strong climate policy when they have the impression that citizens are actually concerned about this issue (Burstein, 2003; Tjernström & Tietenberg, 2008). However, this relationship cannot always be taken for granted. Issues like gun control, immigration and climate change have regularly gotten attention in the United States for instance, with little to no policy response (Bromley-Trujillo & Poe, 2020).

For an empirical study on the occurrence of environmental concern, it is important to note that there are a number of theoretical perspectives on the nature of this concern. While some researchers consider environmental concern as a general attitude (Bamberg, 2003), others highlight the fact that this concept is in fact multidimensional. According to Dunlap and Jones (2002, p. 485), environmental concern can be defined as the following: "the degree to which people are aware of environmental problems, support efforts to solve the problems, and are willing to contribute personally to the solution". As is clear from

this definition, environmental concern includes different dimensions, including attitudes and behaviours, and therefore, we will use a full set of indicators to operationalise this concept. It is also noteworthy that there has been an example where concern for climate change decreased in priority because of a crisis. In 1972, the United Nations Conference on the Human Environment stated that concerns about the global environment should dominate the political agenda in the years to come (Strong, 1973). However, the economic crisis that started in 1973 quickly pushed away the environment from the political agenda (Hooghe, 1991). The environment only made its reappearance on the global political agenda with the publication of the Brundtland report in 1987 (Brundtland, 1987). We test whether the same mechanism applies in people's minds in the COVID-19 pandemic in Belgium.

3.2.3 The case of Belgium

The current study was implemented in Belgium, a country that can be seen as an average European country. From a policy perspective, the Belgian government tends to follow European rules and policies in order to mitigate climate change, and with regard to public opinion, Belgian youth has been quite active in various protests on climate change (Maurissen, 2020). With regard to pro-environmental behaviour, concern and responsibility towards climate change, Belgian citizens score above average compared to other European countries (European Social Survey, 2016).

Belgium was one of the worst victims of the COVID-19 pandemic during the first months of the pandemic, with death rates per capita reaching the same magnitude as France and Spain (ECDC, 2020). Citizens of Belgium, therefore, had every reason to be concerned about the spread of the virus, rendering the country a well-suited case to investigate the priority of climate change and other environmental issues.[13] Following our overview of the existing literature, we hypothesize that the COVID-19 pandemic reduces the priority and concern of environmental issues. Specifically, we hypothesize that citizens who are most concerned about the impact of the pandemic on the health-system and the economy will become less and less involved in the environmental issue.

3.3 Data and Methods

Our data were collected as part of a broader survey on environmental education in Belgium – i.e., the VALIES project. For this project, a total of 2,565 children aged from 10 to 14 years old from 47 different Flemish primary and secondary schools in each of the five Flemish provinces were recruited for the

[13] It is important to note that in June, July and August 2020 which was the time period of our data collection of the second wave of the survey, the number of cases, deaths and hospital admissions of COVID-19 were lower compared to the first months of the pandemic. Between the 1st of June and the 31st of August 2020, Belgium counted 534 deaths, 2,038 hospitalisations and 27,066 confirmed COVID-19 cases on a population of about 11 million people (Sciensano, 2021).

survey's first wave.[14] Every child who participated in the VALIES project filled in a survey in the classroom in September 2019. In addition, each student received an additional paper questionnaire with similar questions, which was handed to one of the parents for completion. The focus of our investigation is on this group of parents. Both parents and children had a choice between completing a paper survey or an online survey.[15] Four weeks later, a first reminder was sent to the parents via the teachers.

In order to recruit parents for the second wave survey, the researchers asked the respondents' approval and contact details to take part in the second wave in June 2020 (8 months after the first survey wave). For this project, 2,565 parents were contacted by their children to fill in the first survey. In total, 1027 parents from the VALIES project (a response rate of 40.04 %) filled in the first survey, and 895 parents from the project agreed to participate in the second wave survey. In June 2020, we contacted the parents for the second wave. Again, a first reminder letter was sent four weeks later, and another four weeks later a second reminder was sent, with inclusion of a hard copy of the survey. The second sample consisted of 634 parents (551 parents of the project and 83 parents of the control group). This means that panel attrition stands at 39.96 per cent for the entire group.[16] In all, our final parent sample included 634 participants who participated in both the first and the second wave. 78 % of the respondents were mothers, 21 % were fathers and 1 % were other participants (e.g. grandparent, foster parent).[17] Parents' mean age is 43.43 years (SD = 5.60).[18] The youngest respondent in our study was 31 years old and the oldest 71 years old. Details about the age distribution, can be found in Appendix D. For this analysis, we only include full panel participants, i.e., parents that participated in both waves of the panel, before

[14] Belgium is a federal country, where education falls under the competence of the language communities. The current study was conducted in the Dutch language education system only, which accounts for ca. 60 % of the Belgian population, with the other 40 % being comprised in the French or German language system.

[15] For the main analysis, we controlled whether the paper/online format made a difference for our results (Appendix C). In total 47 % or our panel sample filled in the paper survey while 53 % opted for the online survey. The results show that the format used to fill in the questionnaire; online or offline, did not have any substantively effect on the results in the analyses.

[16] It is important to note that attrition was only slightly influenced by socio-economic status. 59.75 % of the full panel respondents had higher education credentials, compared to 49.06 % of the respondents who participated in the first wave only.

[17] As expected, there was an overrepresentation of women in our sample, as is common in surveys starting within a school context.

[18] In our survey sample 93% of the respondents indicated that Dutch was their main spoken language at home while the remaining 7% speaks mainly another language at home. Looking at the education level, 5% of our respondents have a low level of education(no education, primary or lower secondary), 35% has completed middle education (upper secondary education or post-secondary education) as their highest education level. High-income groups were overrepresented: 60% completed higher education (bachelor or above). Parental income was assessed as the subjective household income. Respondents were asked to describe their family income and had to indicate how easy or difficult it was to live with their income. 50% indicated that it was easy to live with their family income while 42% stated it was nor easy nor difficult to make ends meet. 7% indicated it was difficult to cope and less than 1% mentioned it was very difficult to live from the household income. In general, therefore, it has to be acknowledged that the panel respondents have a higher socio-economic status than the general population of Belgium.

and during the COVID-19 pandemic.[19] This panel design offers us a unique way of looking at *changes* in people's attitudes between the two survey waves, which in this case means before and after the outbreak of the COVID-19 pandemic. This offers us a more solid test of the issue competition mechanism than studies that were fielded during the pandemic itself, and which can only look at differences in levels of priority instead of changes.

3.3.1 Measures

In order to answer our research question by investigating changes in respondents' concern about the environment, we focus on two reliable and one-dimensional measurement scales covering respectively attitudes and behaviour. Details about all variables are included in Appendix A. The first dependent variable is a an attitudinal measure. Respondents were asked to indicate to what extent they agree with the statement 'all attention for the climate change is exaggerated', 'more attention is needed for the protection of the environment', on a 5-point scale ranging from fully agree to fully disagree. A third item measures 'government expenditure for environmental policy should be increased or decreased' on a scale ranging from "much less" to "much more". The fourth and the fifth indicators measure the respondents' interest in climate change and protecting the environment respectively – both on 4-point scales. As these five attitudes are substantially correlated (see Appendix A), we create one measure of environmentally attitudes as an index score.[20] The second indicator of interest is a behavioural measure. Respondents were asked to indicate how often they engage in certain behaviours, three of which directed towards their environmentally friendly behaviour (i.e., sorting waste, sorting organic waste, and reducing waste). As these behaviours are strongly correlated (see Appendix A), we create one measure of environmentally friendly behaviour as an index score.[21]

These two dependent variables were chosen because of their connection with environmental issues. An important note that needs to be made about the dependent variables, is that the measurement scales differ between the different indicators; whereas some questions had a 4-point scale, some others had a 5-point scale. Therefore, for reasons of comparability, we rescaled all dependent variables to range from a minimum value of 0 to a maximum value of 1. The main test of our research question will be to test whether the values of these variables changed significantly between the first and second survey waves.

Besides testing changing concern about the environment using the measures described above, we also test which respondents were more likely to change than others. To do so, we use two indicators of issue priority, which were only included in the second wave of the panel. Respondents were asked to evaluate

[19] This statement has been phrased in a negative way to limit social desirability in the answers, and is reversed so that higher answers denote more attention for the environment.
[20] In Appendix B, we show the results for the different attitudes separately, and these are in line with the results shown here.
[21] In Appendix B, we show the results for the different behaviours separately, and these are in line with results shown here.

the importance of two important issues (i.e.., health and economy) to which people were exposed to during the COVID-19 pandemic, in trade-off with the importance of the environment. These trade-off questions have been shown to provide a good measure of respondents' environmental concern (Kenny, 2021). The priority of health was measured by the item 'our own health is more important than the climate/environment'. Answers could be given on a 5-point Likert-type scale ranging from 1 (totally disagree – i.e., not only concerned about health) to 5 (totally agree – i.e., mostly concerned about health). The average score on this item was 3.23, indicating that respondents in general do not clearly prioritize the environment or their own health. The level of importance of the economy was measured by the item 'to save our economy we should postpone green measures'. Answers could vary from 1 (totally disagree – i.e., not only concerned about the economy) to 5 (totally agree – i.e., mostly concerned about the economy). These two questions allow respondents to indicate which issues are personally important to them, making an explicit trade-off with the alternative option. The average score on this item was 2.47, which is close to the middle of this scale, suggesting that opinions on this specific question, too, tend to be rather ambiguous. In the regression analyses (see below), we add several covariates to control for their impact in changes in priority. First, we include the standard socio-demographics age and sex (1=female). Furthermore, we control by the respondent's position in society by including educational level and income. Education level variable has 3 categories, ranging from 0 (low), 1 (middle) to 2 (high; see Appendix A for more details). Income is included as a self-reported measure of how comfortably the family of the respondent can live with the current family income. We also control for participation of the respondent's child in the main environmental education project because this could have affected their environmental concern, even though most of the project was cancelled due to the pandemic.[22]

3.3.2 Method

Our main research question is to investigate whether concern for the environment decreased during the first months of the COVID-19 pandemic. As a most straightforward test, we compare respondents' scores from the first and the second survey waves using paired sample t-tests. All variables have been coded in such a way that higher levels indicate a higher concern for the environment. It should be noted that the dependent variables are left-skewed, with as a result that there is more than sufficient room for a decrease, without any risk for a floor effect. In a second step, we examine to what extent a high priority

[22] We also wanted to test our models with an extra independent variable measuring the exposure of the COVID-19 pandemic. By doing so, we could actually look at individual respondents whose life had been considerably uprooted because of the events. We tested our model with two extra independent variables 'change in occupational status' and 'change in household income'. The results are reported in Appendix E and show a small significant effect of change in occupation for environmental attitudes. However, due to the limited sample of respondents that have experienced these changes, the two independent variables were not included in the main analyses.

of health or the economy respectively can explain people's changing concern about the environment. To do so, we first calculate difference scores of people's attention for the environment between the two waves – higher scores indicating a (stronger) increase in attention, lower scores indicating a (stronger) decrease. We then include these differences as dependent variables in a series of OLS regression models. In a first model, we include our independent variable of interest (salience of health or the economy, respectively); in a second model, we include our control variables. The expectation in these models is that changes in concern for the environment will be most pronounced among respondents who prioritise health and the economy over the climate.

3.4 Results

3.4.1 Issue Attention for the Environment and Climate Change

First, we test whether attention for the environment and climate change decreased during the COVID-19 pandemic. We compare the average answers to the different indicators of interest between the first survey wave (September 2019; before the pandemic) and the second survey wave (June 2020; during the pandemic). First, we present the results of paired sample t-test for our two respective sumscales. The results are summarised in Table 3.1 – note that both scales have been rescaled to range from 0 to 1. The results show mixed support for our expectation that the pandemic decreased concern about the climate. As can be seen in Table 3.1, of our two measures of attention and priority for the environment and climate, the sumscale of behaviours shows a significant increase between t1 and t2. People seem to behave more environmentally friendly during the pandemic than before which is a less expected result. For the environmental attitudes, we do not find evidence for a significant change.

Table 3.1. Paired sample t-tests change in sumscales

	Survey wave 1	Survey wave 2	Difference between waves
Environmental attitudes	0.737	0.731	-0.006
Environmental behaviour	0.864	0.878	0.012*

Note. Average scores on the different indicators in the two survey waves respectively. Paired sample t-test: significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

3.4.2 Explaining Changes in Concern for the Environment

Next to the change in individuals' issue priorities, we also test whether there really is a zero-sum relation between the level of attention for competing issues. The expectation is that the level of importance attached to the 'new' issue is positively associated with the steepness of the decline. In order to test the occurrence of this mechanism, we estimate a series of regression analyses, where the difference in the environmental measurements between t1 and t2 serves as the dependent variable. As explained above, we test the effect of the increasing priority for two issues that have been particularly prominent during the COVID-19 pandemic: health and the economy. We expect that the priority for health and the economy will be negatively related to the evolution in respondents' concern about sustainability. The results are summarised in Table 3.2 for health and Table 3.3 for the economy.

Table 3.2. Explaining changes in concern about the environment with attention for health

	(1) Attitudes B (s.e.)	(2) Attitudes B (s.e.)
Health more important than climate	-0.008 (0.004)	-0.008 (0.005)
Sex (ref.=male)		-0.008 (0.012)
Age		-0.001 (0.001)
Education: low		
Middle		0.015 (0.021)
High		0.009 (0.021)
Income		0.001 (0.007)
School child in project		0.007 (0.013)
Constant	0.019 (0.015)	0.043 (0.054)
N	579	574
R^2	0.005	0.009

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

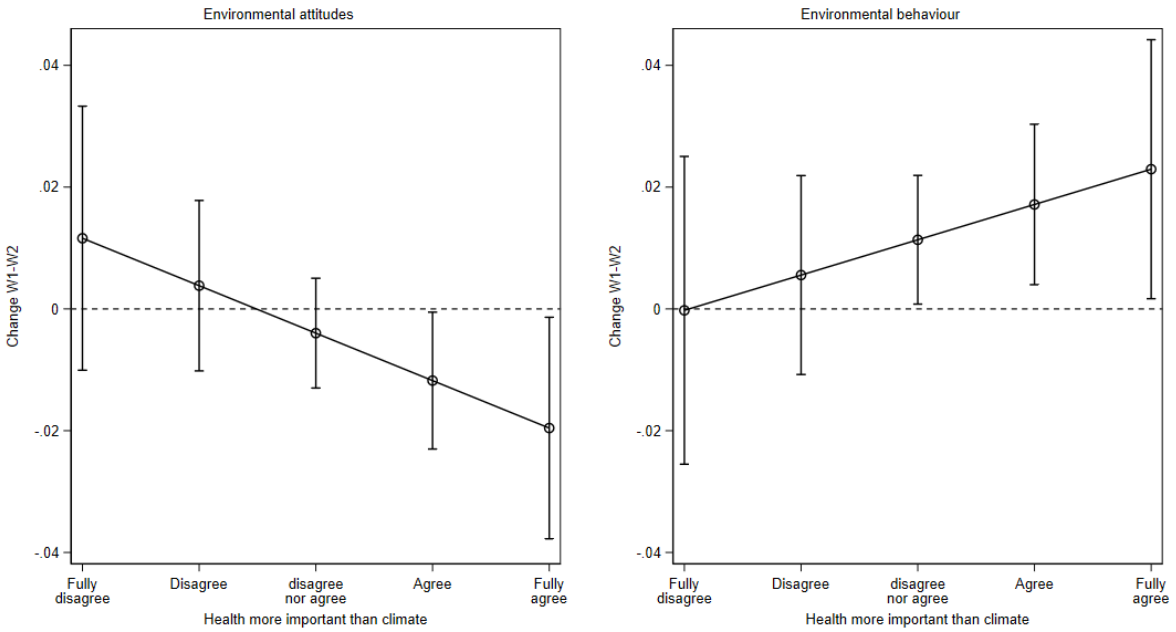
Table 3.3. Explaining changes in concern about the environment with salience of the economy

	(1) Attitudes B (s.e.)	(2) Attitudes B (s.e.)
Postpone Green Deal to save	-0.016***	-0.017***
economy	(0.004)	(0.005)
Sex (ref.=male)		-0.007
		(0.011)
Age		-0.001
		(0.001)
Education: low		
Middle		0.012
		(0.021)
High		0.000
		(0.021)
Income		-0.001
		(0.007)
School child in project		0.006
		(0.013)
Constant	0.032**	0.064
	(0.012)	(0.053)
N	576	571
R^2	0.022	0.028

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

The results show mixed support for our hypothesis. No significant associations were observed between the changes in environmental attitudes and priority of health. There is more support for a moderating impact of salience of the economy. It seems like attention for the economy strongly decreases people's environmental attitudes. More specifically, the coefficient indicates that the more people agree that health is more important than the environment, the larger the decrease in environmental attitudes. For the other indicator of environmental concern, we do not find a significant association with priority of healthcare. For a detailed view on the effects and for ease of interpretation, we show the average decline of each indicator at the different levels of priority of health in Figure 3.1.

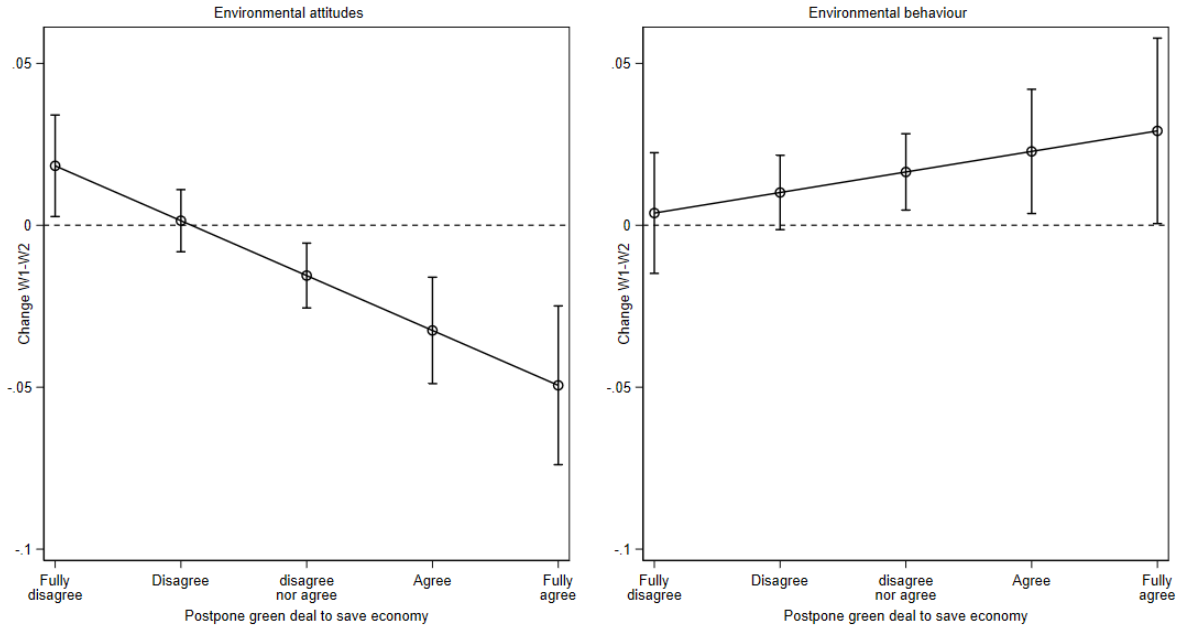
Figure 3.1. Importance of health and change in concern about the environment



The results in Figure 3.1 show a more nuanced picture of the change in concern about the environment. The results in Table 3.1 indicated a decreased support for more spending on environmental policy overall. While the results in Table 3.2 did not show a significant association between this decrease and priority of health, Figure 3.1 shows that there is a decrease for individuals who strongly believe that health is more important than the environment, while there is no such association for respondents who strongly disagree with the higher importance of health. Hence, while the difference between the two groups is not significant, it provides some evidence that issue priorities can be a zero-sum game. While those who do not consider health very important do not change significantly in the importance they attach to the environment, those who say that health is more important show a significant decrease in importance.

As a second test of our hypothesis, we estimate the same models, including as main independent variable a measure of respondents' opinions on postponing environmentally friendly measures in order to save the economy. The results are summarised in Table 3.3. There is more support for a moderating impact of salience of the economy. It seems like attention for the economy strongly decreases people's environmental attitudes. Again, we provide a more detailed look into the effects by displaying average levels of change at different levels of salience for the economy (Figure 3.2).

Figure 3.2. Importance of the economy and change in concern about the environment



The results in Figure 3.2 are somewhat similar to those in Figure 3.1. We also find differences in the levels of attitudes between the two survey waves of our panel in the extent to which people change their attitudes following their issue priorities. With this issue, we even find opposite changes in the importance of the environment between respondents who think that the economy is more important than green policies and those who do not. In short, respondents who value the economy more than the environment decrease in environmental attitudes. Contrarily, respondents who attach less importance to the economy, increase in environmental attitudes.

3.5 Conclusion

In this research note, we contribute to the theoretical development of the concept of issue competition by investigating the priority of environmental issues in the context of a crisis, the COVID-19 pandemic. Given the scale of the COVID-19 pandemic, it can be assumed that this issue dominated both the political agenda, the media, and public opinion during most of the year 2020. Despite this rather unique, and strong external, negative event, it has to be noted that the mechanism of issue competition theory is not fully supported by the results of this panel study.

The decline in attention for climate change was most outspoken for the attitudinal dimension with a zero-sum game in substantial terms. However, our results suggest that this mechanism does not seem to apply at all to environmental behaviour, as there is no apparent reason that worries about the pandemic imply that one does not have time anymore to sort household waste. In fact, the opposite occurred, as respondents actually seemed to have more time to engage in this form of environment friendly behaviour. Future research on issue competition should hence distinguish various dimensions

of environmental behaviour under investigation. Next, to be able to generalize the results of this study which are based on a sample of Belgian parents, it is important that future studies investigating the change in attention for the environment and climate change include a more representative sample of people.

The relevance for policy, it that different dimensions need to be distinguished. Among environmental policy makers there is a concern that attention for the environment and climate change will be neglected, as a result of other important issues and worries that rise within a society (Weber, 2015). With regard to the COVID-19 health crisis, which was tested in this research, this is obviously true for environmental attitudes. But for other dimensions as environmental behaviours, this is less obvious. This is in line with the study from Singer (2011) who states that the economy is certainly not the only issue citizens care about. Environmental and climate change concern is still present among the population, and is expressed in manners that, apparently, are perfectly compatible with the pandemic.

PART II: PARENTS AND THE SCHOOL AS SOCIALISATION AGENTS

Chapter 4. Family Congruence in Sustainability Attitudes and Behaviour[23]

Abstract

In this paper, I investigated whether the sustainability attitudes and behaviour of young people are similar to those of the older generation. Furthermore, I examined to which extent today's parents play a role as socialisation agents in shaping the broader sustainability attitudes and behaviour of their children by investigating whether specific family characteristics are important to explain this association. The research questions were analyzed by using data from a Belgian study conducted among Flemish pupils from 47 primary and secondary schools and one of their parents (n=880). I found that children's attitudes toward sustainability are higher compared to those of the older generation (e.g., their parents) but that the older generation, on the contrary, act more sustainably. Furthermore, there were small but positive correlations within the family for sustainability attitudes and behaviour. Finally, the results showed that increased intrafamily discussions are associated with more sustainable attitudinal parent-child congruence. However, the results did not provide evidence in support of behavioural congruence. It was concluded that the transmission of sustainability attitudes and behaviour is not limited to the classic top-down approach where parents influence children's attitudes and behaviour and children are considered as passive recipients.

[23] This chapter is based on the following paper: Verachtert, S. (forthcoming). Family Congruence in Sustainability Attitudes and Behaviour; an analysis of a household survey in Belgium. *Environment, Development and Sustainability*, in press.

4.1 Introduction

Although sustainable development has become a major issue on the international, national and local policy agenda in many parts of the world, little research has been conducted on the broader consciousness of sustainable development (Gericke et al., 2019). Especially among youth, little is known about the attitudes and behaviour with regard to the holistic approach of sustainable development which does not only include environmental but also social and economic issues (Jickling & Wals, 2008). Young people are considered future policy makers and, thus, important players in the debate on sustainability topics. According to attitudinal and behavioural studies focusing on the environmental aspects only, young people are more positive in their attitudes toward the environment compared to older people but behave less pro-environmentally (Johnson et al. 2004; Special Eurobarometer 295, 2008). However, other studies looking at the relation between age and environmental attitudes have shown less environmental concern among younger people (Grønhøj & Thøgersen, 2009; Hamilton, 2011; Shao et al., 2014). Given the contradictions in literature and the importance of youth taking action for a more sustainable world, scholars have highlighted the need for more research within this field (Corner et al., 2015; de Vreede et al., 2014; Grønhøj & Thøgersen, 2009). This study contributed to this debate and added to the literature by broadening the scope of environmental research. Hence, the first purpose of this paper was to examine whether young peoples' sustainability attitudes and behaviour are different from those of the older generation (e.g., their parents). Second, researchers looking at political socialisation emphasized the role of parents in the socialisation of children and argued that children and their parents have similar political attitudes and behaviour (Jennings et al. 2009; Rodriguez-Garcia & Wagner, 2009). We see similar results in recent environmental research, often linked to consumer studies, suggesting that parents, as the main socialisation agents, play a role in the synchronization of the values, concerns, and behaviour of their children (Casaló & Escario, 2016; Grønhøj & Thøgersen, 2009; Leppänen et al. 2012; Li & Liu, 2016; Matthies et al., 2012; Katz-Gerro et al. 2019). Yet, little is known about the way in which children acquire sustainability attitudes and behaviour and what the relationship is with their parents' attitudes and behaviour in this respect. This lack calls for more detailed research exploring socialisation processes among young people and their parents in the sustainability context, an area which is currently not well understood (Ojala & Bengtsson, 2019). Thus, the second objective of this paper was to look at the congruence of sustainability values and behaviour related to environmental, economic, and social issues in everyday practices within the family. The present study relates sustainability attitudes and behaviour within families through a case study in the Flemish part of Belgium, using parent and child-level data. Within the parent-child dyads, I furthermore investigated whether the attitudes and behaviour of children and parents were correlated. The children and their parents were questioned separately which gave a reliable measure of the attitudes and behaviour of parents and their children. An important aspect in family socialisation is the frequency of family discussions. There is evidence that families with higher frequencies of political discussions are more

congruent in terms of their political attitudes (Hooghe & Boonen, 2015). Therefore, as a third objective, this paper investigated whether family discussions interfered for the transmission of sustainability attitudes. In other words, do more parent-child discussions lead to more congruence related to sustainable attitudes within the family? To study the congruence of sustainability attitudes and behaviour between parents and children, the paper started from the perspective of socialisation processes in the family. After investigating parent-child relationships for a variety of sustainability values and behaviour, attention is turned to some family characteristics which possibly affected this transmission.

4.2 Literature review

4.2.1 Parent socialisation

The attitudes and behaviour of children are not formed in a vacuum. Rather, several socialisation agents (e.g., parents, school, peers, and media) influence the development of young people. In the traditional political socialisation theory, parents are considered one of the most important socialisation agents as they have the largest impact on the socialisation outcomes of their children (Maccoby, 2007). Through socialisation young people acquire the norms, values, and actions that are 'desirable' in the culture in which they live (Maccoby, 2007). Two important authors within the political socialisation field, Niemi and Jennings (1968), argued that the family is of notable importance and that the influence of parents is seen as substantial and long lasting (Jennings et al. 2009; Zuckerman et al. 2007). Based on Bandura's (1977) social learning theory, children primarily learn through observing and imitating other people. The visibility of an attitude is enhanced when parents show a strong commitment to that attitude and this increases the likelihood that children identify and copy their parents' behaviour (Jennings et al. 2009). In the more recent approach of the political socialisation theory, family communication and socialisation processes are seen as reciprocal and interactive, as opposed to a merely top down process (Niemi & Jennings, 1986). Children take an active part in their own development and initiate political discussions with their parents (McDevitt & Chaffee, 2002; Zuckerman, 2005; York, 2019).

4.2.2 Socialisation of environmental attitudes and behaviour

Most literature supports age differences in environmental attitudes and behaviour. It has been demonstrated that in spite of being less positive towards environmental issues, older people engage more often in pro-environmental behaviour compared to younger people (Abrahamse & Steg, 2009; Casaló & Escario, 2018; Diamantopoulos et al., 2003; European Commission, 2008a, 2008b; Gifford & Nilsson, 2014). However, Grønhøj and Thøgersen (2009) found evidence for the 'generation gap' at "all levels of abstraction, from environmental values to attitudes towards the performance of specific pro-environmental behaviours" (p. 419-420) which is in line with some other studies (Hamilton, 2011; Shao et al., 2014). As previous environmental research suggests mostly that younger people tend to

express more pro-environmental attitudes and act less environmental than older people (Boeve-de Pauw & Van Petegem, 2010; Dunlap et al., 2000; Gifford & Nilsson, 2014; Shen & Saijo, 2008), it was hypothesized that children express more sustainability attitudes; but that their sustainability behaviours are lower compared to those of the older generation (H1).

The intergenerational transmission of political attitudes and behaviour with the focus on the direction from parents to children is another topic discussed in political and social science research. However, only a few studies show the importance of the intergenerational transmission on children in the environmental research domain (Li & Liu, 2016). Grønhøj and Thøgersen (2009) have found parent-child similarities in environmental attitudes and behaviour within the family. Following the authors, adolescents are less likely to act pro-environmental by learning from their parents than vice versa. In a later study, the same authors found that the norms within a family explained as much variance in environmental behaviour of the children as the attitudes of the children themselves (Grønhøj & Thøgersen, 2012). Similarly, Casaló and Escario (2016) found a link between parental environmental concern and that of their 15-years old children in 16 different European countries. Also Matthies et al. (2012) emphasized the role that parents have in their children's (8-to 10-year-olds) recycling and reuse behaviour. Finally, a more recent study (Wallis & Klöckner, 2020) showed some strong correlations between parents and children with regard to energy-saving behaviour. Other scholars in this area assumed the reverse, supposing that children influence the pro-environmental behaviour of their parents (Easterling et al. 1995; Larsson et al. 2010). Also Ekström (2007) showed that young people can influence their parents in recycling and purchasing environmentally friendly products. However, most studies conducted in the field demonstrated the role of the parents as main socializing agents of childhood socialisation in the children's attitudes and engagement for environmental problems (Collado et al., 2019; Stevenson et al., 2016). Based on the studies above, I started in this paper from the assumption that parents are the main socialisation agents for their children. Based on Bandura's social learning theory (1977) it can be assumed that parents may contribute to the development of sustainability attitudes and behaviour by serving as social models. Therefore, I expected that parents transmit their attitudes, both consciously and unconsciously, to their children. This leads to a positive correlation between children and their parents' sustainability attitudes. Not only attitudes, also behaviour is learned in the family, through observational learning and direct influence of the parents. Hence, I also expected a positive parent-child correlation with regard to the daily actions related to sustainability behaviour. Thus, the second hypothesize states that there are positive correlations within the family for sustainability attitudes and behaviour (H2).

The interaction and degree of communication with others is another key factor in the study of pro-environmental attitudes and behaviour among adolescents. Previous studies have shown that more frequent communication and engaging in discussions with peers and especially family increased environmental concerns (Meeusen, 2014; Stevenson et al., 2016). Similarly, Valdez et al. (2017)

provided evidence that discussions with family and peers predicted pro-environmental actions of adolescents. In contrast, discussing climate change with teachers, which is more likely to occur, is not related to pro-environmental behaviour. In the present study, I investigated the role of interaction and other possible variables on the parent-child congruence of sustainability attitudes and behaviour within the family and predicted that the degree of communication had an influence on the level of congruence of sustainability values and actions. More specifically, it was hypothesized that today's parents play a role as socialisation agents in shaping their children's broader sustainable attitudes and that the frequency of family discussions is important to explain this association (H3).

4.2.3 Sustainable development

'Sustainable development', the general framework of this study, is a relatively new concept appearing in both policy documents and everyday language (Jóhannesson et al., 2011). The term became popular due to the Brundlandt report *Our Common Future*, published by the United Nations in 1987 (World Commission on Environment and Development, 1987). The term was formally accepted after the Earth Summit in Rio (1992) which resulted in *Agenda 21*, the plan of action to implement sustainable development worldwide (Gericke et al., 2019). As a result, sustainable development initiatives have been launched in different areas of society by many governmental as well as non-governmental organizations (Gericke et al., 2019; Lele, 1991). The most commonly used definition of sustainable development is the one in the Brundtland report stating 'sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987: 43). Sustainable development is a complex concept with different underlying dimensions; harmonizing environmental, economic and, social dimensions (Manni et al., 2013). Some scholars argue that the term has become 'vague, ambiguous, undefined and contradictory' (Fergus & Rowney, 2005: 19) and seems to vary in different situations (Jóhannesson et al., 2011). Another criticism is that the separation into three dimensions leads to a narrow perspective, rather than taking the whole into account (Giddings et al., 2002). Although sustainable development has been criticized, it is nowadays a general accepted approach to achieve social, economic, and environmental goals (Gericke et al., 2015).

4.3 Data and Methods

4.3.1 Data Collection and Sampling

Are young people more or less sustainable in their attitudes and behaviour than those of the older generation and is there congruence within the family with regard to sustainability attitudes and behaviour? To answer these questions, the present study builds upon first hand data collected among students of primary and secondary schools who participated in the VALIES research project. This is a large-scale project which aimed to build teachers' competences to implement education for sustainable

development in their schools. The schools who participated in the study were all located in Flanders, one of the main regions of Belgium. Through their participation in the project, the teachers implemented a school-wide sustainable development intervention during one year while they participated in a teacher professional development trajectory.

Within each school who participated in the study, the pupils of at least one class participated in the survey data. All student data were collected at two different points in time; once before (September 2019) and once after (June 2020) the implementation of the professional development program. Next to student data, we also collected parental data simultaneously. The students were surveyed at school and received one additional (almost) identical questionnaire to take home addressed to one of their parents. Identical questions in the student and parent questionnaire allow us to measure a direct and reliable parent-child congruence (Hooghe & Stiers, 2020). The parents could choose to fill in the questionnaire online or by paper and send it back to the research team in a stamped envelope. The questionnaire for parents and children required about thirty minutes to complete. The fact that the VALIES study includes a large data-set with both children and parental data based on sustainability attitudes and behaviour questions, makes it an appropriate dataset to use to test the hypotheses of this study. Largely due to the impact of the COVID-19 pandemic on the project, the response rate in the second wave for both children and parents was much lower. However, due to the fact that the research questions in this study can be answered with cross-sectional data, the models presented here are only based on the data collected before the implementation of the teacher professional development trajectory (September 2019). For the analyses, I use data from children and one of their parents (e.g., the one who filled in the parent questionnaire) from 47 Belgian Flemish primary and secondary schools that participated in the study. I provided a sample of families consisting of one parent (the parent who filled in the survey) and one child. This paper takes a broad definition of children and refers to primary and secondary school children as ‘children’. ‘Parent’ includes parents, parental figures, grandparents and foster parents. Children are between 8 and 15 years old and the mean age is 11.34 years old. In total, 2,565 pupils were selected in schools taking part in the project. Parents of 1,872 children signed an informed consent for their children who were questioned during school hours in the classrooms by a written or online questionnaire. In total, 52 per cent of the school children are male, 46 per cent female and 2 per cent does not mention their gender. The student response rate is 73 per cent. For the project, 2,565 parents were contacted by their children to fill in the survey. One month after the parents received the initial mailing of the survey, we arranged a reminder by way of the school teacher who was responsible for the implementation of the project. In total, 1027 parents from the project (a response rate of 40.04 per cent) filled in the survey. The mean age of the parents is 42.03 years old (76 per cent female, 23 per cent male and 1 per cent other). The parent and student samples are matched with an identification code so that parent-child pairs are formed. Households that did not consist of both a parent and a child are excluded from the analyses. The final sample for the analyses consists of 880 dyads: 336

son-mother dyads, 100 son-father dyads, 96 daughter-father dyads, 323 daughter-mother dyads, 10 dyads with a mother and a child which gender was undisclosed, 3 dyads with a father and a child which gender was undisclosed, 3 dyads with a son and another parental, 3 dyads with a daughter and another parental figure and 6 parent-child dyads where the parent and or the child did not fill in their gender. Table 4.1 contains respondent information of the study sample.

Table 4.1. Descriptives for the Study Sample

	n	%	Range	Mean
Children	1872	73		
Child gender				
Female		46		
Male		52		
Child age			8-15	11.34
Parents	1027	40		
Parent gender				
Female		76		
Male		23		
Parent age			28-79	42.03
Children-parent dyads	880			
Son-mother dyads	336			
Son-father dyads	100			
Daughter-father dyads	96			
Daughter-mother dyads	323			
Other	25			

4.3.2 Questionnaire development

This paper discusses children and their parents' understandings of concepts related to sustainable development referred to as *sustainability consciousness*, which was developed by Gericke and colleagues (2019). The concept of sustainability consciousness was developed into a survey instrument (Gericke et al., 2019) investigating the sustainability knowingness, attitudes, and behaviour of students and includes a holistic approach to the environmental, as well as social and economic aspects of sustainability as described in detail by Olsson and colleagues (2015) and Berglund and colleagues (2014). The short version of the Sustainability Consciousness Questionnaire (SCQ) used in this study consists of different items evaluated using a 5-point Likert scale (totally disagree to totally agree with a neutral option in the middle). The wording of the questions from the SCQ was adapted to the differences in age and assumed knowledge of terminology of the two cohorts. A native Dutch speaker,

who is also an expert in English, translated all the items of the questionnaire from English into Dutch and another expert translated the items back into English to ensure a correct translation. The sustainability attitudes and behaviours sections reflect (1) feelings about sustainable development and what people think about sustainable development, and (2) the self-reported behaviour of people about their actions in relation to sustainable development. The term knowledge is often related to factual knowledge and an objective truth. However, "knowingness" in the SCQ scale is related to the recognition of the fundamentals of sustainable development and incorporates affective as well as cognitive aspects (Gericke et al., 2019). Even though the participants in this study has been questioned about the knowingness items, it has to be noted that the scope of this article does not allow for discussing the sustainability knowledge for neither parents or children. The concept of sustainable consciousness, developed by Gericke et al. (2019), is based on the three dimensions of sustainable development (SD) that covers the 15 UNESCO subthemes to the environment, social and economic dimensions outlined by the United Nations on the global agenda in order to improve actions for a sustainable future. The sustainability attitude and behaviour items included in this study reflect (i) people's feelings about sustainability and what people think about sustainability issues (e.g., the social item: I think that we who are living now should make sure that people in the future enjoy the same quality of life as we do today), and (ii) the self-reported behaviour of people in relation to these issues (e.g., the economic item: I often purchase second-hand goods over the internet or in a shop). Table 4.2 and 4.3 show all the sustainability attitude and behaviour items included in the study. It is also important to note that due to the scope of the research questions, this study focuses more on the sustainability attitudes and behaviour, rather than on the environmental, social and economic components.

4.3.3 Measures

In order to investigate the congruence and variation of sustainability attitudes and behaviour within families, this study focuses on two main variables, namely attitudes and behaviour. Details about these two variables can be found in Table 4.2 and Table 4.3. The tables also present the means, ranges, and standard deviations for the variables. For the analyses I use a reduced version of the Sustainability Consciousness Questionnaire. To examine the first indicator, sustainability attitudes, the respondents (both children and parents) were asked to indicate to what extent they agree with statements related to sustainable development, on a 5-point scale ranging from 1 (=strongly disagree) to 5 (=strongly agree) in the parent survey and on a 5-point scale ranging from 1 (=strongly agree) to 5 (=strongly disagree) in the pupil survey. The statements from the pupil survey are reversed so that higher numbers denote more attention for the sustainable issues. Two of the attitudinal items from the SCQ scale were directed towards environmental attitudes (i.e. I think that it is important to take measures against problems which have to do with climate change; I think that we need stricter laws and regulations to protect the environment). Three attitudinal items from the SCQ scale were directed towards social attitudes (i.e. I think that everyone ought to be given the opportunity to acquire the knowledge, values and skills that

are necessary to live sustainably; I think that we who are living now should make sure that people in the future enjoy the same quality of life as we do today; I think that women and men throughout the world must be given the same opportunities for education and employment). Three attitudes from the SCQ scale were directed towards economic attitudes (i.e. I think that companies have a responsibility to reduce the use of packaging and disposable articles; I think it is important to reduce poverty; I think that companies in rich countries should give employees in poor the same conditions as in rich countries.

To study the second indicator, sustainability behaviour, the respondents were asked to indicate how often they engage in the following sustainable behaviour: sorting waste, sorting organic waste and reducing waste (defined as environmentally friendly behaviour), support aid organization, respect men and women (social behaviour) and ethical consuming (economic behaviour). All these behaviours were being measured on a 5-point scale ranging from 1 (=strongly disagree) to 5 (=strongly agree) in the parent survey and on a 5-point scale ranging from 1 (=strongly agree) to 5 (=strongly disagree) in the pupil survey. The statements from the pupil survey are again reversed so that higher numbers denote more action regarding sustainable issues.

The validity of the attitudinal and behavioural scale was tested through exploratory factor analysis. The exploratory factor analysis revealed indeed two underlying constructs for the items: one scale of sustainability attitudes and one scale of sustainability behaviour. To assess the internal consistency of the scales, scale's reliability was estimated by calculating Cronbach alpha values. The reliability of the attitudinal and behavioural scale was high ranging from 0.68 to 0.82. Since the attitudes are strongly correlated for both parents (Cronbach's alpha=0.82) and children (Cronbach's alpha=0.78), I could create one measure of sustainable attitudes as an 8-item index score for both parents and children. As the behavioural items were correlated for both parents (Cronbach's alpha=0.68) and children (Cronbach's alpha=0.79), one measure of sustainable behaviour as an 6-item index score for both parents and children is created.

The dependent variables used in the regression analyses, to investigate whether the frequency of family discussions is important to explain the congruence in sustainable attitudes, are attitudinal congruence and behavioural congruence among the family and more specifically, congruence between the parent and the child. The dependent variable is the absolute distance between the parent and their child. When a parent with an outspoken pro-environmental behaviour (value: 4) has a child with a clear non-pro-environmental behaviour (value: 2), the dependent 'distance' variable has the value of 2. When both parent and child select the same option, the score on this variable is '0'. I add also several covariates to control for their impact on congruence within the family. First, I include the standard socio-demographic of the respondents (e.g., parents) by including educational level and income. Education level was assessed using a single item ranging from 1=no formal education, 2=primary education, 3=lower secondary education, 4=higher secondary education, 5=post-secondary education (non-higher

education), 6=higher non-university education, 7=bachelor degree to 8=master degree. Education level was classified in the three following categories for the analyses : 1 (low) = no formal education, primary education and lower secondary education, 2 (middle) = higher secondary education, post-secondary education and higher non-university education and 3 (high) = bachelor degree and master degree. Family income was measured with a self-reported and an ordered categorical item that asked to report how satisfied they were about their total level of household income. Respondents were asked to indicate which situation applied to their family income: "it is very difficult to make ends meet with the current income" (1); "it is difficult to make ends meet with the current income" (2); "we manage to make ends meet with the current income" (3); "we can live comfortably with the current income" (4). We add this variable in the analyses as 1=living comfortably or coping on present income and 0=living (very) difficult. I also control for the language spoken at home, distinguishing between families where Dutch is the main language (reference category) and, families where another language is the main language (1). To investigate the role of the family in shaping sustainability attitudes and behaviour, parents were asked how often they talk with their children about sustainable topics, including sorting waste, protection of the environment, fair trade, equality for men and women and, climate change. Responses were recorded on a 4-point Likert scale ranging from 1 (never) to 4 (several times a week). As the five items are strongly correlated (Cronbach's alpha=.79) I create one measure of family discussions as an index score. Furthermore, I have applied the age of the child as a control variable because I expected that the level of congruence increases as children grow older.

4.3.4 Data analysis

The first objective of this paper, is to investigate whether there is a difference between children's and parents' sustainability attitudes and behaviour. In order to examine this, sustainability attitudes and behaviour are calculated in terms of means through paired sample t-tests. The second objective of this paper is to study the congruence of certain sustainability values and behaviour within the family. Previous research used correlations of environmental behaviour and found that family socialisation is an important factor shaping individuals' environmental attitudes and behaviour (Jennings & Niemi, 1968; Grønhøj & Thøgersen, 2009, 2012; Matthies et al., 2012). Therefore, bivariate correlations between self-reported single sustainability behaviour and children items from children and one of their parents were analysed. To answer the third objective of the paper, OLS regressions are estimated to investigate whether family characteristics lead to more attitudinal or behavioural congruence.

4.4 Results

Table 4.2 and 4.3 provide an overview of the descriptive statistics (means, standard deviations) of the two key variables: sustainability attitudes and sustainability behaviour. Moreover, comparisons of attitudinal and behavioural means between parents and their children both at the items level and at the level of the construct; and congruence within the family are given. Comparing the means across the two generations makes it possible to discover whether the younger generation is different from their parents' generation in the variables of interest (sustainability attitudes and sustainability behaviour). Results show that the parent and children generations rate values and behaviour regarding sustainable development differently. Overall the tables show that both generations display favourable attitudes and behaviour towards sustainability, with most scores higher than 4.

Table 4.2. Comparison of attitudinal means between parents and their children; congruence within the family

Variable name	Description	Min.	Max.	N	M (SD)		Differences between parents and children	Correlation within the family
					Children	Parents		
Laws – ENV	I think that we need stricter laws and regulations to protect the environment.	1	5	851	3.975 (.950)	3.918 (.883)	.058	0.177***
Measures – ENV	I think that is it important to take measures against problems which have to do with climate change.	1	5	852	4.322 (.804)	4.076 (.866)	.245***	0.150***
Training – SOC	I think that everyone ought to be given the opportunity to acquire the knowledge, values and skills that are necessary to live sustainably.	1	5	840	4.315 (.811)	3.829 (.908)	.487***	0.056
Future – SOC	I think that we who are living now should make sure that people in the future enjoy the same quality of life as we do today.	1	5	857	4.314 (.842)	4.377 (.686)	-.063	0.091*
Education – SOC	I think that women and men throughout the world must be given the same opportunities for education and employment.	1	5	851	4.638 (.597)	4.543 (.655)	.095*	0.082*
Disposable – ECO	I think that companies have a responsibility to reduce the use of packaging and disposable articles.	1	5	853	4.408 (.786)	4.468 (.730)	-.060	0.129***
Poverty – ECO	I think it is important to reduce poverty.	1	5	850	4.428 (.712)	4.364 (.685)	.065*	0.091**
Employees – ECO	I think that companies in rich countries should give employees in poor nations the same conditions as in rich countries.	1	5	850	4.275 (.852)	4.282 (.812)	-.007	0.037
8-item index score		1	5	791	4.336 (.539)	4.240 (.539)	.095***	0.205***

Notes. M = mean, SD = standard deviation, and N = number of observations (parent-child dyads). Average scores on the different attitudinal items in the questionnaires. Paired sample t-tests : significance levels: *:p<0.05; **: p<0.01; ***: p<0.001. The correlations are based on factor scores. The higher the scale value, the more sustainable the respondent.

Table 4.2 show the results of the average score on individual items and on the attitudinal construct (with a minimum score from 1 and a maximum score of 5) indicating that a significant difference was found between children and their parents (df=790) = (3.934), $p < 0.001$. The results show that the children's score on the attitudinal sustainability scale is significantly higher (M = 4.33) compared to the mean of parents (M = 4.24). An item with a significant higher difference (.487) is the one dealing with equal opportunities to acquire the knowledge, values and skills that are necessary to live sustainable. Children (M = 4.32) score also significant higher than parents (M=4.08) for the item stating that it is important to take measures against problems which have to do with climate change.

The results above show the correlations between the sustainability attitudes and behaviour for children and parents. More specifically, pearson correlation coefficients were calculated to measure the success of attitude congruence within the family. This method is based on previous research studies reported in the environmental domains (Leppänen et al., 2012; Grønhøj & Thøgersen, 2009; Wallis & Klöckner, 2020; Matthies et al., 2012). Looking at the individual items, sustainability attitudes, the strongest correlations for the environmental items can be found (e.g., stricter laws to protect the environment, $r=.177$, $p < .001$; take measures against climate problems, $r=.150$, $p < .001$) while the weakest correlation for the social and the economy items is found.

Table 4.3. Comparison of behavioural means between parents and their children; congruence within the family

Variable name	**Description**	**Min.**	**Max.**	**N**	**M (SD)**		**Differences between parents and children**	**Correlation within the family**
					Children	Parents		
Sorting food - ENV	I always separate food waste before putting out the rubbish when I have the chance.	1	5	864	4.291 (.830)	4.705 (.581)	-.414***	0.123***
Reduce waste - ENV	I have changed my personal lifestyle in order to reduce waste (e.g., throwing away less food or not wasting materials)	1	5	851	4.264 (.831)	4.239 (.843)	.026	0.120***
Sorting - ENV	I recycle as much as I can.	1	5	866	4.283 (.804)	4.706 (.581)	-.423***	0.221***
Aidorganisations - SOC	I support an aid organization or environmental group.	1	5	844	3.719 (1.098)	3.499 (1.415)	.220***	0.110**
Respect mw - SOC	I show the same respect to men and women, boys and girls.	1	5	856	4.202 (.966)	4.643 (.535)	-.440***	0.028
Eth consuming - ECO	I avoid buying goods from companies with a bad reputation for looking after their employees and the environment	1	5	825	3.588 (1.138)	3.313 (1.060)	.275***	0.105**
6-item index score		1	5	795	3.994 (.673)	4.114 (.559)	-.120***	0.154***

Notes. M = mean, SD = standard deviation, and N = number of observations (parent-child dyads). Average scores on the different behavioural items in the questionnaires. Paired sample t-tests: significance levels: *:p<0.05; **: p<0.01; ***: p<0.001. The correlations are based on factor scores. The higher the scale value, the more sustainable the respondent.

For the score on the behavioural sustainability scale, with a minimum score from 1 and a maximum score of 5, the results above in Table 4.3 indicate that again a significant difference was found between children and their parents (df=794) = (-4.228), $p < 0.001$ although in the other direction, parents (M = 4.11) score significant higher compared to their children (M=3.99). The difference between parents and children is almost always significant for all the different items. An item with a significant higher difference (-.414) is the one dealing with sorting food. Parents (M = 4.64) score also significant higher than children (M=4.202) for showing the same respect ot men and women. However, there is one item where children score higher compared to those of the older generation, 'avoid buying goods from companies with a bad reputation'.

Pearson correlation coefficients were again calculated to measure the success of behaviour congruence within the family. For sustainability behaviour, again the strongest correlations for the environmental actions can be found (e.g., sorting food, r=.123, $p < .001$; reduce waste, r=.120, $p < .001$; recycling, r=.221, $p < .001$) while the results show the weakest correlation for the social issues (equal respect to men and women, r=.028). Looking at the index scores, a significant positive correlation emerged in both the sustainability attitudes scale (r=.205, p<.001) and the sustainability behaviour scale (r=.154, p<.001).

Based on the above I can conclude that sustainability attitudes varied significantly between parents and their children. Children, in general, showed more positive attitudes than their parents. In their behaviour, parents were more positive as their children. Results show that the congruence between parents' self-reported and children's attitudes (.205, p<.001) is stronger compared to the congruence for the sustainability behaviour (r=.154, p<.001). Thus, the first hypothesis is supported by the findings. Children's and their parents' sustainability values and behaviour are positively correlated but it should be noted that, overall, congruence in sustainability attitudes and behaviour between parents and children is rather weak. Furthermore, it should be noted that, as an additional robustness test, I also carried out analyses relying on the data from the second wave of the panel study. The results (and the descriptive statistics including means, numbers and percentages of responses) are displayed in Appendix A and show very similar results and allow us to expand the generalizability of the results.

In addition to the descriptive statistics, OLS regressions are estimated. This paper investigates whether family characteristics lead to more attitudinal or behavioural congruence. I estimate a regression model, where the attitudinal congruence (a) and the behavioural congruence (b) is the dependent variable. Independent variables are the age of the child, the educational level of the parent, the discussions going on in families, income, highest level of education, and the language spoken at home. Table 4.4 indicates that no variable in the analysis with behavioural congruence is significant. I include 'highest level of education' in the analyses because I expect that the level of education is positively related to the amount of congruence. The results do not indicate that the level of education influences attitudinal or behavioural congruence. Finally, income or language spoken at home does not seem to predict congruence within a family. Surprisingly, the age of the child is not associated with congruence within the family, possibly due to a quite narrow age span in our sample (8-14 years). I also formulated a hypothesis which predicted that an increased level of family discussions would lead to more congruence within a family. The results support that an increased level of family discussions indeed lead to more attitudinal congruence among families but for behavioural congruence, this hypothesis is not supported. Family discussions do not lead to more behavioural congruence.

Table 4.4 Predicting congruence within the family

	Attitudinal congruence	Behavioural congruence
	B (s.e.)	B (s.e.)
Discussing sustainable issues (parents)	-0.078***	-0.024
	(0.026)	(0.030)
Parental education: low		
Medium	-0.026	0.098
	(0.065)	(0.077)
High	-0.101	0.022
	(0.064)	(0.076)
Language at home (ref: Dutch)	0.059	-0.052
	(0.057)	(0.066)
Income parent (ref: difficult to live)	0.017	0.041
	(0.053)	(0.064)
Age (child)	0.035	0.015
	(0.032)	(0.016)
Constant	0.760***	0.433***
	(0.103)	(0.221)
N	777	779
R^2	0.025	0.009

Note: Results are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: +: p<0.10: *: p<0.05; **: p<0.01; ***: p<0.001.

4.5 Discussion

The research literature increasingly focuses on questions concerning children's pro-environmental attitudes and behaviour. However, there is no literature that is concerned with how parents influence youth's actions and values within a sustainable context. This study wanted to examine whether there is congruence in children's and parents' broader sustainable development, including economic and social dimensions as well as the previously investigated environmental dimension. This research reveals some new first insights in the transmission. First, I compared the sustainability attitudes and behaviour of two generations, the young people and their parents, to examine to what extent parents influence their children with respect to a sustainable context. Pearson product-moment correlation analysis was used to determine how much coherence of sustainability attitudes and behaviour existed between children and their parents. As expected, a positive correlation between parents' and children's environmental values and behaviour was found. This was true across all other value domains (social and economic) as well. Following the guidelines of Cohen (1988), the results showed a significant, substantial correlation between parents and children. Despite the fact that the correlations between parents and children were rather low, the results make it clear that parents still matter, to some extent, in regard to influencing coping with sustainability attitudes and behaviour and are relevant agents in the sustainable transmission. However, compared to other studies (Grønhøj and Thøgersen, 2009, 2012; Matthies et al. 2012; Meeusen, 2014) the analyses did not show high variability in the similarities between parents and their children and the impact of parents seems minimal as the effective sizes of the correlations were small (Cohen, 1988). The results are consistent with previous research suggesting that youth should be seen as active participants in their own and their families development (McDevitt & Chaffee, 2002), indicate that children do not just simply copy their parents' attitudes and behaviour. Previous research has argued that young people hold more positive attitudes towards environmental issues, but show less pro-environmental behaviour compared with older people (Leppänen et al., 2012; Casalo & Escario, 2018). Other studies has consistently shown that there is an adolescent decrease in environmentally friendly attitudes and behaviour (Negev et al., 2008; Liefländer & Bogner, 2014) and in sustainable attitudes and behaviour (Olsson & Gericke, 2016). Based on the analyses in this study, I could find evidence that the younger generation has higher attitudes but show less sustainable behaviour compared to those of the older generation. Third, in line with other scholars (Hooghe & Boonen, 2015) this study finds evidence that in families with a high frequency of political discussions, there is a stronger congruence between the sustainable ideas of parents and their children. For the behavioural congruence, no variables included in this study seem to have an effect on the strength of the relation.

The current study makes significant contributions to the literature, however, the research suffers from some limitations that could provide a starting point for future research. First, the direction of transmission within the family cannot only be determined from correlation analyses. It is more difficult to unravel the different mechanisms that underlie parental socialisation processes by focusing on

congruence. The results from this study clearly indicate that parent-child congruence and family similarity could also be caused by child-to parent transfer, and thus, as a reverse socialisation process (Glass et al., 1986, York, 2019) and other external socialisation agents (Vaughan et al., 2003). Second, there is limited generalizability with a case study design and there could be pro-environmental bias of those parents who decided to participate in the VALIES study. Third, future research looking at sustainability behaviour among young people could question youth about the opportunities and difficulties to engage in a variety of sustainability actions. The difficulty is to find more sustainable behaviour that children between age 8 and 15 have the option to engage in. However, Grønhøj and Thøgersen (2012) argue that adolescents have already reached a certain level of maturity. They form their own opinions about a number of issues, and can be held responsible for their everyday behaviour within the family. Finally, it is important to note that the rather small parent-child attitudes and behaviour similarities might be due to its lower visibility within households (Whitbeck & Gecas, 1988)

Chapter 5. The Heterogeneous Effects of Education for Sustainable Development Intervention in Schools[24]

Abstract

Education for sustainable development aims at strengthening levels of knowledge, attitudes, and behaviours beneficial for sustainable development which are crucial to tackle urgent sustainability-related global challenges. In this study, we present the results of a one-year panel study measuring levels of sustainable development knowledge, attitudes, and behaviours in primary and secondary schools in Flanders (Belgium). During this year, a large-scale project on sustainable development was implemented in these schools. We test whether this intervention increased pupils' knowledge, attitudes, and behaviours on sustainable development. Furthermore, we look for heterogeneous effects depending on pupils' gender and age. The results show that there is indeed an increase in levels of sustainable knowledge, attitudes and behaviours after the ESD intervention, and that there are significant differences between boys and girls on the one hand, and primary and secondary school pupils on the other. However, we find no evidence that the intervention mitigated these differences.

[24] This chapter is based on the following paper: Verachtert, S., & Stiers, D. (forthcoming). The Heterogeneous Effect of an Education for Sustainable Development Intervention in Schools: Evidence From a Belgian Panel Study. *Environmental Education Research*, in press.

5.1 Introduction

There is a broad consensus among policy makers and researchers that Education for Sustainable Development (ESD) is important to help today's students to develop the knowledge, attitudes, and behaviours to make well-informed decisions to achieve a sustainable future (Hopkins, 2012; Boeve-de Pauw, Gericke, Olsson & Berglund, 2015; United Nations, 2015; Agbedahin, 2019). As a consequence, sustainable development is now widely recognised in school curricula across the world in primary and secondary schools, and in institutions of higher education (Evans, Stevenson, Lasen, Ferreira & Davis, 2017) leading to the development of different ESD teaching practices and school projects. While there is much attention within school improvement or school effectiveness research for the impact of environmental and ESD-certification programs on student outcomes (i.e. knowledge, attitudes, and behaviours) towards sustainable development (Boeve-de Pauw & van Petegem, 2011; Johnson & Činčera, 2015; Olsson, Gericke, & Rundgren, 2016), the effects of these programs on the student outcomes remain rather limited and small. While some studies on this topic exist (Boeve-de Pauw et al., 2015; Spinola, 2015; Shay-Margalit & Rubin, 2017), a methodological limitation of existing research is that many empirical studies use cross-sectional designs to measure the impact of environmental or ESD programs. Recently, some scholars have therefore emphasised the need for longitudinal research studies within ESD research because of its contribution to new and valuable information to the field (Olsson, Gericke & Boeve-de Pauw, 2022, p. 2).

With this study, we contribute to the literature on ESD by using a unique panel dataset gathered before and after the implementation of a sustainable development intervention in primary and secondary schools. The panel data enable us to measure pupils' levels of sustainable development knowledge[25], attitudes, and behaviours before and after this intervention. Furthermore, we broaden the scope of environmental education research by looking at sustainable development including the different dimensions (i.e. environmental, economic, and social issues). Moreover, we investigate the particular relevance of pupils' gender and age before and after the ESD intervention. Research on young people is important given that the youth of today are the decision-makers of the future (Chapman & Sharma, 2001) and have to deal with our *un*sustainability of current environmental, social and economic challenges (e.g., climate change, poverty, and inequality).

[25] Knowledge is seen as what students acknowledge as important or necessary for sustainable development (Gericke et al,. 2019).

With the design used in this study, we make several contributions to the research on ESD. First, we establish a measurement of the knowledge, attitudes, and self-reported behaviours of Flemish pupils towards sustainable development with its holistic approach that integrates both environmental, social, and economic issues which goes beyond environmental research focusing on the environmental aspects only. For this purpose, the questionnaire and the conceptualisation of sustainable development employed in our study, draws upon a recently validated instrument developed by Gericke et al. (2019). Second, previous studies have already revealed the significance of gender and age as individual characteristics in explaining outcomes in environmental studies (Negev, Sagy, Garb, Salzberg, & Tal, 2008; Uitto & Saloranta, 2010; Liefländer & Bogner, 2014). To our knowledge, however, there is much less attention for the effect of gender and age in the context of sustainability attitudes and behaviours in ESD studies. Furthermore, the few existing research on this question is cross-sectional and thus does not show whether the effects of gender and age remain after the implementation of a sustainable development intervention in schools (Olsson & Gericke, 2016, 2017). These studies have enriched our understanding of ESD, but they have not addressed the possibility to look for changes in time of the outcomes at the student level. Therefore, we investigate to what extent the gender and age differences apply to the changes over time.

5.2 Literature review

5.2.1 Sustainable development in policy and education

There is a growing consensus that sustainable development is one of the major challenges of our society and that education has a central role to play in tackling it (Van Poeck, König, Wals, 2018). During the United Nations Decade of Education for Sustainable development (2005-2014), high priority was given to the concept of Education for Sustainable Development (ESD) on the UNESCO agenda (UNESCO, 2006). The ambition was twofold: to use education as a tool for achieving a sustainable future, and to promote ESD from a holistic learning rather than the traditional subject-based environmental education perspective (UN, 2005). In the holistic approach in sustainable development, not only environmental issues but also social and economic issues are included (Jickling & Wals, 2008; Andersson, 2017). In September 2015 the United Nations adopted the "Agenda 2030 for Sustainable Development". It comprises 17 sustainable development goals (SDGs) to be achieved until 2030 to advance the process to the transition to sustainability. The agenda includes ESD in goal 4, target 4.7: 'By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through Education for Sustainable Development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development' (UN, 2015; Michelsen & Fischer, 2017). Since

the launch of the United Nations Decade of Education for Sustainable Development (DESD), 2005-2014, and the continuation of UNESCO's Global Action Plan (GAP) from 2015, sustainability is now widely recognised in school curricula at all educational levels across the globe (Evans et al., 2017). As a consequence, different initiatives and programs were adopted by schools to implement ESD in teaching and learning (Olsson, Gericke, Boeve-de Pauw, Berglund, & Chang, 2019). The transition to ESD in education incorporates new curriculum content and new teaching and learning approaches (Sund & Wickman, 2011). The main idea of ESD is to empower pupils with sustainability competences through a holistic interdisciplinary approach and by engaging a pluralistic approach in which different perspectives when dealing with sustainability issues are explored and critically examined (Berglund & Gericke, 2021). Although ESD as an approach and its effects and appropriateness has also been criticized by some scholars (Wals, 2007; Kopnina, 2014), it has been implemented as a common discourse in policy and education all over the world (Boeve-de Pauw et al., 2015).

5.2.2 Outcomes of education for sustainable development

An important question to address in the context of school effectiveness research is whether the implemented ESD school practices also affect students' outcomes related to sustainability knowledge, attitudes, and behaviours (Boeve-de Pauw et al., 2015; Činčera, Boeve-de Pauw, Goldman, & Simonova, 2019). So far, earlier research on ESD interventions focussing on educational outcomes of students regarding sustainability have been limited in scope (Olsson & Gericke, 2016). Indeed, while there has been research in various contexts and in various age groups among youth (Činčera et al., 2019; Goldman, Pe'er, Yavets, 2017; Krnel & Naglic, 2009; Shay-Margalit & Rubin, 2017; Spinola, 2015), most existing research focused on the environmental dimension of sustainability only. Furthermore, to test the effectiveness of ESD interventions, these studies compared outcomes between students in schools that are part of an Eco or Green school program and students from schools not involved in such a program, and show small and weak long-term effects at the student level (Olsson & Gericke, 2017). Although these studies contribute insight in the effectiveness of environmental education, they also suffer from some limitations. First, as they focus mostly on the environmental dimension, little is known about the outcomes on sustainable development as a whole, including the economic and social dimensions (also referred to as holism) as emphasized by ESD researchers and policy documents (United Nations, 2015; Berglund & Gericke, 2021). Therefore, for instance, Berglund et al. (2014) and Olsson et al. (2016) expanded the environmental education studies by including social and economic aspects of sustainability and investigated the sustainability consciousness of Swedish students, concluding that ESD-certified schools had a limited impact on student knowingness, attitudes, and behaviours toward sustainability compared to schools with no official ESD certificate. As a second limitation, these studies are based on cross-sectional samples and are hence not able to consider

change over time. Thus, while they can reveal whether there are any differences between students in schools that had an intervention and students in schools that did not, they cannot test whether the intervention actually changed levels of sustainability knowledge, attitudes, and behaviours. In order to assess change, the ESD program or certificate should be investigated through a pre- and post-test design. Therefore, in the present study, we offer a more comprehensive view on the role of ESD as an effective approach by using a panel study with two points in time. By focusing on a holistic measure of sustainability included in a panel study, we aim to make important empirical contributions to the literature on ESD interventions.

Taken together, previous research has resulted in limited evidence for the effects of environmental and sustainability teaching on students' sustainability knowledge, attitudes, and behaviour. While some studies find small effects on cognitive outcomes or attitudes, others do not report any differences between schools that focus on sustainability and schools that do not. However, it is possible that the focus on students in general blurs existing differences between some groups of students. Therefore, in this study, we focus on individual-level heterogeneity based on two important characteristics: students' gender and age.

5.2.3 The role of gender

The existing research literature has found that women report stronger environmental attitudes than men (Marshall, 2004; Xiao & McCright, 2015; Torkar & Bogner, 2019). This is often explained by the traditional gender socialisation theory, where individuals are shaped by gender expectations within the context of cultural norms (Zelezny, Chua, Aldrich, 2000). Women are socialised to have a motherhood mentality or stronger ethic of care, which would extend traditional child- and caretaking expectations to a higher concern about the environment.

Interestingly, these gender differences are already found among the youth. Boeve-de Pauw and van Petegem (2011), for example, show that girls score higher in environmental affect than boys. In an Israeli study among 14-17-year-olds, girls express more concern for the environment and are more interested in environmental education (Goldman et al., 2017). Duarte et al. (2017) show similar results with girls having stronger pro-environmental attitudes than boys, and also earlier studies exploring gender differences find similar results (Zelezny et al., 2000; Oerke & Bogner, 2010; Činčera & Krajhanzl, 2013). Hence, the gender differences found among adults are already formed early in life and continue through adolescence into adulthood (Kimmel, 2010; Lahelma, 2014).

With regard to ESD, some scholars argue that ESD might play a key role in gender equality and can thus contribute to prevent the gender gap in education (Casimir & Dutilh, 2003; Olsson & Gericke, 2017). However, hardly any research within the ESD field, including environmental, economic and social issues, has considered these gender differences. One of the few studies that has been done in this respect was conducted by Olsson and Gericke (2016), who wanted to look whether the gender differences are due to the gender socialisation process by examining how the strength of the gender gap evolves with primary and secondary school in formal education. They found an increased gender gap for each grade among students in schools participating in ESD-certification programs. Hence, their study assumed that the effect of gender on students' sustainable development is age dependent. Furthermore, the older students displayed a larger gender gap than the younger students. A study in the Taiwanese context followed the same trend, i.e., the effect of gender on student sustainable consciousness increased with increasing grade (Olsson et al., 2019). Thus, while studies in the field of ESD research to date have shown similar results as the gender gap found in environmental studies, these existing cross-sectional studies do not allow us to identify whether the gender gap remains after the implementation of an ESD intervention. It therefore remains to be investigated whether an ESD intervention actually contributes to diminishing the gender gap –as argued by Casimir and Dutilh (2003) – and more specifically whether this gender gap still exists after the implementation of an ESD intervention. Based on previous work in education for environmental and sustainable development, we expect the implemented ESD school intervention in our study to have a positive effect on pupils' outcomes. Moreover, since gender is reported as a common factor that affect pupils' support for sustainable development, we also investigate the possible different effects on the ESD school intervention among boys and girls and investigate if there is still a gender gap after the ESD intervention.

5.2.4 The role of age

Next to gender, age is also a factor that affects individuals' environmental concern (Bamberg & Möser, 2007). Hence, according to some studies, age must also be included when investigating the effects of environmental education programs (Liefländer & Bogner, 2014; Negev et al., 2008). The study of Liefländer and Bogner (2014) "investigated environmental attitudes in terms of utilization and preservation values among 9 to 13-year-old German students participating in an environmental education program" (Olsson et al., 2019, p. 185). The results revealed that younger students adopted more environmentally friendly attitudes compared with their adolescent peers. Moreover, younger students tended to shift more readily toward pro-environmental attitudes. Similar results were found in an Israeli study by Negev et al. (2008), "in which younger students exhibited more environmentally friendly attitudes and behaviour than adolescents" (Olsson et al., 2019, p. 185). A Finnish study by Uitto and Saloranta (2010) focusing on age-differences "found that ninth grade adolescents (15–16 year olds) have low interest in environmental and

human issues, and more hedonistic values than both younger and older students" (Olsson & Gericke, 2016, p. 36). These results clearly suggest that students' behaviour and attitudes become less pro-environmental as they enter adolescence. Some scholars argue that there is perhaps a lack of interest in environmental issues at this age (Kaplan & Kaplan, 2002; Negev et al., 2008; Liefländer & Bogner, 2014). However, there are also studies that do not find evidence for an effect of age between adolescents and younger and older age groups (Boeve-de Pauw & van Petegem, 2011).

Studies looking at the role of age within an inclusive approach to sustainable development are scarce. Olsson and his colleagues (2016) found differences in the effects on students' sustainability consciousness and referred to an adolescent dip in sustainability behaviour among sixth, ninth, and twelfth grade Swedish students. The results indicated that ESD interventions had a small positive effect on students' sustainability consciousness in grade 6 (12-13-year old students), while the effect of the ESD-certification was negative on students' sustainability consciousness from grade 9 (15-16-year old). The study also revealed that the adolescent dip in sustainability is present irrespective of whether students attend ESD certified schools. The authors argue that the adolescent dip in sustainability is most likely the result of a too normative teaching tradition that does not take into account the needs of different age groups. Although ESD is proposed as a general approach for all ages of students, their study indicates that ESD should be adopted differently for the needs of various age groups. A more recent study conducted in Taiwan by Olsson et al. (2019) shows similar results with the same pattern: a decrease in adolescents' sustainability concern. The biggest effect of the adolescent dip is manifested in students' self-reported sustainability behaviours. The adolescent dip from these studies is in line the adolescent dip in environmental attitudes found in earlier environmental education research by Kaplan and Kaplan (2002), where adolescents show a different pattern from both younger and older groups. They argue in their Reasonable Person Model (RPM) that adolescents readily explore new areas (both mentally and physically) and have less consideration for others compared with young and older peers in the development of autonomy. The authors indicate that adolescents in Western cultures seem to shift away from the physical environment toward other concerns compared to younger and older people. "They refer to this brief period occurring when adolescents prepare to enter adulthood at ages 14-16 years, as a 'time out' in people's preferences for the natural environment" (Olsson & Gericke, p. 35).

It can be assumed, however, that the interest and preferences generally returns when the adolescents become young adults (Kaplan & Kaplan, 2002, cited in Olsson & Gericke, p. 35). Some studies have indeed shown that this decrease has been followed by a rebound as the youth leaves adolescence (Olsson et al., 2019). However, "the reason for the adolescent dip are not entirely clear" (Olsson & Gericke, 2016, p. 35). Boeve-de Pauw et al. (2011) therefore call for more research to explore adolescents' environmental perceptions in

relation to other age groups. In line with previous research, our expectation is that we will find an adolescent dip in secondary schools compared to the pupils in primary schools.

5.2.5 Sustainability Consciousness Questionnaire (SCQ)

Instruments to measure environmental issues are often inadequate for evaluating ESD programs that integrate environmental, social and economic dimensions (Olsson et al., 2019). Recently, the sustainable consciousness questionnaire (SCQ) has been developed by Gericke and his colleagues (2019). The authors operationalised a theoretically grounded and empirically validated instrument to measure sustainably competencies in Swedish secondary schools. With the development of this measurement instrument also the broader holistic concept of sustainable development has been the focus of measurement development. More specifically, the SCQ measures knowledge (in their research defined as knowingness) – i.e., recognition of the importance of sustainability; attitudes – the attitudes towards sustainability; self-reported behaviour – the willingness to act towards a sustainable future in relation to the three pillars model of sustainable development dimensions: environment, economy, and society (Ariza et al., 2021). The instrument has previously been used in different Swedish and a Taiwanese study to investigate the effect of ESD at the student level (Berglund et al., 2014; Olsson & Gericke, 2016; Olsson et al., 2016). The SCQ questionnaire of Gericke et al. (2019) consists of a long version (SCQ-L) including 49 items and a short version (SCQ-S) including 27 items. The authors of the SCQ developed a shorter version of the questionnaire to employ an easy-to-use and quick survey instrument. Given the younger sample in our study, children aged 9-15, the relatively shorten attention span of younger students, and the time that schools were able to make available for the survey, the questionnaire had to be kept short. Given the time limitation, we included the shorted version of the measurement instrument in our questionnaire.

To conceptualize sustainable development, our study relies on different items from the short version of the questionnaire as an evaluative instrument investigating sustainability knowledge, attitudes, and behaviours by taking into account the holistic approach of ESD within the environmental, social, and economic components which allows us to frame sustainable development as a whole instead of focusing on one of the dimensions as often done in earlier research. The items are further discussed below. The SCQ questionnaire was originally developed for adolescents (aged 18-19) but we used it for children aged 9 to 15. Therefore, the formulation of the questions from the SCQ were adapted to the differences in age in our study and assumed knowledge of terminology.

5.3 Data and methods

5.3.1 Data: the VALIES project

This case study is part of a larger ESD research project, i.e. the VALIES project (valorization of integrated and action-oriented education for sustainable development). The main objective of the VALIES project was to provide primary and secondary school teachers with the necessary competences and didactical methodologies to implement education for sustainable development in their class and school practices. The involved teachers were invited to take part in four different seminars related to ESD during one school year. The main purpose of the professional development program was to be informative and inspiring. First of all, the concepts of holism, pluralism and action-orientation and good practices were introduced by experts in the field of ESD and teachers were encouraged to integrate all aspects of sustainable development into their teaching. Furthermore, didactical ESD teaching practices in line with the school curriculum were provided while also the whole-school approach for ESD was explained. In addition to the four seminars, VALIES staff members (including pedagogical counsellors) visited the school several times during the year to provide support and reflect on their actions. Figure 1 in Appendix shows the content and the timeline of the ESD intervention. With the pedagogical freedom embedded in Belgian and Flemish schools, schools and educators can determine the content of their education, the educational vision, and the pedagogical method (European Commission, 2020), which was also reflected in the VALIES project. In the project, we did not look into detail or evaluate individual sustainability projects implemented by schools and teachers. For clarification, we offer one specific example of an ESD project in one of the involved primary schools. The common theme for the school was ‘waste’. First, the different involved classes started with a simple trip to the supermarket to look at plastic waste and unnecessary single-use plastic packaging being part of concern in our society. The teacher and pupils had a classroom discussion about the broader impact and expressed their emotions about it. Furthermore, the pupils elaborated on solutions to take action to involve the other children from the school into the project.

The VALIES schools got a lot of freedom in the developing of their sustainability projects and activities. Within each school, pupils from at least one class were asked to participate in the project and to fill in two questionnaires at two different points in time. Pupils with an informed consent given by both the pupil and one of the parents, filled in the first questionnaire in September 2019, before the start of the ESD intervention. All teachers received the same instructions for the implementation of the questionnaire to enhance reliability. Schools could choose to fill in the questionnaire during school hours online or on paper. During the first survey wave in September 2019, most schools chose to fill in the questionnaire on paper.

During the second wave in June 2020, due to the COVID-19 pandemic, most pupils filled in the questionnaire online, at home.

Before the start of the ESD intervention at schools, 47 schools participated in the VALIES project and a total of 1894 pupils from both primary and secondary schools filled in the first self-administered survey. However, due to the COVID-19 pandemic in Belgium, schools had to close during three weeks in March 2020 and switch to online teaching between April and June 2020. This has led to a dropout of schools in the VALIES project. Some schools decided to stop the project and did not fill out the second part of the questionnaire in June 2020. Other schools reduced their ESD activities as originally planned or postponed the activities to the next school year but let their pupils fill in the questionnaire. Due to the impact of the COVID-19 pandemic on the VALIES project, the researchers do not have the exact information of the implementation of the ESD activities in schools during March and June 2020. This means that some schools included in the dataset will have had increased attention during the year, but others will not – and we are unable to distinguish these schools. However, we can still investigate the effects of the intervention when taking all schools together, and the results here will be a conservative test of such intervention: as schools that did not fully complete the project are also included, we can only expect effects to be larger if all schools were to participate.

After the intervention, in June 2020, a second, identical questionnaire was organised within the project. As noted before, due to the pandemic, some schools decided to focus on other priorities and did not let their students fill in the second questionnaire. Most schools that decided to participate in the second questionnaire asked their students to fill in the questionnaire as homework which has led to a fall in participation. A total of 729 students filled in the second questionnaire. For the current study, student outcome data were collected from 699 students from 27 different schools (13 primary schools and 14 secondary schools) across Flanders who filled in both questionnaires for the project.

5.3.2 Dependent variables

For our study, we use the reduced version of the sustainable consciousness questionnaire scale SCQ of Gericke et al. (2019). To test whether the VALIES project had an effect on sustainable attitudes among pupils, we focus on three distinct dependent variables. More specifically, we focus on knowledge about sustainability, sustainable attitudes, and behaviour (Gericke et al., 2019). Each of these dimensions was measured using a battery of items. For knowledge about sustainability, pupils were asked to indicate for a range of topics whether or not it could lead to people having a good life without damaging the planet on a scale ranging from 1 (“do not agree at all”) to 5 (“fully agree”). The included topics were: reducing the use

of water; maintain biodiversity; learn how to protect against natural disasters; solving conflicts in peace by talking to each other; respect human rights; provide universal education; companies should treat employees, customers and suppliers fairly; fair distribution of food and medicine; fighting poverty. Three of these knowingness items from the SCQ scale are directed towards environmental knowingness (i.e. water, diversity, and protection); three are directed towards social knowledge (i.e. peace, respect, and education); the last three are directed towards economic knowledge (i.e. responsibility, goods, and poverty).

Sustainable attitudes were measured using a list of items for which respondents could indicate their opinion on the same scale. The included items were: introducing stricter laws to protect the environment; taking measures to fight climate change; teach everyone how we can live well without damaging the planet; people living now should make sure the future generations can have a good life; men and women should have equal opportunities in education and work; companies should use less disposable packaging; reducing poverty; employees from poor countries should have the same conditions as in rich countries. Two of these attitudinal items are directed towards environmental attitudes (i.e. take measures, stricter laws and regulations); three are directed towards social attitudes (i.e. opportunity to acquire skills, people in the future same quality of life, women and men same opportunities); and three are directed towards economic attitudes (i.e. companies responsibilities, reduce poverty, employees same conditions). Finally, sustainable behaviour was measured using the same scale, where pupils could indicate whether they: sort food waste; try to reduce waste; recycle; support aid organisations; show the same amount of respect to men and women, boys and girls; avoid buying things from companies that do not treat their employees well. Three of these behaviour items are directed towards environmentally friendly behaviour (i.e. sorting waste, sorting organic waste, and reducing waste); two are directed towards social behaviour (i.e. support aid organization, respect men and women); and one is directed towards economic behaviour (i.e. ethical consuming).

For the three dimensions under investigation (knowledge, attitudes, behaviour) respectively, we expect that the different items measure three underlying concepts. To test this, we include the items in a factor analysis for the different dimensions respectively. The results of this analysis are reported in Table 5.1. The results show that the answers to the different items indeed load onto latent concepts. Some factor loadings are on the low side, which could be expected as younger pupils might not have a set of attitudes and knowledge as strong as coherent as adults. However, none of the factor loadings is below a critical threshold as defined by Brown (2015), and as the measures of Cronbach's Alpha ranging between 0.747 and 0.865 indicate sufficiently strong factors, we create single index scores of the three dimensions by taking the mean answer to the different items for every dimension respectively.

Table 5.1. Factor analyses for the different dimensions under investigation

Knowledge		
Item	Wave 1	Wave 2
Reduce water	0.405	0.495
Biodiversity	0.495	0.573
Protection	0.514	0.453
Peace	0.571	0.634
Respect	0.596	0.621
Education	0.641	0.696
Equal treatment	0.579	0.534
Fair distribution	0.536	0.626
Poverty	0.583	0.665
Eigenvalue	2.727	3.171
Cronbach's Alpha	0.789	0.822
Attitudes		
Laws	0.600	0.647
Measures	0.695	0.759
Training	0.696	0.744
Future	0.574	0.654
Equal opportunities	0.536	0.545
Disposable	0.619	0.666
Poverty	0.603	0.675
Employees	0.617	0.661
Eigenvalue	3.071	3.609
Cronbach's Alpha	0.833	0.865
Behaviour		
Sorting food	0.586	0.558
Reduce waste	0.719	0.66
Recycling	0.699	0.634
Aid organisations	0.585	0.562
Respect	0.416	0.424
Ethical consuming	0.470	0.599
Eigenvalue	2.086	2.004
Cronbach's Alpha	0.752	0.747

5.3.3 Independent variables

Our main interest in this study is to investigate whether pupils' sustainable knowledge, attitudes, and behaviour changed after they had been part of the VALIES project. In a second step, we test whether there are any differences in these changes between boys and girls. For this measure, we use the self-reported gender of the pupils. We also test whether there are differences between age. The age differences as found in previous educational and ESD research between children and young adolescents and described above, give support to the division of the pupils in our study into two different age groups. To this end, we distinguish pupils in primary schools (typically aged up to 12 years old) and pupils in secondary schools (typically starting at about 12 years old). By distinguishing pupils based on their schooling level, we take into account their educational environment, which would be impossible to do when looking at their age only because some pupils skip or repeat years. However, in general, this distinction accords well with pupils' age. We distinguish these two groups using information in the first survey wave. As we are investigating change over time, it is important to note that the two survey waves were conducted within the same school year, so pupils commonly remain in the same class throughout the year.

5.3.4 Methods

To examine the effects of the VALIES project on pupils' knowledge, attitudes, and behaviour, we follow a stepwise approach. First, we use paired-sample t-tests to test whether there are significant changes in these three dimensions when comparing the pupils before and after the project. Then, we test whether there are differences in these changes between boys and girls, and depending on the level of schooling. We first test the bivariate differences between these groups in the two survey waves respectively. Then, we test whether the increase or decrease between the survey waves differs significantly between groups. To do so, we create a stacked dataset in which the two survey waves are nested in individual respondents. We then estimate linear regression models with the scores on the different dimensions respectively as dependent variables, and include an interaction between an indicator of the survey wave, and the pupil's gender and schooling level respectively. The estimate of the interaction coefficient then shows whether the change between the two survey waves differs significantly between the groups under investigation. The model is thus equivalent to difference-in-differences models but instead of comparing a treated and a non-treated groups, we test for heterogeneous effects between two treated groups.

5.4 Results

First, we test whether the VALIES project changed pupils' sustainable knowledge, attitudes, and behaviour. We do so by comparing pupils' scores on the different index scores between the two waves using paired-sample t-tests. The results are summarised in Table 5.2.

Table 5.2. Changes in sustainable knowledge, attitudes, and behaviour between survey waves

Item	Wave 1	Wave 2	Difference
Knowledge	4.333	4.404	0.070^{***}
Attitudes	4.290	4.363	0.073^{***}
Behaviour	4.034	4.130	0.095^{***}

Note: Results of paired-sample t-tests. Significance levels: $^{+}$: p<0.10: *: p<0.05; **: p<0.01; ***: p<0.001.

The results in Table 5.2 point to several conclusions. First, all the average levels are very high – as all measures have a mean score higher than 4 on a 1-5-scale. This was already the case in survey wave 1, before the ESD intervention. When looking at the items included in the survey, it indeed seems quite easy to agree with all the statements. This might cause ceiling effects in which it is hard to increase levels of sustainable knowledge, attitudes, and behaviour because initial levels were already very high, limiting the room for positive change. However, it is telling that, even though the room for change is limited, the different measures still show significant increases when compared to survey wave 2. Hence, these results show that pupils showed higher levels of sustainable knowledge, attitudes, and behaviour in the second survey wave, after the VALIES project took place. Second, we test whether these changes differ between boy and girls, and between pupils in primary and pupils in secondary education as a measure of their age. First we test whether there are differences between these groups within the survey waves. The results are summarised in Table 5.3.

Table 5.3. Differences between groups in survey waves

	Survey wave 1			Survey wave 2		
	Boys	Girls	Difference	Boys	Girls	Difference
Knowledge	4.263	4.416	0.153***	4.292	4.509	0.216***
Attitudes	4.213	4.374	0.162***	4.274	4.441	0.167***
Behaviour	3.958	4.124	0.166***	4.043	4.120	0.155***
	Primary education	Secondary education	Difference	Primary education	Secondary education	Difference
Knowledge	4.388	4.294	-0.094***	4.463	4.357	-0.105**
Attitudes	4.350	4.230	-0.140***	4.406	4.327	-0.079+
Behaviour	4.130	3.957	-0.173***	4.186	4.079	-0.107*

Note: Results of independent-sample t-tests. Significance levels: +: p<0.10: *: p<0.05; **: p<0.01; ***: p<0.001.

The results in Table 5.3 show that, when looking within waves, there are indeed significant differences between the groups. First, looking at gender, girls score higher on all three dimensions under investigation than boys. The differences average about 0.16 on a 1-5 scale, which is about a quarter to a third of a standard deviation for these items.[26]

These results are in line with previous findings in environmental education research where girls are found to constantly report stronger pro-environmental attitudes and behaviour than boys (Liefländer & Bogner, 2014; Oerke & Bogner, 2010; Zelezny et al., 2000). Looking at level of schooling, and in line to what was expected, pupils in primary schools show higher levels of sustainable knowledge, attitudes, and behaviour, although the differences here are somewhat smaller for most dimensions. All the differences reported in the table are statistically significant. Looking at the size of the differences between waves, some differences became larger between the two survey waves. For example, the difference in knowledge about sustainability between boys and girls was 0.153 in wave 1, but increased to 0.216 in wave 2. Looking at the averages by groups, it seems like girls increased more than boys, increasing the gap between these two groups. Looking at the different schooling levels, the difference in attitudes and behaviour seems to have decreased between the surveys waves.

[26] Standard deviation wave 1 knowledge: 0.498; attitudes: 0.571, behaviour: 0.647. Wave 2 knowledge: 0.489; attitudes: 0.546, behaviour: 0.577

To get a more formal test of the changes in the differences between groups, we create a stacked dataset with waves nested in respondents. We then interact the indicator of survey wave with the variables distinguishing the two groups respectively. The coefficient of the interaction then shows the difference in change between the two survey waves differs between the two groups. The results are summarised in Table 5.4.

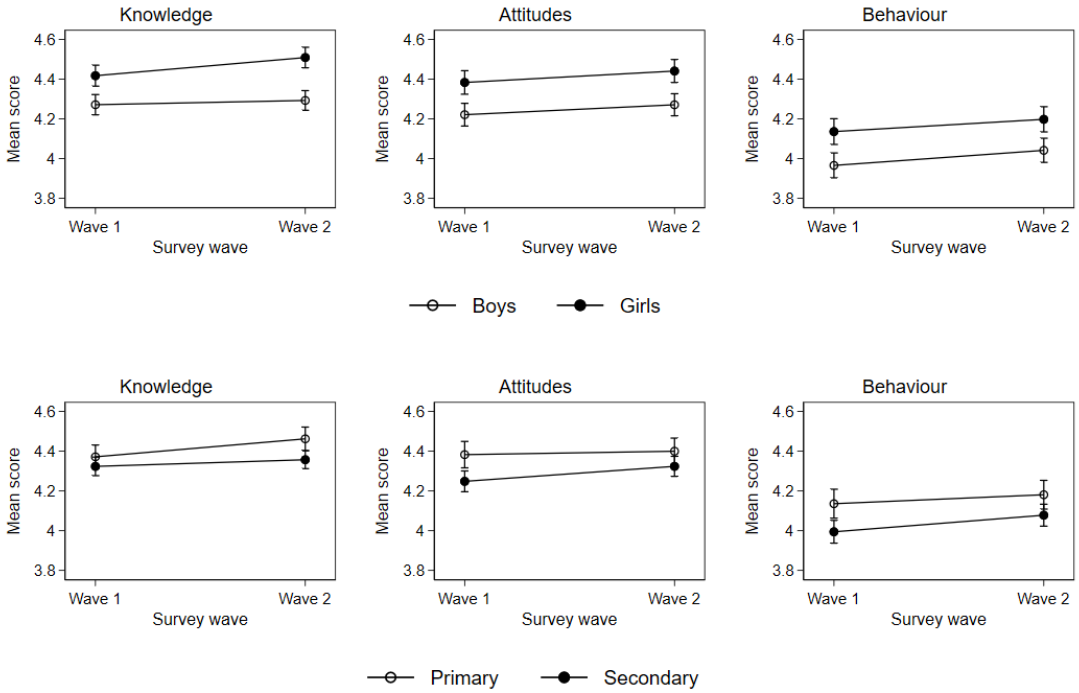
Table 5.4. Differences in changes between survey waves between groups

	Differences gender			Differences schooling level		
	Knowledge	Attitudes	Behaviour	Knowledge	Attitudes	Behaviour
	B	B	B	B	B	B
	(s.e.)	(s.e.)	(s.e.)	(s.e.)	(s.e.)	(s.e.)
Wave 2	0.021	0.050	0.076^{+}	0.091*	0.017	0.045
	(0.036)	(0.041)	(0.045)	(0.043)	(0.048)	(0.052)
Girl	0.146***	0.162***	0.170***	0.182***	0.166***	0.163***
	(0.037)	(0.042)	(0.046)	(0.026)	(0.029)	(0.032)
Secondary education	-0.077**	-0.105***	-0.122***	-0.048	-0.134**	-0.141**
	(0.027)	(0.030)	(0.033)	(0.039)	(0.043)	(0.047)
Wave 2 x girl	0.070	0.007	-0.014			
	(0.052)	(0.059)	(0.064)			
Wave 2 x secondary education				-0.057	0.058	0.038
				(0.054)	(0.060)	(0.066)
Constant	4.319***	4.286***	4.042***	4.284***	4.303***	4.057***
	(0.031)	(0.035)	(0.038)	(0.033)	(0.037)	(0.040)
N	1351	1351	1351	1351	1351	1351
R^2	0.045	0.034	0.032	0.044	0.035	0.032

Note: Results are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: $^{+}$: p<0.10: *: p<0.05; **: p<0.01; ***: p<0.001.

The first three columns in Table 5.4 show the difference in changes between survey waves between boys and girls. The main effects of the wave 2-dummy is not significant, indicating that boys (i.e., the reference category for the gender variable) did not change significantly between the two waves. The main effect of the girl dummy shows that, also when controlling for schooling level, there was a significant difference in sustainable knowledge, attitudes, and behaviour between boys and girls in the first survey wave of the study, with girls scoring higher. The main effect of secondary education also further confirms the findings reported above that, overall, pupils in primary schools score higher than pupils in secondary school. The interaction coefficient shows the difference in changes between boys and girls. As can be seen, the coefficient for knowledge is positive, for attitudes positive but very small, and for behaviour negative. Furthermore, none of the coefficients is statistically significant. There is hence no evidence for differential effects of the VALIES project between boys and girls. Figure 5.1 displays these findings graphically.

Figure 5.1. Differences in changes between survey waves for boys vs. girls and pupils in primary vs. secondary school, respectively



Note: Average score on respective measures by survey wave and by group of respondents. Based on models presented in Table 5.4.

The results in Figure 5.1 further clarify the findings in Table 5.4. While both boys' and girls' sustainable knowledge, attitudes, and behaviour increases, it does so at similar rates. Visually, the largest difference in effect seems to be that girls' knowledge about sustainability increases to a larger extent than that of boys. The coefficient in Table 5.4 shows that girls indeed increase on average 0.070 points more than boys. However, this difference is not statistically significant.

The last three columns of Table 5.4 and bottom row of Figure 5.1 show the same analyses for the difference in changes between pupils in primary and pupils in secondary education. While visually there seem to be some differences in the changes between these two groups, the coefficients confirm that there are no significant differences in the changes between the two survey waves in any of the dimensions. Overall, these results hence indicate that the VALIES project increased pupils' sustainable knowledge, attitudes, and behaviour, and there is no evidence that it did more so for boys than for girls, or for pupils in primary education than pupils in secondary education.

5.5 Conclusion

In this study, we investigated whether levels of sustainable development knowledge, attitudes, and behaviour among pupils from primary and secondary schools in the Flemish region of Belgium differ before and after an ESD intervention taking into account the holistic approach to sustainable development. Moreover, we examined the potential role of gender and age as individual characteristics on pupils' sustainability outcomes. Our findings indicate that the average levels of sustainable development knowledge, attitudes, and behaviour of young people are already very high prior to the ESD intervention, implying a ceiling effect in which pupils with little room for positive changes. However, the average outcomes of sustainable development levels in our study still show humble but significant increases after the ESD intervention in the classroom.

In line with previous research, the results show that girls score higher on all three dimensions of sustainable development than boys. However, we do not find evidence that this difference between girls and boys changed significantly because of the intervention, indicating that the ESD intervention in our study could not decrease the gender gap in education as argued by Casimir and Dutilh (2003). At the same time, looking at the level of education, and in line with other studies (Liefländer & Bogner, 2014; Negev et al., 2008), pupils in primary schools show higher levels of sustainable development. Students from secondary schools (grade 7 and 8) thus show the same adolescent dip as was found in previous research looking at an ESD intervention (Olsson et al., 2016). As summarised in more detail in the theoretical section above, these previous studies suggested that this dip can be caused by a too normative teaching tradition by the teachers (Olsson et al., 2016) and youth having less consideration for the environment compared to older and younger children (Kaplan & Kaplan, 2002). However, also here we do not find evidence of differential effects. In light of the growing emphasis on ESD in formal and informal education, further research on the gender and educational level variables are needed. Scholars should identify the factors that explain the differences across gender and age.

Some limitations should be considered when interpreting our results. A first limitation of our study is the use of self-reported measures. Self-reported behaviour does not necessarily align with actual behaviour (Kormos & Gifford, 2014). The issue of self-reporting therefore highlights the crucial need for strong validity of self-reported scales, which is why we used an instrument that has previously been developed and tested with strong validity (Gericke et al., 2019; Ariza et al., 2021). A limitation that comes with using this questionnaire, however, is that all items are rather easy to agree with. This leads to possible ceiling effects, limiting room for positive change following the intervention under investigation. Future studies could experiment with other items that are easier to disagree with. Related to this, as schools self-selected

in the ESD intervention, so it can be expected that they were already more likely to have attention for sustainable development in their curricula. This further strengthens the suspicion that the pupils on these schools were already more likely to score high on our measures compared to other schools. Finally, the COVID-19 pandemic interfered with the intervention, as some schools dropped out and other stopped their activities. Taking all these points together, however, we would argue that these limitations make for a very conservative test of the effects of the ESD intervention, as the pupils scored already very high before the intervention, and not all pupils were fully treated. As we still find significant effects, this study can be taken as finding evidence for effects of an ESD intervention in a least-likely case, further strengthening the expectation that these interventions indeed matter.

Another limitation of the study is that schools self-selected in the ESD intervention, and it is hence likely that these schools were already more likely to have attention for sustainable development in their curricula. However, this means that the pupils were already more likely to score high on our measures compared to other schools, making this a conservative test for changes in sustainable knowledge, attitudes, and behaviour. Likewise, the COVID-19 pandemic interfered with the intervention, as some schools dropped out and other stopped their activities. We would argue that the outbreak of the pandemic makes for a conservative test of the effects of the ESD intervention, as some schools had to stop the project or reduce their ESD activities as originally planned and we can hence expect effects to be stronger if the project would have been fully completed. Finally, as we only have two moments of measurement, we cannot test for longer-term patterns.

The implications of the findings are twofold. First, in line with earlier research, this study shows that ESD is important to help today's students developing the knowledge, attitudes, and behaviour to make well-informed decisions to achieve a sustainable future. Considering the fact that all significant changes in sustainable development move in the same direction, the changes are indeed suspected to be influenced by the ESD intervention that took place. Second, our study presents interesting results into the role of gender and age in measuring the levels of sustainable development among primary students and young adolescents at testing secondary schools. In doing so, the study contributes to a better understanding of the general development of young people's sustainable knowledge, attitudes, and behaviour. Whereas it is not sufficient to mitigate differences between boys and girls on the one hand and pupils in primary and secondary education on the other, ESD interventions seem to be an effective way to increase students' sustainable knowledge, attitudes, and behaviour.

PART III: POLITICAL ATTITUDES OF TEACHERS

Chapter 6. Teachers' tolerance for immigrants. The role of diversity in the school region and the place of residence[27]

Abstract

There is a need for reflection on the way teachers cope with diversity as a result of the increasing ethnic and cultural diversity in our societies, which is also reflected in schools and classrooms. The aim of this study is to examine teachers' attitudes towards immigrants and investigates what the determinants are underlying these attitudes. More specifically, the role of contextual characteristics, such as; diversity in the school region and residence of the teacher are taken into account. Data from a representative teacher survey which were tested in a multilevel model provides evidence to support the intergroup-contact theory. Secondary school teachers living and/or teaching in a community with a higher immigrant concentration, differ in their tolerance from those living and/or teaching in a region with less ethnic diversity. Furthermore, highly educated teachers with a master's degree (or higher) and teachers teaching in general-track levels seem to show greater tolerance compared to teachers with a bachelor's degree and teachers teaching in technical, artistic or vocational secondary education tracks.

[27] This chapter is based on the following paper: Verachtert, S. (2023). Teachers' Tolerance for Immigrants. The Role of Diversity in the School Region and the Place of Residence. *Working paper*.

6.1 Introduction

In numerous societies ethnic and cultural diversity is increasing because of globalisation and migration flows. Student populations in Western countries reflect this global trend and have become more diverse over recent decades (Santoro, 2015). According to Han and Thomas (2010), teachers must be aware of their own prejudices and need to be able to use culturally appropriate strategies to work with young people from diverse ethnical and cultural backgrounds. Similarly, other scholars argue that teachers should set an example for their students by showing how to be culturally responsive in a diverse society (Valdivia & Montoto, 2018, p. 511) due to their importance as role models in the school context. Moreover, research provides evidence showing that teachers' implicit racial attitudes are promising predictors of children's racial attitudes (Vezzali et al., 2012). Given this significance, it is important to understand how teachers currently think regarding diversity issues. There is already a considerable amount of studies available concerning teachers' attitudes with respect to aspects of a globalised world such as ethnic and cultural diversity and multiculturalism (Hachfeld et al., 2011; Glock et al., 2019; Vedder et al., 2006). However, these studies are mainly based on qualitative research (Everington et al., 2011; Walker, 2011) and are considered from an almost exclusively individual perspective (van Middelkoop et al., 2017; Baños et al., 2020) or school perspective (Agirdag et al., 2016). Nonetheless, contextual characteristics and the impact of the wider context such as the role of the diversity in the municipality teachers are living and/or working in, may also be important underlying factors which are correlated with teachers' positive or negative attitudes towards immigrants. So far, only a few studies have paid attention to the critical role played by contextual variables and found that teachers' attitudes may vary in regard to their residence – rural, suburban, or urban (Sang et al., 2009; Forrest & Dunn, 2017). What remains unknown, however, is whether or not this finding is also true for tolerance for immigrants, perceived as a particularly socially and politically salient attitude (Hooghe et al., 2013), and an important theme for teachers to be aware of because of the direct implications for teaching and learning (Han & Thomas, 2010). Therefore, the purpose of this study is to investigate whether ethnic diversity at the school region and/or in the neighbourhood is important in explaining teachers' attitudes regarding diversity issues. Referring to the principles of Allport's intergroup contact theory, I presume that teachers exposed to higher levels of diversity in the school region and/or in the neighbourhood reduces prejudice toward immigrants while those residing and working in less diverse areas, on the other hand, are more negative towards immigrants. Although this study does not take into account the level of diversity of the school itself, we might expect that the diversity in the school region is related to the ethnic composition of the school where the teacher is employed. Following Vervaet et al. (2018) "it has been reported that teachers in schools with a higher proportion of ethnic minority pupils are assumed to be more familiar with diversity and to have more intergroup contact, which is related to reduced ethnic prejudice" (p. 279).

The current paper adds to existing research by employing a multilevel method which allows us to take simultaneously individual and aggregate effects into account to examine teachers' tolerance in relation to the school region and the teachers' place of residence. Furthermore, with this study, I want to contribute to a better understanding of the association between ethnic diversity and anti-immigrant attitudes, building on data at the contextual level from the Flemish (Belgian) context.

6.2 Literature

For the purpose of this study, I adopt the definition of tolerance as defined by Côté and Erickson (2009), referring to "tolerance" as "including cognitive elements, such as recognition of the real problems of discrimination; evaluative elements, such as feelings that minorities fit into the host society and make positive distributions to it; and political elements, such as willingness to welcome more immigrants or to support minorities" (Côté & Erickson, 2009, p. 1665). The existing literature on the determinants of tolerance for immigrants is inconsistent and highlights different explanations for tolerance for immigrants based on the presence of immigrants. First, one major theory explaining attitudes toward immigrants is the realistic group conflict theory based on the hypothesis that competition over scarce resources leads to conflicts between groups (Sherif, 1966; Scheepers et al., 2002). Different social or ethnic groups in society compete for the same resources (for example the labour market or the housing market). For instance, in case of immigrants, if the ethnic majority believes the minority members take away jobs, they would be expected to have more negative attitudes towards immigrants. An important alternative approach is the intergroup contact hypothesis reported by Allport (1954). The intergroup contact theory proposes that contact with members of different groups will reduce prejudice, stereotypes and discrimination and promote positive group relationships and tolerance. Allport made the important remark that more contact between members of different groups is not sufficient to decrease stereotypes and prejudice. Intergroup interaction only yields positive outcomes if a number of assumptions are met. These conditions involve intergroup contact (e.g. ethnic and cultural diversity), cooperation to reach superordinate goals, equal status and institutional support. The majority of the existing literature on high levels of immigration and anti-immigrant attitudes confirms and supports the intergroup contact theory (Janmaat, 2014; Pettigrew & Tropp, 2011). Nevertheless, the influential meta-analytic review from Pettigrew & Tropp (2011) shows that Allport's conditions are facilitating rather than necessary conditions to achieve the positive effect.

Immigrants are often concentrated in urban neighbourhoods (Andersson et al. 2018). Therefore, reasons to explain anti-immigrant attitudes among rural people as compared with urban people may include a higher degree of isolation and less contact with immigrants, a variable which is correlated with hostility towards immigrants (Fennelly & Federico, 2008). The study of Fennelly and Federico (2008), identified that individuals from rural and urban areas differ in their tolerance for immigrants. The authors mention that

"the majority of rural residents (and significantly more than their urban or suburban counterparts) believe that there are too many immigrants in the United States, that immigration is bad for the country, that immigrants take away jobs from Americans, do not pay their fair share of taxes, and that they are a burden on the country because they take jobs, housing and healthcare from other Americans" (Fennelly & Federico, p. 163). In line with these findings, Côté and Erickson (2009) reported similar results in their study of the influence of the size of community, and concluded that tolerance is lowest for people in rural areas, significantly higher for those in midsize communities, and highest of all in metropolitan areas. The effect of the intergroup contact theory on anti-immigrant attitudes has already been largely discussed and tested, and generally concludes increasing tolerance towards immigrants (Pettigrew & Tropp, 2006). However, given the importance of teachers as role models for their pupils, there are relatively few studies specifically looking at anti-immigrant attitudes of teachers' taking into account the regional perspective. Based on the studies above, there is reason to believe that the region of the school and/or the region of residence of the teacher may have an influence on the multicultural attitudes (e.g. tolerance) of a teacher, but this should be tested. One study, conducted in a Chinese context, shows that there were significant differences among teachers considering the geographical teaching area (rural/urban) regarding teachers' educational beliefs (Sang et al. 2009). Drawing upon the contact theory from Allport (1954), I expect teachers working and/or living in a less culturally diverse region to show less tolerance for ethnic minorities than teachers who work and/or live in regions with a high level of cultural diversity. I will investigate the intergroup contact theory in relation to the school region and the place of residence of the teacher and test the hypothesis that teachers living and/or working in an ethnically diverse community, are more supportive of immigration than individuals in communities with a lower percentage of non-European immigrants.

6.3 Flanders as a multi-ethnic society

The survey data which is used in this study was conducted in Flanders, the northern part of Belgium, and offers a sufficient test-case for different reasons. Belgium is a country with rather average levels of anti-immigrant attitudes compared to other Western countries (Stiers & Hooghe, 2022). Belgium and more specifically Flanders, the northern Dutch-speaking part of Belgium, became a migration society since the second world war and changed into a multi-ethnic diverse society (Karsten et al., 2006). Belgium is characterised by an unequal spread of the concentration of non-European immigrants. Many neighbourhoods have low levels of immigrants while other regions have a high proportion of immigrants, leading to less opportunities for diversity, which in the long run might cause social cohesion in society (Andersson et al. 2018).

Schools in Flanders have a great deal of autonomy in defining their curriculum, pedagogical practices and educational orientations and have therefore greater chances to be different from each other (Dumay &

Dupriez, 2008). Schools also differ from one another because the ethnic and socioeconomic school segregation, which is very high in Belgium compared to other Western countries (Agirdag et al., 2013). Consequently, in Flemish research and policy, it is common to talk about 'concentration' schools when schools have a proportion of more than 50 percent of the school population of immigrants (e.g. people from non-European Union countries), while these schools are mostly located in major cities (Van Houtte & Stevens, 2009).

6.4 Data and Methods

6.4.1 Data

I test the hypotheses about the contextual-level influences on tolerance for immigrants on empirical data from a sample of 830 teachers. The data for the analysis result from the first "No Cap" questionnaire which is part of a panel study including two questionnaires representative of the secondary school teacher population of Flanders[1], one of the main regions of Belgium. The panel study was designed to measure the evaluation of the No Cap project; to the objective of this project is to make extremist messages less attractive by supplying correct information, alternative narratives and possibilities for democratic social commitment. The new survey developed for the study comprised questions on radicalisation, polarisation, social media, political attitudes, teaching activities and includes questions related to the individual, class- and school-level. We received a random selected sample of 1933 secondary school teachers from the Department of Education of the Flemish government in Flanders, including the teachers' names and home address. The 1933 potential respondents received an invitation with a questionnaire by surface mail at their home address. They could choose between completing the survey on paper (67.55%) or online (32.45%) survey. An additional letter explained the purpose of the study and the survey and included a unique anonymous code. Participation was voluntary and took 30 minutes on average. *Four* weeks after the initial mailing, a first reminder letter was sent to the teachers, and another *four* weeks later a second reminder was sent, with inclusion of a hard copy of the survey. From the 1933 teachers, 841 agreed to participate in the study and completed the initial questionnaire. The response rate of the total survey is 43.51%, which is reasonably high. For the purpose of analysis in this study, I include all teachers working directly with young people (e.g., class teachers, student counsellors, supervisors). Data from teachers who are retired, people employed in an administrative function, respondents who filled in the survey twice or respondents wo only filled in a few questions, were excluded from the analysis. The final sample included 829 valid teachers, 551 (66.63%) women, 276 (33.37%) men and two participants who did not fill in their gender, with age ranges from 22 to 67 (mean age = 43.62, standard deviation = 10.53). The gender representation is similar to the teacher population in Flanders (63% women, Vlaamse Overheid). Teachers were predominantly from the white middle-class; the largest majority of the teachers (97.67%) was born in Belgium and speak Dutch at home

(97.17%). With regard to the highest educational level, more than half of the teachers has a bachelor degree (53.55%) while another considerable part (38.11%) attained a master degree. The other 7.48% of the teachers in our sample attained a short-cycle higher education degree or lower. When looking at the education track in which the teacher works, the majority of the teachers, 58.47% responded they are working in the technical, vocational and/or the artistic education. The other 41.53% of the teachers teach in the general education. The postal code of the teachers' residence were part of the gathered data from the Flemish Department of education, which was necessary for the sampling. The postal code allows us to trace the residence of the teacher to the municipality level. Furthermore, we asked the respondents in the survey to indicate the postal code of the municipality of the school in which they work. Given the fact that we have postal codes of each teacher in our sample, we know exactly where teachers live and work.

6.4.2 Measures

Dependent variables

In this study, immigrants are selected as the out-group under investigation, and our outcome variable 'tolerance for immigrants', combines interrelated views related to immigrants, clustered into one category through exploratory factor analysis. Four statements regarding the consequences of immigrants in Belgium were analysed. These statements, have already been used successfully in the European Social Survey (ESS), and are strongly correlated (Cronbach's Alpha[4] = 0.804). The teachers were asked to respond on a 5-point rating scale (1 = 'totally agree' to 5 = 'totally disagree'). The scale combines economy, culture, criminality and a positive evaluation of immigrants in Belgium "Immigrants made Belgium a better place to live"), In a final step, Two items were reversed so that a higher score indicate less anti-immigrant attitudes. The exact wording of the items is documented in Appendix A. The frequencies for these items are presented in Appendix D.

Independent variables

Since little research has investigated how the contextual-level variables of the place of residence and the region of the school may or may not affect the teachers' tolerance for immigrants, the ethnic composition is the independent variable of primary interest. However, it is also necessary in the present study to account for other characteristics of teachers which could influence their tolerance for immigrants. At the individual level, relevant demographic measures were assessed within the questionnaire and were included in the analyses as possible determinants of the democratic attitudes as sociodemographic might have an influence on teachers' beliefs on issues of diversity (Dedeoglu & Lamme, 2011). The demographics included in the

analysis are age, gender, education level and education track. As both age and teaching experience were highly correlated (= 0.786), age was used as a proxy for years of experience. Teachers were asked about their age at the moment of answering the questionnaire and is measured in years as a continuous variable. Gender was dummy coded as 0=male and 1=female. I also control for the education level of the respondents (the highest level of education) which was measured with a five-point scale; lower secondary, higher secondary, short-cycle tertiary education, bachelor's degree and masters' degree or higher. I recoded education level into a two-level variable: bachelor's degree or lower and master's degree or higher (see Appendix B for items). Finally, we control for the education track[2] in which the teacher is teaching. Research shows that the percentage of immigrant students is considerably higher in vocational-track schools (Van Houtte & Stevens, 2009; Hachfeld et al. 2011). This indicates that teachers in this track gain more experience interacting with culturally diverse students compared to teachers teaching in general-track schools. Castro (2010) argues that this higher level of intercultural interaction may lead to greater acceptance and appreciation of cultural diversity and more positive multicultural beliefs (e.g. anti-immigrant attitudes). I asked the respondents in our study in which education track they teach. They could indicate general education, technical education, vocational education, artistic education or another education track. We recoded this variable into 1 = general education and 0 = all other forms. The independent variable at the aggregate level is the proportion of non-EU immigrants living in the community or the school region of the teacher. The percentage of non-EU immigrants in our sample ranges from less than 1% to 15% in the municipalities of where the teachers live and ranging from 0 % to 15% in the regions where the teachers are teaching. As discussed above, these percentages indicate that many neighbourhoods have low levels of non-European immigrants while there are also regions with a very high proportions of migrant residents.

6.5 Results

6.5.1 Descriptive statistics and correlations between all measures

Table 6.1 presents the descriptive statistics and correlations between the measures used. All scales had Cronbach's alpha above .70.

Table 6.1
Descriptive statistics and correlations between all measures.

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	1.000							
2. Sex (0 male, 1 female)	0.106**	1.000						
3. Education track (0 all other forms, 1 general education)	-0.071*	-0.072*	1.000					
4. Education level (0 bachelor degree or lower, 1 master degree or higher)	-0.026	-0.081*	0.141***	1.000				
5. Proportion Non-EU immigrants (residence)	-0.031	-0.005	0.084*	0.176***	1.000			
6. Proportion Non-EU immigrants (school region)	0.090**	-0.033	-0.008	0.103*	0.352***	1.000		
7. Tolerance for immigrants	-0.062	-0.079*	0.136***	0.164***	0.222***	0.109**	1.000	

Cronbach's Alpha							0.804	0.922
Mean/percentage	43.621	0 = 33.37% male 1 = 66.63% female	0 = 57,13 % all other forms 1 = 42,87 % general education	0 = 61,03 % bachelor degree or lower 1 = 38,07 % master degree or higher	3.147	4.624	2.884	2.898
SD	10.598	.534	0.495	0.486	2.866	3.427	0.692	0.564
Min	22				0.269	0.000	1	1
Max	67				15.080	15.080	5	4

Note. *** *p<0.01*, ** *p<0.05*, * *p<0.1*

Tolerance for immigrants

In Model 1, I estimated a null model without individual or contextual indicators in order to calculate the intraclass correlation coefficient (ICC). The results of the null model of the multilevel regression, as presented in Table 6.2, indicate that 93,2%, in other words the vast majority of the variance in tolerance for immigrants; the dependent variable, is situated on the teacher level and is due to individual-level differences, whereas 6,8% of the variance could be explained by characteristics on the aggregate level (e.g. municipalities where teachers live) which confirms our choice for multilevel analyses. In the first null model, the intercept of 2.9 presents the overall mean score for tolerance for immigrants of all the secondary teachers. In Model IIa, individual background characteristics are added to the fixed part of the model. The results in Table 6.2 show that both the education track in which the teacher works (0.140, $p < 0.01$) and the level of education of the teacher (0.184, $p < 0.001$) are associated with teachers' tolerance for immigrants. Rather surprisingly, teachers teaching in the general education track show more tolerance for immigrants than those teaching in other forms (i.e. technical, vocational and artistic education). In accordance with the expectation, teachers with a higher education (i.e. master's degree) show more tolerance for immigrants than teachers with a bachelor's (or lower) education degree. In Model IIIa, an aggregate variable was added. Looking at the aggregate measure, the proportion of non-EU immigrants is positively related (0.048, $p < 0.001$) to teachers' tolerance for immigrants. The results show that teachers living in more ethnic diverse municipalities, are more tolerant for immigrants.

I replicated these analyses to investigate whether there is a different association with the municipality of the school where the teacher is employed. Specifically, I wish to test whether the results from the first models held when we take the school region into account. Overall, the results, as presented in Table 6.2, are very comparable. In the second null model, the intercept of 2.87 presents the overall mean score for tolerance for immigrants of all the secondary teachers. The results of the null model indicate that 96%, again the vast majority of the variance tolerance was situated on the teacher level and is due to individual-level differences, whereas 4% of the variance could be explained by characteristics on the aggregate level (e.g. school regions where teachers teach). In model IIb, background characteristics are added to the fixed part of the model. The results in Table 6.2 show a similar pattern to what was observed in the analysis with the residence of teachers. I also found that the education track (0.159, $p < 0.01$) and the level of education of teachers (0.204, $p < 0.01$) are significantly related to teachers' tolerance. Teachers teaching in the general education track and teachers with a higher education (i.e. master degree) show more tolerance than those in the reference categories. In model IIIb, the aggregate variable was added again. Comparable to the results of Model IIIa, the results show that teachers teaching in school regions with a higher proportion of non-EU immigrants, are more tolerant for immigrants (0.018, $p < 0.05$).

Table 6.2
Multilevel analysis of tolerance for immigrants.

	Residence			School region		
	Model I	Model IIa	Model IIIa	Model I	Model IIb	Model IIIb
		B	B			
		(s.e.)	(s.e.)			
Intercept	2.874***	2.974***	2.852***	2.874***	2.959***	2.903***
	(0.028)	(0.122)	(0.123)	(0.025)	(0.123)	(0.125)
Individual-level variables						
Age		-0.003	-0.003		-0.003	-0.004
		(0.002)	(0.002)		(0.002)	(0.002)
Sex (ref.=male)		-0.081	-0.080		-0.066	-0.065
		(0.051)	(0.050)		(0.051)	(0.051)
Education_track (1=general education)		0.140**	0.136**		0.159**	0.163**
		(0.049)	(0.048)		(0.049)	(0.049)
Education_level_teacher (1=master degree)		0.184***	0.164***		0.204**	0.194***
		(0.050)	(0.050)		(0.050)	(0.050)

Contextual-level variables						
Proportion non-EU immigrants (in municipality or school region)			0.048***			0.018*
			(0.008)			(0.008)
Var (residual): individual-level		0.454	0.436		0.433	0.438
		(0.017)	(0.022)		(0.023)	(0.024)
Var (constant) : contextual-level		0.024	0.000		0.018	0.008
		(0.011)	0.000		(0.011)	(0.012)
AIC		1624.8	1604.4		1602.7	1575.0
BIC		1657.5	1641.7		1635.3	1612.2
Number of cases	788	788	788	780	780	780
(Individuals)						
Number of cases	249	249	249	170	170	170
(municipalities)						

Standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6.6 Discussion

In the current study, I extend previous studies by analysing contextual data to shed new light on the contact theory (Allport, 1954) in relation to the school region and the place of the residence of the teacher and test the hypothesis that teachers living and/or working in an ethnically diverse community, are more supportive of immigration than teachers living in communities with a lower percentage of non-European immigrants. The contact hypothesis from Allport (1954), indicates that contacts with members of a socio-ethnic heterogenous environment generally improve intergroup relations. In the first step, I investigated whether the diversity in the teachers' residence plays a role in the teachers' attitudes towards immigrants. In the second step, I tested whether the diversity in the municipality of the teachers' school is important in teachers' attitudes towards immigrants. The hypothesis was largely confirmed by the results of the multilevel analyses: a positive correlation between the proportion of non-EU immigrants in both the school region and the place of residence and teachers' tolerance for immigrants was found. Teachers living and/or teaching in municipalities with more ethnic diversity, are more tolerant towards immigrants. Thus, the current study provides evidence that the presence of immigrants in municipalities is associated with more positive attitudes towards non-EU immigrants, which is in line with the principles of the contact theory of Allport (1954). Despite the major importance of variance at the teacher level, the results show that some variance can also be attributed to the contextual level (i.e. the region of the school and the residence of the teacher). The fact that there is a correlation between the ethnic diversity in municipalities and teachers' tolerance shows that future educational studies should focus more on contextual and aggregate data rather than only relying on individual characteristics. Furthermore, some individual teacher characteristics are associated with tolerance towards immigrants. The results point out that higher educated teachers (i.e. university degree) have more positive attitudes towards immigrants than teachers with a bachelor degree. This is in line with previous studies (Agirdag et al. 2012, Hello et al., 2002; Jackman & Muha, 1984). Surprisingly, teachers who work in the general education track seem to be more tolerant compared to teachers who work in the technical, vocational or artistic track. The fact that we do find a correlation between education track and tolerance cannot be easily explained. In Flanders, the school population in technical and vocational tracks is more ethnically diverse compared to the general education track. Based on the contact theory from Allport (1954) we would expect that teachers in technical and vocational education tracks are more tolerant because of the increased frequency of contact with ethnic diverse students undertaken to investigate the association of these factors. This emphasizes a need for future research to explore which factors may help explain this relation. As for the other individual teacher characteristics, gender and age did not have any influence on tolerance. Older teachers or teachers with more teaching experience are not less or more tolerant towards immigrants compared to younger or less experienced teachers.

Although the current study has some particular strengths, I also acknowledge some limitations that may be remedied in future research. As this study is a cross-sectionals study, causality cannot be determined. The data do not necessarily suggest that increased contact with immigrants has impacted teachers' tolerance toward immigrants. It might also be possible that teachers who are already tolerant to immigrants are more willing to live in areas with more immigrants and work in schools with higher levels of diversity, while teachers who had less tolerance to immigrants would avoid living and working in such contexts. Further research should focus on longitudinal data to evaluate causality. A second limitation lies in the fact that the findings reported here are particularly relevant for our sample of secondary teachers in the Dutch-speaking northern region of Belgium. As a consequence findings cannot be generalized to all Belgium teachers, but only to the Dutch-speaking Flemish teachers. Moreover, further research could be directed at investigating whether teachers perform equally among Belgium and other countries and among different groups (e.g. primary education or higher education). Other future research questions that could be asked include what other external factors influence more positive attitudes towards immigrants, and how such attitudes are reflected in teacher's attitudes toward their students and their pedagogical practices.

6.7 Conclusion

By acting as role models, teachers contribute to the development of intergroup attitudes (i.e. racial and ethnic prejudice) of their students (Bigler & Liben, 2007). In this paper, based on the assumption that not only individual characteristics but also contextual indicators are important in explaining teachers' intergroup attitudes, I have explored the determinants of teachers' tolerance for immigrants. More specifically, I took the role of contextual characteristics into account; the diversity in the school region and the teachers' place of residence. I examined this research question from a multilevel perspective, drawing upon cross-sectional teacher survey data from Flanders from 2020, enriched with municipal statistics. The aim of this study was to explore whether the ethnic diversity of the school region and the diversity in the place of residence of the teacher are associated with teachers' perceptions of anti-immigrants within our society. The results show that teachers living and/or teaching in municipalities with more ethnic diversity, are more tolerant towards immigrants. The findings also highlight the impact of highly educated teachers with a master's degree and teaching in general-track levels showing greater tolerance compared to teachers with a bachelor's degree. The results in this study suggest that researchers focusing on teachers' attitudes should not only look at the individual perspective but should aim at demographic factors as well.

Chapter 7. Ideological and Electoral Preferences of Teachers. A Survey among Secondary School Teachers in the Flemish Region of Belgium[28]

Abstract

Teachers' beliefs influence the democratic values of their students, often through classroom practices. In this line of research, however, the political attitudes and preferences of teachers have received but scant attention. We report on the ideological and electoral preferences of teachers in secondary education in the Flemish region of Belgium. Results suggest that teachers tend to be moderate, eschewing both left and right radical options. We find a strong association between anti-immigrant sentiments, a right wing ideological self-placement, and a vote for radical right wing parties. Furthermore, teachers stress the fact that they should remain 'neutral' in the classroom.

[28] This Chapter is based on the following paper: Verachtert, S., Stiers, D., & Hooghe, M. (2023). Ideological and Electoral Preferences of Teachers. A Survey among Secondary School Teachers in the Flemish Region of Belgium. *Working paper*.

7.1 Introduction

In numerous countries, concern about declining levels of political trust and electoral participation has led to a renewed interest in civic education (Westheimer, 2017). Civic education is also becoming more important for educators, politicians, and researchers in the context of the global challenges such as climate change, globalization, cultural diversity, and social justice (Maaß et al., 2022). It is hoped for that civic education will provide students with the knowledge that is necessary to function as a responsible citizen, and also that it will promote values like tolerance, trust, and other indicators of 'good citizenship' (Green & Janmaat, 2011; Reichert & Torney-Purta, 2019). There is a full body of research on what renders civic education more or less effective, and elements like classroom diversity and an open classroom climate have been singled out in this regard (Rapa, Bolding & Jamil, 2022).

While obviously these elements are very important, it is surprising to observe that one crucial factor is often missing in this line of research: the teacher, who is arguably the most important actor in the process. Students spend a significant amount of time in schools and teachers are important socialisation agents and they have an influence on the democratic values of their students (Myers, 2009). By acting as role models, teachers contributing to a democratic classroom climate foster the development of democratic attitudes (Bigler & Liben, 2007; Perliger et al., 2006). This has been confirmed by teachers themselves in the study of Thornberg and Oguz (2013) where teachers underline the importance of being a good role model for their students. In this line of research it is more or less taken for granted that teachers will strongly support a democratic civic culture themselves, but this clearly is a claim that needs to be empirically investigated. Others have accused the education system of imposing a liberal bias, although empirical research has not confirmed this allegation (Van de Werfhorst, 2020).

Therefore, a major challenge is to know more about the political attitudes of teachers themselves, as this might have an effect on the way they implement civic education. This element is often overlooked while it is obviously an important dimension of the citizenship education research and practices across the world, while much focus is given to students and learning processes (Lindov, 2020). There is quite some research showing that teachers are not immune to various forms of prejudice and there is a clear risk that this will also have an effect on civic education efforts (Starck et al., 2020). In some well-publicized cases, schools have been accused of being strongholds of liberal values, and of trying to transmit these liberal values to the next generation of students. Other authors also depart from the assumption that teachers will be more liberal than the general population, but they are much more positive in this regard. In this line of research the expectation is that exactly these liberal value patterns will help teachers to achieve an open classroom climate, as they will be more tolerant for the different perspectives of students (Gainous & Martens, 2016).

Unfortunately, most of this research simply assumes that teachers have a liberal value pattern, while there is very little research confirming this expectation (Myers, 2009). It is important, therefore, to know

what exactly are the political attitudes of teachers, and that is the goal of the current paper. Our analysis is based on the results of a representative survey that was conducted among teachers at secondary schools in the Flemish region of Belgium. In our study, we seek to determine whether teachers' ideological and electoral preferences vary according to the topic they are teaching. Furthermore, it is not just important to know more about the attitudes of teachers, but also about how they might transmit these preferences. Therefore, we also investigate to what extent they support a neutral teaching method.

7.2 Literature

7.2.1 Civic education as political socialisation

Over the past decades, various education systems have stepped up efforts with regard to civic education (Campbell & Niemi, 2016; Neundorf, Niemi & Smets, 2016). It is assumed that civic education can be a tool to limit or prevent the erosion of democratic attitudes, and that it can function either as a separate subject or in a cross-curricular manner. Civic education in a school context largely can be seen as a mechanism of political socialisation, where relevant attitudes, values, and behavioural patterns are being transmitted from one generation to the next (Coenders & Scheepers, 2003; Hooghe, 2022). The assumption is that civic education will be associated with the development of democratic norms and values among children and adolescents (Hello et al., 2002). Both the explicit goals of the civic education program, and the experience of cultural diversity within the classroom, are associated with the development of a more positive attitude toward diversity (Hello, 2003; Dejaeghere et al., 2012). Conceptualizing civic education as a form of political socialisation does not imply that adolescents are just passive recipients of the message the school system wants to convey to them. There is an abundant line of research showing that adolescents should be considered as active agents that construct their own political identity (Torney-Purta et al., 1999; Flanagan, 2013). Nevertheless, it seems clear that to the extent that schools transmit knowledge and stimulate the development of cognitive skills among their students, they will exert a formative influence on their value patterns (Niemi & Junn, 1998).

While it seems straightforward to consider civic education as a form of political socialisation, we do not know to what extent teachers are actually motivated to take on this responsibility. Especially when civic education is offered in a cross-curricular manner, this means that teachers who were trained in a specific subject, are expected to contribute to a much broader goal of the education system (Reichert, Lange & Chow, 2021). It is obvious that teaching civic education does require some specific skills. If we assume that, on average, teachers will have taken their training two decades ago, it should not be taken for granted that they will have acquired these skills in the framework of their teacher training. Equally important, however, teachers also have to feel competent to address these issues, so both the objective and the subjective level of competency are relevant in this regard (Pit-ten Cate et al., 2019).

Most research in civic education has focused on the impact of an open classroom climate measured by questions such as whether students feel free to express different opinions than those of their teachers, whether they are encouraged to form their own preferences, and whether their opinions are respected (Torney-Purta et al., 1999; Persson et al., 2020). The literature shows a positive correlation between the experience of an open classroom climate and civic outcomes such as political knowledge (Campbell, 2008; Torney-Purta, 2002), interest in politics (Hess & McAvoy, 2015), and the political engagement of students (Neundorf et al., 2016). In this literature, however, it is not clear what effect the attitudes of teachers might have on the results of this process.

7.2.2 The effect of teachers' attitudes

If we consider civic education as a form of political socialisation, the basic assumption is that attitudes and values will be transmitted from one generation to the next. It has indeed been shown that within the family context, there is a strong correlation between the value pattern of parents and those of their children (Jennings, Stoker & Bowers, 2009). In a similar vein, we can expect at least some effect of the specific attitudes of teachers. Teachers can be considered as key transmitters of information about racial, ethnic, cultural, and religious diversity (Thomas & Kearney, 2008) and they clearly influence students' beliefs and attitudes regarding race and difference (Paluck & Green, 2009). Research shows that their political beliefs shape what and how they teach civic topics in diverse ways (Hess, 2005).

Teachers, therefore, should not be considered as just a passive tool to reproduce the values of the school system. Their own attitudes and preferences will have a strong effect on the way they teach (Reichert et al., 2021; Wanders et al., 2021). Even in a formal curriculum, beliefs of teachers are important for classroom instruction and practices (Thornberg, 2008). Knowles (2018) argues that civic education beliefs are correlated with the instruction strategies teachers tend to use. Other scholars suggest that liberal teachers supporting social justice are more likely to implement an open classroom approach that is associated with the development of active citizenship concepts (Gainous & Martens, 2016). Furthermore, Rogers and Westheimer (2017) found that liberal teachers in the US taught about economic inequality more frequently than conservative teachers. Research focusing on voting behaviour, found that US teachers who preferred the Democratic Party were more likely to educate their students to be tolerant of social differences compared to Republican teachers (Farkas & Duffett, 2010). In contrast, other authors are much more pessimistic both about the prevailing values among teachers, and about the consequences these might have on their students. Starck et al. (2020), e.g., found that teachers' racial attitudes are largely similar to the attitudes of the general population and that they include both implicit and explicit racial biases. This approach implies that the education system largely mirrors the prevailing attitudes within society, and therefore also tends to reproduce this dominant value system (Bourdieu & Passeron, 1977). Both perspectives, however, lead to the conclusion that the

attitudes of teachers will have an effect on the way they conduct civic education (Knowles & Castro, 2019). Whether or not this is a positive consideration, however, is a topic for another debate.

It is expected that the attitudes of teachers also have an effect on the cognitive elements of civic education. Teachers make choices about how to depict the subject matters of civic education and what counts as valid and relevant knowledge. They select themes, emphasizing some while ignoring others (Myers, 2009). In this regard, it has been shown that teachers frequently avoid teaching about controversial issues, as they are afraid this might lead to polarization within the classroom setting (Ho et al., 2017). In a politically polarized environment, some teachers will also prefer a strict neutral attitude, in order to prevent any criticism from political actors (Abowitz & Harnisch, 2006).

7.3 The current study

The main goal of this study is to obtain a better understanding of the political attitudes and preferences of teachers through a representative sample of teachers in secondary education. As we are mainly interested in what effect this might ultimately have on their civic education efforts, we also investigate their own view on the role of teachers. More specifically, we want to investigate both the ideological position of teachers, their electoral preference, and their perception about neutrality in the classroom and their pattern of communicating their own political preferences.

More specifically, we have surveyed secondary school teachers in the Flemish region of Belgium. It should be pointed out that Belgium is a federal state with a multi-party system. This region offers a good case study for a number of reasons. First of all, it is important to know that education, including the competence to determine the school curricula, is a regional authority in the federal country of Belgium. There is therefore no 'Belgian' education system, but three distinct education systems: the Dutch language (Flanders), the French language (Wallonia), and the much smaller German language community (Kavadias, Vicente & Spruyt, 2021). Second, the Flemish regional parliament has decided that civic education should be an important element of education, but that it should occur in all courses, not in one specific course on civic education (Loobuyck, 2019; Reichert et al., 2021). This implies that in this region, all teachers share a responsibility with regard to civic education. Various authors have argued quite strongly that mathematics, too, plays an essential role in strengthening a just society (D'Ambrosio, 2011). Furthermore, Starck et al. (2020) argue that studies should explore different groups of teachers separately, depending on their area of training and expertise. Therefore, our focus is not only on the civic education teachers or teachers teaching subjects that are civic related such as social sciences or humanities, but on the overall population of secondary school teachers. In Belgium too, populist and extreme political parties have gained more electoral support in recent years (Rooduijn, 2019; Stiers & Hooghe, 2022). A specific element of the Flemish school system is that a vast majority of students (namely 65% of the students) is enrolled in private schools, that are mainly Catholic-run.

However, as these schools, too, are fully subsidized, these private schools do not have an elitist recruitment as might be the case in other countries.

7.4 Data and methods

7.4.1 Data

The data for this study were derived from a teacher survey conducted among secondary school teachers in the Flemish region of Belgium[29]. Important to note is that the Ministry of Education was responsible for drawing a sample of *all* secondary school teachers in the region. We can thus be confident that in fact the entire secondary school teacher population was reached in the sampling procedure. Data were collected between September 2019 and January 2020 among teachers. In total 1,933 invitations including the paper questionnaire were sent out, and after two reminders, 841 teachers returned a completed questionnaire. Teachers had the choice to fill out the survey online or on paper. The majority of teachers (67.6 %) responded by paper with a prepaid return envelope. The total response rate of the survey was 43.5% which can be considered as reasonably high for a teacher survey, given the challenging times in education due to the COVID-19 pandemic (Verachtert et al., 2022).

The primary purpose of this study was to explore teachers' political attitudes and preferences. Some respondents were excluded from the analyses: we only focus on teachers that are still active in schools and interact with students. Teachers employed in an administrative function or teachers who were no longer active as teachers (i.e., retired or dropout) were not included in the analysis. The final sample included 830 teachers and it was representative for the school type (i.e., public and private schools),[30] school track (i.e., general, technical and vocational track), teaching subjects (i.e., STEM, social sciences, languages, vocational subjects and other subjects), province, age, and gender. Due to the random selection and the representative teacher sample, this survey offers the possibility to obtain a better understanding of the ideological and electoral preferences of secondary school teachers in the Flemish region of Belgium. To investigate whether teachers are an exceptional group with regard to political preferences, it is important to compare them to the general population, both in their ideological position and electoral preferences. As we know that education level has a direct effect on values and attitudes, a correct comparison is with other highly-educated respondents (Simon, 2022; van de Werfhorst, 2020).

[29] In the federal country of Belgium, the Dutch, French and German-speaking communities each have their own education system. The Flemish community is responsible for schools in the Flemish region and for schools in Brussels where Dutch is the main language (in total, ca. 60 % of the Belgian population).

Therefore, we rely on recent electoral survey data to investigate to what extent teachers are distinct, not just from the general Flemish population, but also from respondents in an electoral survey with higher education credentials. In order to compare teachers with both the general and the highly-educated population, the Belgian data of the Comparative Study of Electoral Systems are used (CSES, 2019).

7.4.2 Measures

Dependent variables

The survey includes different political items regarding attitudes and preferences of teachers. The first dependent variable of interest is political ideology, which is operationalized by including a left-right self-placement scale. Research has repeatedly shown that this left-right dimension offers a strong summary of ideological positions, mainly, but not exclusively with regard to economic policy and redistribution (Zuell & Scholz, 2019). The scale ranges from 0 (extreme left) to 10 (extreme right). The respondents were asked to position themselves on this 11-point scale. As a second dependent variable we include the vote choice during the federal elections of the respondents. Vote choice is measured by asking respondents how they would vote if there was a federal election next week. The respondents were given seven options for the seven Flemish political parties (from left to right): the Labour party (radical left), Greens, Social-Democrats, Christian-Democrats, Liberals, Flemish Nationalists, and extreme right (Flemish Interest). Finally, in order to provide a direct reply to the criticism that teachers would be inclined to transfer their own political preference to their students, we investigate to what extent teachers think their lessons should be ideologically neutral. The exact wording for all included variables can be found in Appendix A.

Independent variables

We include a number of independent variables that help us explain the political attitudes and preferences of the teachers. We include basic attitudes that tend to shape electoral behaviour, attitudes with regard to an open classroom climate and neutrality, and characteristics of teachers. We investigate the effect of the same independent variables on both the ideology and the electoral preferences of the teachers.

Anti-immigrant attitudes

Our first dependent variable, that is based on the left-right cleavage, has been supplemented by a liberal-conservative cleavage in numerous societies (Kriesi et al., 2012). For the specific Belgian context, this cleavage is centered mostly on anti-immigrant sentiments, as extreme right wing parties that have been quite successful in recent elections, tend to highlight this issue (Stiers & Hooghe, 2022). Therefore, our first independent variable is the attitude on immigration. This variable combines three statements regarding the alleged consequences of immigrants in Belgium, and factor analysis shows these three items constitute a valid scale (see Appendix C). The teachers were asked to respond on a 5-point Likert scale ranging from 1=‘fully agree’ to 5=‘fully disagree’. Higher scores indicate stronger anti-immigrant

attitudes. The different indicators have already been used successfully in previous studies, and are also strongly correlated in our study (Cronbach's alpha = 0.78). Therefore, we create a sumscale adding up the values on the items and dividing it by the number of items.

Open classroom climate

Teachers who are able to create a classroom climate where all students feel free to express their opinion, tend to be more effective with regard to civic education efforts. Therefore, we included a subjective measure of an open classroom climate (as assessed by the teacher). The item "Every opinion in the classroom can be expressed, even extreme or radical", with answers categories ranging from 1 (fully agreed) to 5 (fully disagreed), was asked to assess an important characteristic of teachers' democratic classroom. The item was reversed so that a higher score indicates more tolerance for different opinions in the classroom.

Neutrality

We also included two subjective indicators of the professed neutrality of the teacher with regard to politics. In order to provide a direct reply to the criticism that teachers would be inclined to transfer their own political preference to their students (Cotton, 2006), we investigate to what extent teachers think their lessons should be ideologically neutral. This is measured as the respondents' opinion on the preferred neutrality for a teacher on a scale ranging from 1 (fully agree) to 5 (fully disagree). Furthermore, we investigate whether teachers have the feeling students know their own political preferences, again on a scale ranging from 1 (fully agree) to 5 (fully disagree). These two items were again reversed so that a higher score indicates a stronger agreement with the importance of neutrality.

Teacher characteristics

A first obvious teacher-related variable is gender. We know that the teaching profession is dominated quite strongly by women, while we also know that women tend to vote more liberal (Atkeson & Rapoport, 2003). Therefore, we include the sex of the respondent (1=female). We also include the standard demographic variable of age. We also assume the teaching subject the teacher is involved in will make a difference, with social science and humanities teachers adopting a more liberal position than teachers of STEM (Science, Technology, Engineering, and Mathematics) related disciplines (Van de Werfhorst, 2020). We grouped the teachers into five groups, that is (1) STEM: biology, sciences, geography, chemistry, physics, and mathematics; (2) social science: social science, religion, and history; (3) languages: Dutch and foreign languages (i.e. French, English, and German); (4) vocational and practical subjects; (5) other subjects: physical training, philosophy, music, arts, and psychology and (6) others. It is important to note that teachers could indicate more than one alternative when teaching several subjects, but only 3.97 per cent of all respondents indicated teaching two or more subjects. Furthermore, we know that higher education tends to be associated with a more liberal value pattern

(Scott, 2022). There is an interesting variation in this regard, as some teachers have a university degree, while others have attended a community college. Respondents are divided into three categories: community college; university: respondents having received a master degree (or higher); and other. Fifth, the school type is characterized by two major forms of education A vast majority of schools in the Flemish region of Belgium is private, and in practice they are Catholic run schools (Brutsaert, 1995). The other type of schools are public schools. It could be expected that in Catholic school a more traditional worldview will prevail (Youniss, 2009). We include the type of school as private=0 and public=1. For the descriptive statistics of the independent variables, see Table B.1 in Appendix B.

7.4.3 Methods

To examine teachers' political and electoral preferences, we follow different steps. First, we look at the descriptive statistics of the dependent variables of interest. Second, because little is currently known about our main research question, we have taken a step-by-step approach to arrive at the best-fitting model for each dependent variable. The methodological approach in this paper is based on two dependent variables. The first dependent variable measures political ideology. In the second analysis, we measure electoral preferences as a dependent variable. Since our first dependent variable 'left-right identification' is a variable with a continuous scale, linear regression (OLS) was applied. Since the second outcome variable 'electoral preferences' is nominal, multinomial logistic regression was used. The dependent variable consists of seven different parties, with the most centrist party, the Christian-Democrats as the reference category. We estimate multivariable models in order to take into account the effect of an open classroom climate, neutrality and communicating political preferences and in a final step the teacher characteristics (i.e. gender, age, teaching subject, school level, educational level).

7.5 Results

Descriptive Statistics

To address the main research question of our study, we first review the distribution of the self-placement on the left-right scale and the electoral preferences of the teachers. Table 7.1 provides the descriptives of the key variables.

Table 7.1. Descriptive statistics of key variables among Flemish teachers, Flemish voters and Flemish highly educated respondents.

	Teachers			Full sample CSES Belgium/Flemish region			Highly educated respondents CSES Belgium		
Variable	**Frequency**	**Percent**	**Mean (Std.dev).**	**Frequency**	**Percent**	**Mean (Std. Dev)**	**Frequency**	**Percent**	**Mean (Std. Dev)**
Left-right identification	812		4.66 (1.83)	1,013		5.63 (2.23)	459		5.48 (2.16)
Electoral preferences:									
Liberals	87	13.49		130	13.39		71	16.14	
Flemish Nationalists	119	18.45		265	27.29		122	27.73	
Greens	173	26.82		133	13.70		95	21.59	
Christian-Democrats	123	19.07		152	15.65		64	14.55	
Radical left	27	4.19		59	6.08		28	6.36	
Radical right	22	3.41		126	12.98		25	5.68	
Socialists	94	11.33		80	8.24		24	5.45	
Total	645	14.57		945	97.33		945	97.5	
Blank vote/invalid vote	54	6.51		17	1.75		5	1.14	
Other party	37	4.46		9	0.93		6	1.36	
Missing values	94	11.33		113	10.42		43	8.90	
Anti-immigrant attitudes	812		2.74 (.84)	1,013		3.33 (1.01)	459		3.07 (.98)

Looking first at the left-right identification, we can observe that Flemish teachers tend to be moderate, with a mean level of 4.66 on a the left-right scale ranging from 0 to 10. When we look at the electoral preferences, we can see that teachers eschew both the radical left labour party (only 4.2 per cent) and the radical right populist party Flemish Interest (3.4 per cent). Second, it can be observed that, overall, on the basis of the Chapel Hill expert survey, Flemish teachers primarily (65 per cent) vote for parties at the middle (Christian-Democrats) and the left side (Socialists, Greens) of the political spectrum while they vote less often for political parties at the right side (Liberals, Flemish Nationalists and the radical right) of the continuum. Furthermore, the results indicate that the Greens seems to be a popular party for teachers, which is in line with results from other countries. The results provide evidence that most teachers place themselves in the middle of the left-right scale which is also reflected in their voting behaviour. Furthermore, in order to provide a direct reply to the criticism from alt-right extreme groups that teachers would be inclined to transfer their own political preference to their students, we investigated to what extent teachers think their lessons should be ideologically neutral. The results (Appendix D.2), indicate that the majority of the teachers fully agree (24.2 per cent) or rather agree (47.8 per cent) with the fact that they should remain neutral in their classroom. Furthermore, the results show that only 8.2 per cent of the teachers fully or rather agree with the fact that students know their political preferences. This too, suggests, that teachers tend to be rather elusive in communicating their political preferences in a classroom context.

When comparing the teachers to the general Flemish population with regard to the left-right identity, we can observe that the overall Flemish population places themselves substantially higher on the scale, with a mean level of 5.63, compared to teachers (4.66). In addition, we compared the left-right identity of teachers to other highly-educated people in Flanders.[31] We do so, because high education levels tend to be associated with a more liberal value pattern so any specific pattern we might detect among teachers, might be related to the fact that they are highly educated. This, however, is clearly not the case as the ideological position of highly educated respondents in CSES-Belgium (5.48) does not differ all that much from the average for the entire population.

When we look at the electoral preferences, the voting pattern for the Liberals, Christian Democrats and the radical left-wing labour party is quite similar among teachers, the general Flemish population, and other highly-educated citizens. Although the Green party remains the most popular party for teachers (26.8 per cent) it also seems to be a popular party for other highly-educated people (21.6 per cent), compared to the general population (13.7 per cent). The radical right party is clearly more popular among the general Flemish population, compared to teachers (3.4 per cent) and other highly-educated respondents (6.4 per cent). Interestingly, we find more differences for the Flemish Nationalist party,

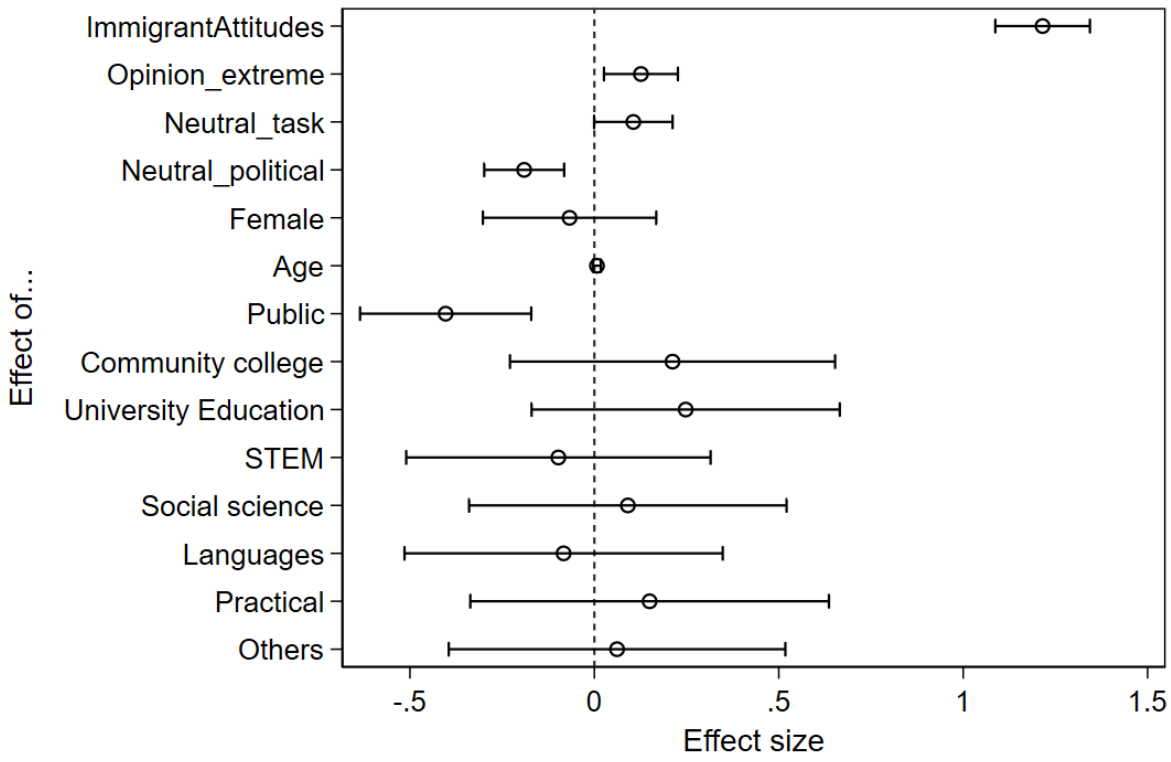
[31] In Flemish schools, teachers at the lower secondary education level are required to have a bachelor's degree in teacher education. Teachers in upper secondary education need to have completed a master's degree and a specific teacher education certificate.

with teachers voting less often for this party (18.5 per cent) compared to the general population (27.7 per cent) and all highly-educated respondents (27.3 per cent). While teachers clearly support the Greens more strongly than the general population, and they are less likely to vote for the radical right, these preferences are largely in line with what we find for all highly educated respondents in a population survey.

OLS regression

We used a multivariable regression analysis to investigate the ideological identification of teachers with regard to anti-immigrant attitudes. We included this attitude because party positions on immigration are one of the most salient issues in Belgian politics (Okolikj & Hooghe, 2022; Stiers & Hooghe, 2022). Next to anti-immigrant attitudes, we also included controls for gender, age, teaching subject, school type, educational level, a variable of an open classroom climate and two variables on the neutrality of the teacher. We conducted multiple regressions to allow us to measure the effect of each predictor while controlling for the other relevant variables. We add information to the model step by step, first on the teacher attitudes and subsequently the teacher characteristics. Starting from Model 1, reported in Table 7.2, we test the impact of the political attitudes on the ideology preferences. Model 2 adds the open classroom climate attitudes and neutrality attitudes of the teacher. Finally, Model 3, the final model, includes also the teacher characteristics. The results show that the full regression model explains 38% of the variance in ideological identification. To provide an easier overview of the results, the coefficients of the full model are displayed in Figure 7.1.

Figure 7.1. The association between teacher characteristics and left-right ideology



Some authors assume that the left-right cleavage (based on economic issues) and the liberal-conservative cleave (based on values) are only weakly related. However, we find evidence that anti-immigrant attitudes are strongly associated with ideological identification, significant at the 0.001 level, with a coefficient of 1.215, showing that teachers with stronger anti-immigrant attitudes position themselves more on the right side of the ideological spectrum. This would suggest that, at least among this group of teachers, there is a strong correlation between the traditional left-right ideological placement, and the cleavage between liberals and conservatives. Communicating political preferences to students is negatively related to the self-positioning on the left-right scale (B=-0.190, p<.001). This indicates that teachers who agree with the fact that their students know their political preferences, score 0.19 points lower on the left-right scale. Furthermore, teachers who are more tolerant for different perspectives of students position themselves more on the right side of the ideological spectrum. When we look at teacher characteristics, teaching in public schools has a negative effect on the left-right scale (B=-0.403, p<.001), indicating that teachers teaching in a public school score -0.41 points lower on the left-right scale than those teaching in private schools. We also expected that teaching STEM subjects, might affect the political attitudes of teachers. Interestingly, we do not find evidence that the subject that is taught, has an effect on the ideological identification. Apparently, all teachers tend to share a rather similar political culture, without marked differences according to the subject.

It is important to note that 33 teachers in our sample teach subjects belonging to different subject groups. Therefore, as an additional robustness test, we conducted the same model with teachers belonging to only one subject group. The results show the same conclusions as presented here (Appendix F).

Table 7.2. Multivariate regression explaining ideological identification

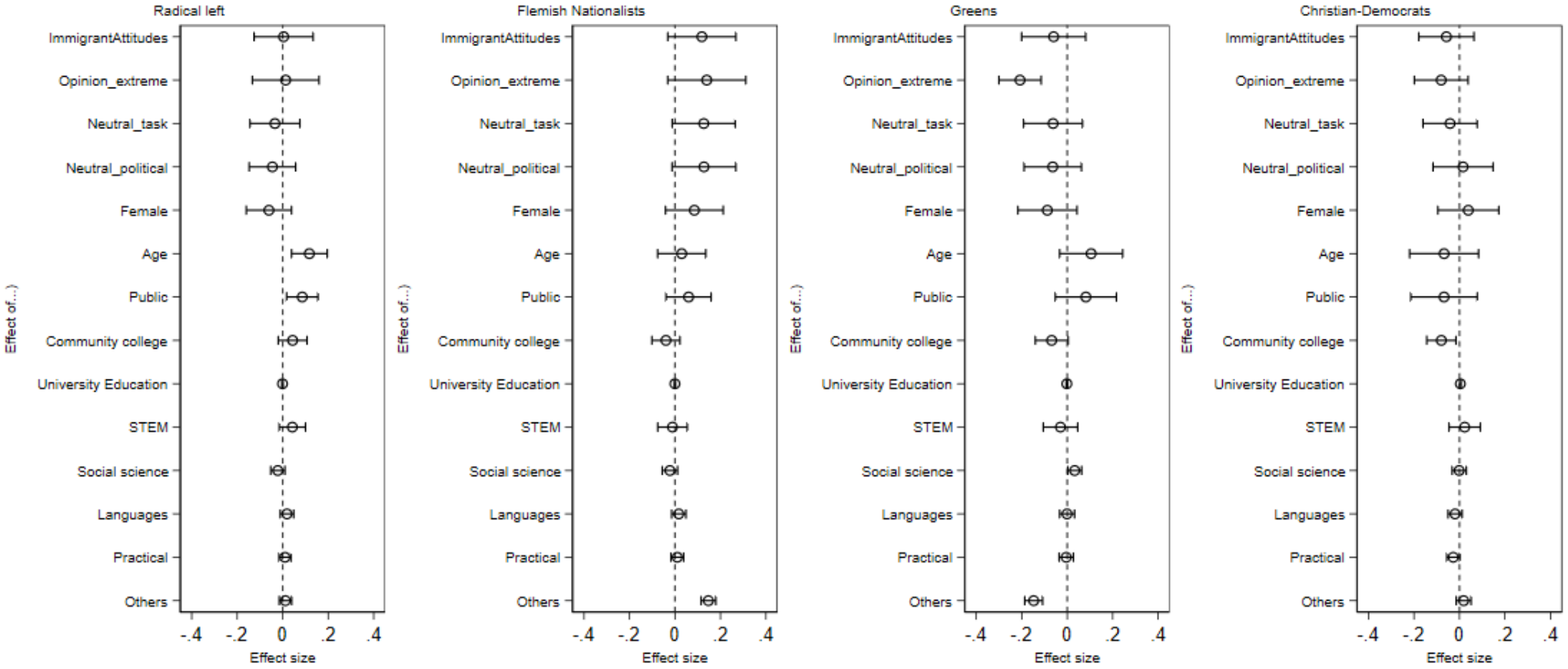
	Model 1	Model 2	Model 3
Anti-immigrant attitudes	1.270*** (0.062)	1.225***(0.063)	1.215***(0.065)
Open classroom climate		0.134**(0.051)	0.126**(0.051)
Neutrality in education		0.105(0.054)	0.106(0.054)
Political preferences		-0.184***(0.054)	-0.190***(0.055)
Gender (ref.=male)			-0.064 (0.120)
Age			0.007 (0.005)
School type (ref.=private)			-0.403*** (0.118)
Education: other education (ref.)			
Education: Community college			0.248 (0.213)
Education: University			0.212 (0.225)
STEM			-0.097 (0.210)
Social sciences			0.091 (0.219)
Languages			-0.083 (0.220)
Practical			0.150 (0.248)
Other subjects			0.062 (0.232)
Constant	1.205***(0.179)	0.761(0.325)	0.380(0.512)
Observations	781	781	781
R-squared	0.345	0.368	0.383

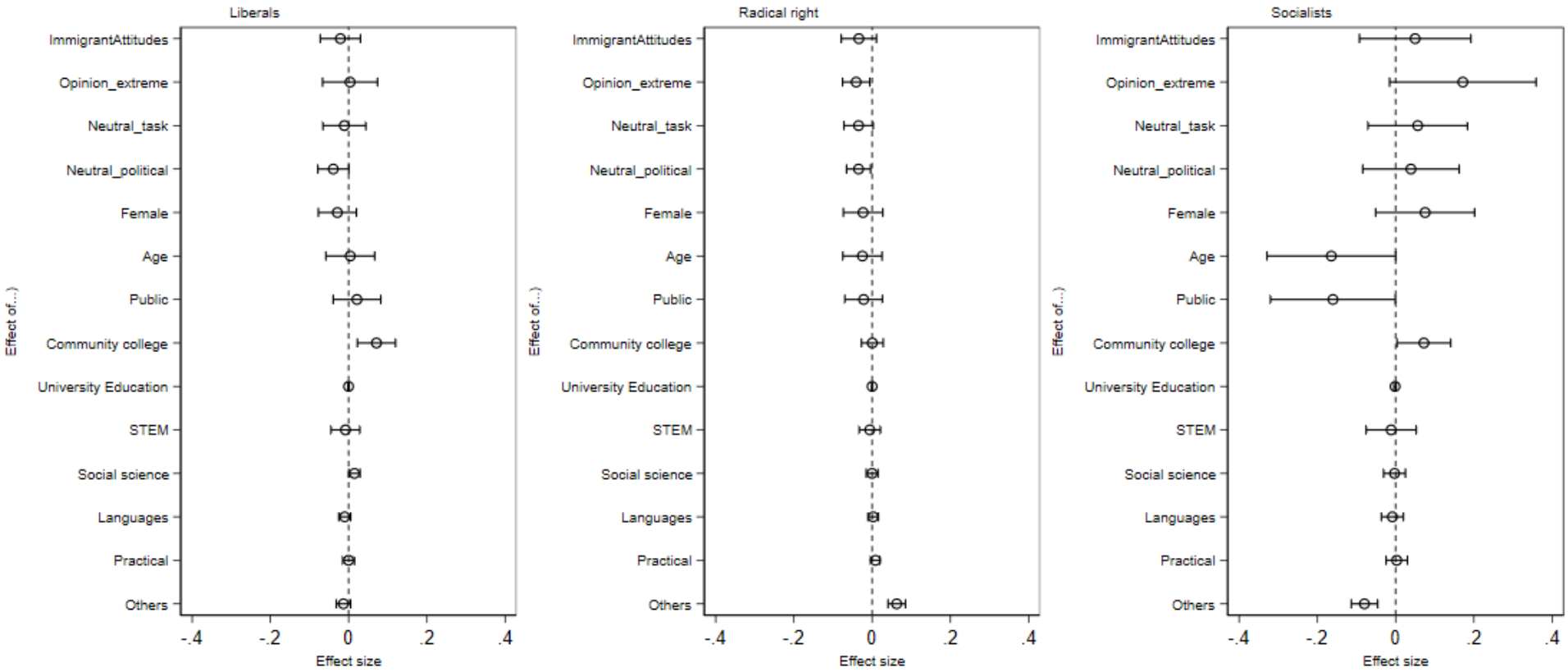
Note: *** p<0.001, ** p<0.05, * p<0.01. Entries are unstandardized OLS coefficients with standard errors between brackets

Multinomial logistic regression

Turning to our next research question, we conducted a multinomial logistic regression on electoral preferences. The multinomial logistic model results, in terms of odds ratio, are presented in Table 7.2. The center party (Christian-Democrats) is used as the reference category. In the model, we included again controls for anti-immigrant attitudes and teacher characteristics. To make the results easier to interpret, Figure 7.2 shows the average marginal effects on the vote for the other seven parties in Flanders (Belgium).

Figure 7.2. The association between teacher characteristics and voting behaviour





Note: Coefficients of a multinomial logistic regression and 95% confidence-intervals.

The results displayed in Figure 7.2 show that teachers with stronger anti-immigrant attitudes are more likely to vote for the Flemish Nationalist party and the radical right Flemish Interest, while they are less likely to support the Greens and the Socialists. When we look at teacher characteristics, the results show that teachers with a university degree or teachers graduated from a community college, are more likely to support the Green party and the radical left labour party, and less likely to vote for the social-democrats. Gender and age do not predict the voting behaviour of teachers. As expected, teachers working in a public school are more likely to vote for the liberal party and the Socialists and less likely to vote for the Christian-Democrats. Furthermore, tolerance for different perspectives of students does not seem to influence voting behaviour of teachers. The neutrality of teachers and communicating political preferences to students are not related to the vote choice of teachers.

7.6 Conclusion

While there seems to be a consensus that civic education can be an important tool to counter trends toward democratic backsliding in liberal democracies, thus far there has not been a lot of research on the most important actor involved, i.e., the teacher. As other scholars have already suggested, we need to take into account the beliefs and 'voices of teachers' to enhance a better understanding of teaching practices that lead to democratic education (Kerkhoff & Cloud, 2020). In this article we report on the results of a representative survey among high school teachers in Belgium. A first and important result of the analysis is that teachers in fact do not deviate all that much for other highly educated voters. They tend to be more liberal with regard to immigration and diversity, but in general the differences between their opinions and those of all highly educated inhabitants of the region tend to remain limited. While some mass media have paid attention to the alleged liberal bias in education systems, it needs to be noted that *all* higher educated citizens tend to have a more enlightened, liberal ideological position, and teachers are not an exception in this regard. All in all, teachers seem to have a rather moderate ideological and political preference.

It can be observed, furthermore, that they tend to avoid extreme positions, and this goes both the extreme right political party (Flemish interest), as for the radical left political party (Labour Party). It is important to note here that both extreme positions (left and right) are being avoided by the teachers, so in general they tend to follow rather mainstream ideological positions. For further research it would be relevant to determine whether this is a self-selection or a socialisation process. Those starting in teacher training most likely will have more agreeable personality traits, which would also mean that they are not likely to adhere to extreme positions. On the other hand, years of experience with discussions in the class room might also lead to this more consensus seeking attitude. Future research among those starting teacher training might shed more light on this question.

Furthermore, our analyses show that political attitudes are important regarding ideology and electoral preferences of teachers. The fact that our initial hypotheses were not confirmed is important in this

regard. The null findings indicate that teachers are not a clearly distinct group within society, but rather that they do not deviate in a significant manner from society as large. Therefore, the concerns about a specific ideological bias in the education system, are not supported by the results of our analysis. It can be observed that teachers are not just rather mainstream, but furthermore that they tend to stress this neutrality. As such, our findings on secondary school teachers are clearly in line with the findings of Van de Werfhorst (2020) on professors in higher education. While we initially expected to find differences according to the specific topic, these differences were totally insignificant. This is an interesting finding, because we know that university students who are pursuing these different courses, in fact do have different value patterns (Bailey & Williams, 2016). Once they have entered the teaching profession, however, these differences are no longer present. This might be due to either a process of self-selection (as only specific profiles of students opt for a teaching career), or socialisation as a result of teaching experience. The main conclusion, however, remains that, at least in the Flemish region of Belgium, teachers tend to share the same professional culture, which is, with regard to political preferences, clearly mainstream.

PART IV: OPEN CLASSROOM CLIMATE

Chapter 8. Dialogue in the Classroom Within the Context of Citizenship Education. Taking Teachers' Self-Efficacy Beliefs and Characteristics Into Account[32]

Abstract

Research demonstrates the relevance of an open classroom climate in which discussions and dialogue are key for strengthening the civic competences of young people. However, opportunities for students for such discussions are relatively rare and we know little about factors at the teacher level determining what makes a teacher contribute to an open classroom climate including discussions and dialogue. Using data from an original teacher survey conducted in Flanders (Belgium), the present study investigates the role of secondary school teachers' self-efficacy beliefs, together with teacher characteristics including teaching subject, educational level, education track, gender and age. I distinguish between the frequency of dialogue on socio-political issues on the one hand and allowing different opinions in the classroom on the other hand. Results show that teachers who believe that they are competent in dealing with societal conflicts and tensions in the classroom, are more often engaged in dialogue with their students and are more willing to allow different student opinions in their classroom. Second, while there is no evidence for an association between background variables and allowing different opinions in the classroom, female and younger teachers teaching non-STEM related subjects will provide more space for dialogue in their classroom.

[32] This chapter is based on the following paper: Verachtert, S. (2023). Dialogue in the Classroom Within the Context of Citizenship Education. Taking Teachers' Self-Efficacy Beliefs and Characteristics Into Account. *Working paper.*

8.1 Introduction

We are currently faced with some global challenges and tensions, including the increase in migration. Likewise, low levels of civic and political participation and rising support for nondemocratic forms of governance are topics of concern, particularly among younger age groups (Foa & Mounk, 2016). These social and educational challenges require the need to rethink the role of citizenship education (Kennedy, 2019). In recent years, the development of citizenship of young people and the role of education became subject (again) of research and public debate of politicians and society at large (Biesta & Lawy, 2006; Geboers et al., 2013). The growing body of literature recognises the importance of citizenship education in education because it stimulates the development of democratic attitudes and helps to prepare students for their role as citizens in a democratic society (Torney-Purta, 2002). Most of the available research literature focuses on the predictors of citizenship competences of young people and classroom characteristics and characteristics of the school context (Coopmans et al., 2020). In this line of research, there seems to be a consensus on the power of an open classroom climate to enhance positive civic outcomes among youth (Avery et al., 2013; Geboers et al., 2013; Torney-Purta, 2002; Wanders et al., 2020) such as political and civic knowledge, political efficacy, tolerance, and intention to vote (Campbell, 2008; Godfrey & Grayman, 2014; Quintelier & Hooghe, 2013). In essence, an open classroom climate refers to a safe place where students feel free and are encouraged to express their opinions, even if their opinions differ from those of their classmates or teachers (Torney-Purta et al. 2001). In an open classroom climate, teachers provide students with room for discussion and dialogue about political and societal issues (Hess & Avery, 2008, Wanders et al., 2020). Large-scale international civic education studies conducted by the International Association for the Evaluation of Educational Achievement (IEA) have consistently demonstrated the effectiveness of an open classroom climate (Knowles et al., 2018). Despite the promising results of an open classroom climate, previous studies also suggest that there are limited opportunities for students to engage in dialogue in the classroom (Kahne et al., 2000; Siegel-Stechler, 2021) and that controversial issues in the classroom are rarely topic of discussion (Torney-Purta, 2002). Furthermore, we still know little about factors contributing to such an open classroom climate (Wanders et al., 2020). Since several years, in Flanders (the northern part of Belgium) like many other European countries, the curriculum states that citizenship education should occur across the different education tracks and courses, and thus not in one specific separate course taught by a subject teacher (Loobuyck, 2019; Willemse et al., 2015). This means that all teachers in Flanders are responsible to contribute to citizenship education.[33] Thus, providing opportunities for students to engage in an open classroom climate is something that every teacher should realise during their courses, regardless of what grade or subject they teach in secondary schools (Erlich & Gindi, 2019;

[33] The new attainment targets of Flemish secondary schools, which have been implemented in 2019, are developed in function of 16 key competences. Citizenship education is one of these competences and should be addressed as a cross-curricular theme. The objectives of the competences are minimum goals pupils have to achieve and should be pursued by several subjects or educational projects and activities.

Veugelers, 2007). However, in order to implement citizenship education across subjects in the curriculum, teachers need to be prepared (Nieuwelink & Oostdam, 2021). Despite an increasing body of research in citizenship education, empirical knowledge about the role of teachers in approaching citizenship is limited and it remains unclear to what extent teachers are motivated and prepared to take on this task.

Drawing on this debate, the aim of the current article is to add to the research of teachers in the domain of citizenship by including information about how teachers engage to an open classroom climate and more specifically, to look at the variables that predict teachers' contribution to encounter dialogue in the classroom. Although most of the available research on citizenship indicates that schools and teachers contribute significantly to enhancing their students' democratic skills and attitudes (Dijkstra et al., 2015), it is striking to note that relevant teacher characteristics are often missing in the discourse. Therefore, the present study elaborates on the factors at the teacher level that are associated with teachers' engagement in classroom dialogue. Two different indicators of dialogue are used i.e., the frequency of dialogue on socio-political issues in the classroom and whether the students are free to express their opinion in the classroom. More specifically, I assess the relation between teachers' beliefs (i.e. self-efficacy of dealing with societal conflicts and tensions in the classroom) and other individual (demographic) teacher characteristics such as the teachers' teaching subject, educational level, education track, gender and age. The aim is to answer these research questions within the context of Flanders where citizenship is implemented in the curriculum as a cross-curricular subject. The analysis in the study is based on the results of an original teacher survey, conducted between September 2020 and January 2021 among 830 secondary school teachers in Flanders. The major advantage of this original dataset is that it is representative and anonymous, which provides insights into practices of secondary school teachers in Flanders. In the first part, I briefly review the literature on citizenship education and the role of classroom discussions, controversy and teachers' beliefs. Subsequently, I present the data, methods and results. I close with a conclusion and reflect on whether these findings could be generalized towards other contexts and on the role of pre-service and in-service teacher trainings in the context of citizenship education.

8.2 Literature

Schools are considered to be important socializing agents during adolescence and in European policymaking, education is seen as one of the most efficient ways to foster democratic values and tolerant attitudes (Dewey, 1916; Sivenbring, 2019). In the research literature, the main goal of citizenship education is to prepare young people for their future role as active citizens in a democratic system and to simulate their civic engagement in society. Political and social engagement and participation can include voting, volunteering, or willingness to protest non-violently against injustice (Torney-Purta, 2004). However, it is argued that the related concepts of citizenship and citizenship

education are embedded in different social and cultural conditions and can be influenced by changes over time according to the current historical context (Veugelers, 2021).[34] As a consequence, the topic of citizenship education has been studied extensively by many researchers. A turning point in the research of civic education (Campbell, 2008) was the early work from Niemi and Junn (1998) indicating that citizenship education can increase the political knowledge of pupils. However, it is clear that young people not just need knowledge but also opportunities to participate and practice their civic roles. Following Wanders et al. (2020) "the students' relationships with others – both other students and their teachers – and the experiences students obtain in both spontaneous and organized teaching situations make the school a 'practice ground' for participating as citizens" (p. 267). A school is a place where students can engage in an open classroom climate and can learn the appropriate attitudes and skills (Hess, 2009). Similarly, Gibson and Levine (2003) argue that schools are small communities in which students learn to engage in social practices by interacting and arguing together. Furthermore, schools are the ideal location for students to deal with controversial topics (Parker, 2012). However, given that schools have an important role as 'communities of practice' (Torney-Purta et al., 2007), we know little about how schools and teachers exactly contribute to the promotion of citizenship competences of students (Amnå, 2012).

8.2.1 Classroom discussions and controversial issues

Citizenship education consists of diverse types of learning strategies such as classroom instruction, extra-curricular activities (Verba et al., 1995) or classroom discussions on political and social topics (Campbell, 2008). Classroom discussions are an essential part emphasized in the context of citizenship education (Schuitema et al., 2008, 2018) and exposes students to multiple perspectives where political and societal issues might be controversial (Hess & Avery, 2008). Getting critically involved in dialogue is part of citizenship education (Biesta, 2010). According to Hess (2009) and Parker (2003), discussions in the classrooms are the foundation of a working democracy and can contribute to political tolerance among students. Although it has been shown that classroom discussions facilitate the development of civic competences of secondary school students (Geboers et al., 2013, Schuitema et al., 2018), there is less consensus on the readiness of teachers to fulfil these expectations and engage in socio-political discussions. In practice, guiding a classroom discussion is a difficult and complex task which might be challenging for teachers (Parker & Hess, 2001). In the context of citizenship education, controversial issues in an open classroom climate is becoming an increasingly important topic (Hess, 2009). However, to date, some studies focusing on open classroom climate, one where teachers are responsible to establish a safe classroom where socio-political and controversial issues are openly discussed with

[34] In line with Willemse et al. (2015), the present study departs from a broad interpretation of citizenship. In their study, citizenship education is situated "as part of teachers' pedagogy connected to the tenet that teaching is a moral activity aimed at identity development" (Willemse et al., 2015, p. 119). In this way, "citizenship education is the responsibility of all teachers -and not just those who teach subject matter that can easily be related to citizenship, like civic or history-to meet the overarching purposes of education" (Willemse et al., 2015, p. 119).

respect for all opinions (Godfrey & Grayman, 2014) support the notion that teachers are not always prepared for teaching about controversial issues in the classroom. For instance, Oulton et al. (2004) suggested that teachers felt unprepared to discuss controversial topics in the classroom and argue that the success of the implementation of citizenship education will depend on the learning strategy on the one hand, and on how well teachers are prepared to teach about controversial issues on the other. Furthermore, the study of Oulton et al. (2004) shows that many teachers report receiving little or no instruction on how to facilitate discussions in their teacher education programs or professional activities. This is in line with other authors pointing out that teachers who receive very little training on teaching citizenship may feel less confident to discuss controversial issues (Liu et al., 2021). Erlich and Gindi (2019) compared civic and social studies teachers with teachers of other disciplines on handling controversial issues in the classroom and found that civic and social studies teachers scored higher on dealing with controversial issues. This is not surprising, given the fact that teachers' teaching in the humanities and social sciences lend itself more easily to discussions and dialogue compared to teachers of other disciplines. However, Moore (2012) shows that also many social studies teachers hesitate to discuss controversial topics. In the literature, it is argued that keeping controversial issues out of the classroom limits the opportunities for students to practice critical thinking, dialogue and active listening (Akar, 2012). Hence, in the context of citizenship education, it is important that all students should get the chance to talk about socio-political issues even if they differ from common beliefs and norms (Sivenbring, 2019).

8.2.2 The role of teachers' beliefs in citizenship education practices

Today, many countries expect their schools to contribute to prepare students for developing citizenship competences by implementing it as a compulsory school subject in the curriculum either as a single subject or as a cross-curricular theme (Eurydice, 2017). This latter requires that every secondary school teacher across the different disciplines is asked to include notions and practices of citizenship education in their teaching practices. However, despite the often compulsory character of citizenship education, research shows that teachers lack training to teach citizenship education (Willemse et al., 2008, 2015). As a consequence, teachers do not feel confident about teaching it or struggle with how to establish citizenship education practices (Akar, 2012; Chin & Barber, 2010; Oulton et al., 2004). Furthermore, scholars provide evidence that teachers are in some cases not aware of the compulsory task which is a rising concern given the great autonomy of educational institutions in citizenship education (Willemse et al., 2015, p. 118). Given the very little research carried out on this topic, we should investigate how teachers across the different disciplines implement civic practices in their classrooms (Castro, 2013). Although some studies already established the role of teachers' in citizenship practices, few studies have demonstrated direct connections between factors at the teacher level and teachers' citizenship practices. However, some studies have shown that it is necessary to consider teachers' beliefs in citizenship education practices. The study of Chin & Barber (2010) for instance looked at the

correlations between teacher-level measures and teachers' self-efficacy and found that teachers' self-efficacy determines what and how they teach which in turn influence their citizenship practices in the classroom. Also Alviar-Martin et al. (2008) examined teachers' confidence in teaching about a variety of socio-political topics including social cohesion and diversity. Overall, their study shows that a lot of teachers feel unprepared to teach these topics. Moreover, they found that teachers feel more confident in teaching citizenship education when it is implemented as a distinct school subject. More recently, Reichert et al. (2018) found that students that report high perceptions of a democratic and open classroom climate were associated with female teachers who are confident in using different teaching methods. However, scholar argue that more research is needed to show how teachers citizenship beliefs are reflected into classroom practices (Chin & Barber, 2010; Knowles & Castro, 2019; Reichert & Torney-Purta, 2019). The current study contributes to filling this gap by using an original teacher survey where dialogue in the classroom is measured by taking into account teachers' perceptions which adds a unique value to the literature discourse. I look for teachers' characteristics which are associated with engaging in classroom dialogue. While self-efficacy beliefs serve as the main independent variable in the analysis, also other teacher characteristics such as teaching subject, educational level, education track, gender and age are included as variables.

8.3 Data and Methods

8.3.1 Data

To investigate the relation between dialogue and the teachers' self-efficacy beliefs and characteristics, data from the first wave of the "No Cap" questionnaire is used. This original survey study, conducted between September 2020 and January 2021, includes a questionnaire representative of the secondary school teacher population of Flanders, one of the main regions of Belgium. The purpose of this study was to measure the evaluation of the No Cap project; a project focusing on polarisation and radicalisation in the classroom. The new survey developed for the project included information on radicalisation, polarisation, social media, political attitudes, teaching activities and includes questions related to the individual, class- and school-level. We received a randomly selected sample of 1933 secondary school teachers from the Department of Education of the Flemish government in Flanders, including the teachers' names and home address. The teachers received an invitation with a questionnaire by surface mail at their home address. They could choose voluntary between completing the survey on paper or online. An additional letter explained the purpose of the study and the survey and included a unique anonymous code. Participation was voluntary and took 30 minutes on average. After two reminders, 43.51% of the respondents returned the questionnaire. In the analyses of this study, only teachers working directly with young people (e.g., class teachers, student counsellors, supervisors) were included. This means that teachers who are retired, people employed in an administrative function, respondents who filled in the survey twice or respondents wo only filled in a few questions, were deleted

from the analysis. The final sample included 830 teachers and can be considered as representative for the school type (i.e., public and private schools)[35], education track (i.e., general, technical and vocational track), teaching subjects, province, gender and age. 551 (66.55%) women, 277 (33.45%) men and two participants who did not fill in their gender. The age of the respondents ranges from 22 to 67 (mean age = 43.62, standard deviation = 10.53). The gender representation is similar to the teacher population in Flanders (63% women, Vlaamse Overheid). Teachers were predominantly from the white middle-class; the largest majority of the teachers (97.68%) was born in Belgium and speak Dutch at home (97.17%). With regard to the highest educational level, more than half of the teachers has a bachelor degree (54.28%) while another considerable part (38.02%) attained a master degree. The other 7.70% of the teachers attained a short-cycle higher education degree (or lower). When looking at the education track in which the teacher works, the majority of the teachers, 57.95% responded they are working in the technical, vocational and/or the artistic education. The other 42.05% of the teachers teach in the general education. Furthermore, 25.30% of the teachers were trained in STEM subjects (including biology, sciences, geography, chemistry, physics, computer science, economics, and mathematics) while the other teachers were trained in social science subjects (including social science, religion and history), languages, vocational and practical subjects and other subjects (including physical training, philosophy, music, arts, and psychology).

8.3.2 Variables

Dependent variables

For the purpose of this study, the notion of 'dialogue in the classroom' was operationalized in two different ways. For the first outcome variable respondents were asked about the frequency of dialogue in their classroom concerning different socio-political issues. Four items were analysed and they were strongly correlated (Cronbach's Alpha=0.863). The first item asked the respondents to report on "how often you conduct dialogue with the pupils from your class on migration and ethnic-cultural diversity". The second item was measured through the question: "how often you conduct dialogue with the pupils from your class on ideological diversity". Next, teachers were asked "how often you conduct dialogue with the pupils from your class on homosexuality". Lastly, respondents were asked "how often you conduct dialogue with the pupils from your class on gender and sexism." Given the high reliability (e.g. internal consistency) of these four items, we can assume that the scale is measuring the same underlying construct and could thus be combined into a sum scale. The different items were used to form the variable 'frequency of dialogue on socio-political issues in the classroom'. For each statement, teachers could indicate to which level the answer applied to their situation on a 4-point scale; 1='never' to

[35] There are three different types of education in Flanders: community schools, subsidized public schools and subsidized private schools which are mostly Catholic schools.

4=’very often’. A higher score indicates a higher frequency of dialogue in the classroom. The frequencies for these items are presented in Appendix B.

In addition, we asked the respondents “whether students were allowed to give different opinions in the classroom, even if they were extreme or radical”. The teachers were asked to respond on a 5-point scale; from 1=”fully agree’, 2=’rather agree’, 3=’agree nor disagree’, 4=’rather disagree’ to 5=’fully disagree’. The item ‘different opinions in the classroom’ was reversed so that a higher score indicates a more open classroom climate. The exact wording can be found in Appendix A. The frequencies for this item are presented in Appendix C.

Independent variables

The first independent variable is ‘self-efficacy beliefs in dealing with societal conflicts and tensions in the classroom’ which refers to teachers’ perception of whether they belief if they have the competences to perform the action, i.e. dealing with societal issues in their classroom. Thus, the item measures self-estimated diversity competences of the teachers. Seven newly created items were analysed and are strongly correlated (Cronbach’s Alpha = 0.914). Given the high reliability (e.g. internal consistency) of these items, we can assume that the scale is measuring the same underlying construct. The different items were used to form the variable ‘self-efficacy beliefs in dealing with societal conflicts and tensions’ including for example religious diversity, homophobia or racism. The teachers were asked to respond on a 4-point scale; 1=’very competent’ to 4=’totally not competent’. I construct the variable by reversing the items and adding up the answers to the different items, and dividing by six. A higher score indicate a higher frequency or greater applicability. The exact wording of the question can be found in Appendix A. The other teacher characteristics included in the analysis are subject matter, educational level, education track, gender and age. First, we asked the teachers in which school subject they mainly teach. I recoded this variable in STEM-related courses and non-STEM subjects. I also control for the education level of the respondents (the highest level of education) which was measured with a five-point scale; lower secondary, higher secondary, short-cycle tertiary education, bachelor’s degree and masters’ degree or higher. I recoded education level into a two-level variable: bachelor’s degree or lower and master’s degree or higher (see Appendix A for items). Finally, I control for the education track in which the teacher is teaching. I asked the respondents in our study in which education track they teach. They could indicate general education, technical education, vocational education, artistic education or another education track. I recoded this variable into 1 = general education and 0 = all other education tracks.[36] Gender was dummy coded as 0=female and 1=male. As both age and teaching experience were highly

[36] In Flanders, general education is theory-oriented and prepares for higher education or university. Technical education is less theoretical but still provides a general education and combines theory with practice. Artistic education develops artistic skills. Vocational/professional education prepares for a specific job (Meeusen et al., 2013).

correlated (= 0.786), age was used as a proxy for years of experience. Teachers were asked about their age at the moment of answering the questionnaire and is measured in years as a continuous variable.

8.3.3 Methods

The data analyses are based on an analysis of descriptive statistics and on linear regressions. The methodology on the two dependent variables. Since the dependent variables are continuous scales, I use multivariate linear regressions (OLS) in the models. The first dependent variable measures the frequency of socio-political discussions in the classroom. The second variable focuses on allowing different opinions in the classroom.

First, to test the relationship between dialogue in the classroom and teachers' self-efficacy beliefs and teacher characteristics[37], regression analysis was carried out with only teacher characteristics in a in Model I, followed with the self-efficacy beliefs included in the second model. The results of this analysis are presented in Tables 8.2 and 8.3. The changes in R^2 across the different models show that self-efficacy beliefs is a consistent predictor of the engagement of dialogue of. In both approaches, self-efficacy beliefs demonstrated a positive and statistically significant relationship with an open classroom climate.

8.4 Results

8.4.1 Descriptive statistics

Table 8.1 offers an overview of the descriptive statistics of the continuous variables that are included in the analyses and shows the extent to which teachers hold discussions in the classroom, whether they allow different opinions in the classroom and gives information about their self-efficacy beliefs with regard to dealing with societal conflicts and tensions in the classroom. With regard to the dependent variables, the frequency of dialogue on socio-political issues in the classroom was largely in the middle of the scale and rather low (1.96 on a scale from 1 to 4, see Table 8.1). Teachers make more room for dialogue on gender and sexism issues (2.06) compared to ideological diversity issues (1.86). In contrast, secondary school teachers appeared to be generally positive about allowing every student opinion in the classroom (3.56 on a scale from 1 to 5). When we look at self-efficacy beliefs, teachers feel generally competent in dealing with societal conflicts and tensions in the classroom. The results show that teachers feel more competent in dealing with topics with regard to LGBT (3.16 on a scale from 1 to 4), homophobia (M=3.03) and sexism (M=3.04) compared to islamophobia (M=2.58).

[37] Only the most important (demographic) background factors of teachers were used in the analyses in order to minimize multicollinearity.

Table 8.1. Descriptive statistics (means and standard deviations) of the variables in the analyses

Variables	Mean	Std. Dev.	Minimum	Maximum
Frequency of socio-political issues in the classroom (1=never; 4=very often)	1.958	.593	1	4
°migration and ethnic-cultural diversity	2.013	.706	1	4
°Ideological diversity	1.856	.768	1	4
°Homosexuality	1.908	.658	1	4
°Gender, sexism	2.059	.682	1	4
Every opinion in the classroom can be expressed (1=fully disagree; 5=fully agree)	3.560	1.036	1	5
Self-efficacy beliefs (1=not competent at all; 4= very competent)	2.888	.576	1	4
°Religious diversity	2.940	.706	1	4
°Islamophobia	2.578	.766	1	4
°Antisemitism	2.565	.775	1	4
°Ethnic cultural diversity	2.931	.706	1	4
°Homophobia	3.027	.676	1	4
°LGBT	3.156	.669	1	4
°Sexism	3.041	.650	1	4

8.4.2 Linear regressions

This part presents the results of the empirical analysis of this article, in which the factors at the teacher level are tested. The results are divided in two different parts. First, I focus on the effects on the first dependent variable, frequency of dialogue on socio-political issues in the classroom (Table 8.2) after which I present the analysis of the second dependent variable, allowing different opinions in the classroom (Table 8.3). I also estimated the variance inflation factor (VIF) in order to test for potential multicollinearity problems. However, the VIF for both variables remained below 5.0 (VIF=1.05).

Model 1 of Table 8.2 shows that the included variables; teaching subject, educational level, education track, gender and age account for 7% of the variance in conducting classroom discussions. Of these variables, teaching STEM related subjects, educational level, gender and age are statistically significant determinants of an open classroom climate. Educational level, gender and age are significant at the 0.05 level. Model II adds the variable of self-efficacy beliefs in dealing with societal conflicts and tensions, which increases the explained variance. The addition of the variable in Model 2 adds significant predictive power to the regression equation, and increases the R^2 from 0.071 to 0.278. However, by adding this new variable, some variables lost their independent explanatory power. For example, the variable educational level of the teacher is not significant anymore. As Table 8.2 illustrates in Model II, self-efficacy beliefs explain the most. Furthermore, the results demonstrate that being a male teacher correlated negatively with contributing to discussions. Considering the age variable, younger teachers are more likely to contribute to classroom discussions. While the addition of the self-efficacy variable weakens the effect of the variables, they remains statistically significant. Table 8.3 contains the results of a regression analysis using the same independent variables as in Table 8.2 but a different dependent variable labelled “allowing different opinions in the classroom”.

In model I, we can see that the independent variables have no significant impact on classroom climate. In model II we add the variable of self-efficacy beliefs. It can be observed that the effect of self-efficacy beliefs is again significant and positive, controlling for the other variables. The explained variance of model II increases to 3%. Finally as Table 8.3 shows, in regards to the other teacher characteristics, the teaching subject, gender and age do not have a significant impact and are not associated with the level of an open classroom climate. Furthermore, interaction terms were added in the third model to test the varying effects of self-efficacy beliefs. None of these interaction terms were statistically significant, indicating that the strength of the association between 'dialogue in the classroom' and self-efficacy beliefs do not vary by teaching subject, gender and age. Overall, the results of the analysis demonstrate that it is meaningful to study teacher characteristics in the context of citizenship education and especially when we look at the teachers' contribution to discussions in the classroom.[38]

[38] There also appears to be an relationship between the degree of ethnic diversity in a classroom and the teacher's willingness and the frequency to discuss controversial discussions in the classroom (Campbell, 2007). Therefore, I also controlled for a possible effect of immigrants in the school. The teacher asked about the ethnic composition of their school (percentage of students with an immigrant background, M=28.57 ranging from 0 to 100% of students with a migration background). However, this effect was not significant.

Table 8.2. Multivariate regression explaining dialogue in the classroom

	Model I Dialogue in the classroom	Model II Dialogue in the classroom	Model III Dialogue in the classroom
Self-efficacy beliefs		0.475***	0.469***
		(0.032)	(0.136)
Subject: STEM (ref.)			
STEM	-0.291***	-0.244***	-0.016
	(0.048)	(0.043)	(0.216)
Education: other education (ref.)			
Educationlevel: Community college	0.098	0.044	0.044
	(0.082)	(0.073)	(0.073)
Educationlevel: University	0.167	0.098	0.098
	(0.085)*	(0.075)	(0.076)
Educationtrack: all other forms (ref.)			
Educationtrack: General	-0.021	-0.006	-0.005
	(0.043)	(0.038)	(0.039)
Gender (ref. female)	-0.113**	-0.094**	-0.065
	(0.045)	(0.041)	(0.203)
Age	-0.005*	-0.005***	-0.007
	(0.002)	(0.002)	(0.009)
Self-efficacy beliefs x Gender			-0.010
			(0.069)
Self-efficacy beliefs x Age			0.001
			(0.003)
Self-efficacy beliefs x STEM			-0.080
			(0.074)
Constant	2.194***	0.851***	0.865*
	(.123)	(0.142)	(0.411)
Observations	769	769	769
R-squared	0.072	0.278	0.780

Notes. *** p<0.001, ** p<0.05, * p<0.01. Entries are unstandardized OLS coefficients with standard errors between brackets.

Table 8.3. Multivariate regression explaining different opinions in the classroom

	Model I Different opinions in the classroom	Model II Different opinions in the classroom	Model III Different opinions in the classroom
Self-efficacy beliefs		0.260***	-0.134
		(0.064)	(.271)
Subject: STEM (ref.)	-0.083	-0.058	-0.091
	(0.086)	(0.086)	(.433)
Education: other education (ref.)			
Educationlevel: Community college	0.062	0.032	0.014
	(0.148)	(0.147)	(0.147)
Educationlevel: University	0.255	0.216	0.202
	(0.153)	(0.152)	(0.152)
Educationtrack: all other forms (ref.)			
Educationtrack: General	-0.015	-0.007	-0.013
	(0.078)	(0.077)	(0.778)
Gender (ref.=female)	0.036	0.045	-0.311
	(0.081)	(0.081)	(0.405)
Age	-0.001	-0.001	-0.024
	(0.004)	(0.004)	(0.018)
Self-efficacy beliefs x Gender			0.123
			(0.137)
Self-efficacy beliefs x Age			0.008
			(0.006)
Self-efficacy beliefs x STEM			0.101
			(0.148)
Constant	3.525***	2.790***	3.954***
	(0.222)	(0.285)	(0.821)
Observations	777	777	777
R-squared	0.010	0.030	0.034

Note: *** p<0.001, ** p<0.05, * p<0.01. Entries are unstandardized OLS coefficients with standard errors between brackets.

8.5 Discussion

Given the widespread importance and its obligatory part in the curriculum in secondary schools in most democratic countries (Veugelers, 2021), it is important to understand how teachers aim at dealing with citizenship practices in the classroom. Empirical evidence has demonstrated repeatedly that an open and democratic classroom climate in which discussion and dialogue take place, is an important type of a learning strategy contributing to civic outcomes of young people. Consequently, teachers should incorporate dialogue and discussion of current and controversial issues into their teaching (Siegel-Stechler, 2021). However, opportunities for students for such discussions are relatively rare and we know little about factors at the teacher level determining what makes a teacher contribute to dialogue in the classroom. Therefore, it is highly relevant to determine the factors at the teacher level explaining teachers' contribution to citizenship education practices. In the current study, I use the frequency of dialogue in the classroom and allowing different opinions of students in the classroom to assess dialogue as teachers' citizenship practices. First, in line with other studies (Kahne et al., 2000; Siegel-Stechler, 2021), the teachers in the current study show rather limited opportunities for students to engage in dialogue in the classroom. Second, the descriptive results suggest a positive direction in the fact that teachers appeared to be generally positive about allowing every student opinion in the classroom. Furthermore, the results from the present study offer some evidence that there is indeed a strong positive association between teachers' self-efficacy beliefs and the two indicators of dialogue. Teachers believing in their own competences in dealing with societal conflicts and tensions in the classroom are also more likely to contribute to classroom dialogue. Likewise, they are more willing to allow different opinions in their classrooms. Next, I found that some of the background characteristics at the teacher level are important to contribute dialogue in the classroom. However, it has to be noted that the effect of the background characteristics at the teacher level does remain rather limited and is only important in explaining the contribution to the frequency of dialogue. The strongest effect I found relates to the teaching subject. Not surprisingly, teachers from non-STEM related subjects are more likely to have dialogue in the classroom. Although the effect of gender and age was not overwhelming, it was clearly present and significant. Female and younger teachers contribute more often to classroom dialogue. A possible explanation for age might be that in the current teacher trainings, (younger) teachers are more provided and prepared for dealing with political and sensitive issues and as a result, feel more confident and prepared to teach these issues. The effect of gender cannot be easily explained and needs further research. To conclude, the results suggest that differences in teacher characteristics are important to assess and should not be neglected by educational researchers in the context of citizenship. As a consequence, it seems necessary to emphasize teachers' differences in the capabilities and responsibilities of teaching citizenship and their consequences on students' civic and political learning (Liu et al., 2021). Hence, the variability at the teacher level should be examined more closely in the future. If we want to understand more deeply how students learn from an open classroom climate, we

need to know why certain teachers are more likely to implement dialogue and discussions and therefore their children benefit more than others from citizenship practices. Furthermore, it may be interesting for future research to focus on the structural barriers teachers are often confronted with and can affect classroom practices (in)directly (f. ex. the time for teaching and the possibility to allow classroom discussions, whether teachers received training in civic education, whether civic education is compulsory, …).

Although the relevance and the benefits of this study in the field of citizenship education, I acknowledge some limitations. A first potential limitation to the current study is that I have obtained all the information on self-perceptions from a teacher sample. We could expect the levels of perceptual accuracy to be different among students. Moreover, due to self-direct bias, teachers might overestimate their own teaching competences and practices. Hence, stronger relations might be found when we also had student data. Furthermore, the data remained limited to the Flemish context. Therefore, the findings cannot be generalized directly toward other countries and contexts. However, there is no clear reason to suppose that the Flemish context is very different compared to other countries in the Western Europe where citizenship is implemented as a cross-sectional theme in the curriculum. Third, due to the cross-sectional design of this study, no direct conclusions with regard to causality can be made. Fourth, I only have individual-level determinants and the data does not include contextual or school determinants. Lastly, I only measured the frequency of dialogue in the classroom but not the duration. As a result, we do not know how long the discussions are. Furthermore, we do not know whether there is room for students' input and reflections during the dialogue. To investigate the openness of the classroom climate and to capture the content of the dialogue itself, future research can focus on classroom observations.

In Belgium and more specifically Flanders, teachers from all subject areas are responsible and should participate in the process of citizenship education. The (descriptive) results however, show that not all teachers feel competent to deal with societal conflicts and tensions and that we need to foster teachers' citizenship education professionalism. Currently, there is no single approach to citizenship education across countries (Kennedy, 2019). However, whether citizenship education must be integrated across all subjects, taught through other subjects such as history, geography or social studies or if it should take the form of a separate, single subject in the curriculum, remains a matter for further discussion and research. It is clear that more efforts are needed to strengthen teachers' competences in teaching citizenship (Euridyce, 2012, p. 15). This might be particular important in countries where citizenship is implemented as a cross-curriculum theme and thus integrated in other subjects, taught by all teachers and leaving it largely to the schools themselves to implement it. Schools in Belgium for instance have a high autonomy in the decision on how to implement citizenship in the curricula. This increases the need for schools and teachers to become aware of their existing citizenship practices, roles and responsibilities (Willemse et al., 2015). It is important however, more than ever before because of the often compulsory aspect, that this theme and its effect on the citizenship practices of teachers, should

receive more attention among educators in teacher trainings and future research. It is necessary that teachers from pre-service and in-service teacher training programs should learn how to conduct socio-political discussions as part of their professional role (Erlich & Gindi, 2019) across all disciplines. Furthermore, we should realize that teaching citizenship is not only the responsibility of schools and teachers but that also parents, families, peers and the media plays a role in practicing and transmitting citizenship competences to young people (Geboers et al., 2013; Moore, 2012).

In this final chapter I aim to reflect upon the key findings presented in the previous chapters of the dissertation. The structure of this concluding chapter is as follows. First, I discuss three main theoretical contributions and place the findings into the broader perspective of the literature. I also discuss some implications for policymakers and educators. I further identify some of the limitations inherent to this dissertation. Lastly, the chapter concludes by indicating some possible future research directions.

Chapter 9. Conclusion

As described in greater detail in the first chapter, more research is needed in the field of political science to more fully understand the complexity of the political development of adolescents and the role played by different socialisation agents in order to empower youth civic engagement (Flanagan, 2013). The aim of this dissertation has therefore been to contribute to the ongoing debates about the development of adolescents' civic engagement by investigating the role of parents and schools in the context of the traditional political socialisation theory. This dissertation set out to shed new lights on these debates starting from the argument that the influence from various contextual settings and the political attitudes of the socialisation agents are important to take into account. More specifically, I looked at how these attitudes can manifest and empower adolescents to be active and engaged citizens, which is essential for a more democratic society.

The different empirical studies included in this dissertation were systematically guided by *four main research goals*. **First**, as an introduction to the empirical chapters, I wanted to analyse relevant individual and contextual determinants of environmental attitudes and behaviour among citizens. **Second**, I wanted to gather insights among young adolescents into the development of civic engagement relating to sustainable development and looked at the potential impact of parents and schools as socialising agents. **Third**, I wanted to explore how teachers' political attitudes are manifested, which, in turn, might affect the students themselves. **Lastly**, I wanted to provide new insights into teachers' practices of citizenship and look at how teachers engage to an open classroom climate in the context of citizenship education. The findings and conclusions of the empirical chapters are part of the answer to the different research questions in this dissertation. At the same time, they are the starting point of potential future research in the field of both political and educational science research. The different studies make an important contribution on their own to the research topics of the broader development of political attitudes and behaviour, attitudinal changes, socialisation research, and civic education. The empirical chapters included in this dissertation make different contributions to the literature on the development of the broader political attitudes and behaviour and several assumptions can be made based on the theoretical and empirical findings. However, combining their findings into a general discussion across the different studies, creates an added value that is needed to formulate a broader answer to the question on the development of adolescents' political attitudes and behaviour. How do parents, schools, and teachers relate to adolescents' civic engagement? Reflecting on the different empirical chapters, there are three main theoretical contributions across this dissertation. **First**, I broaden the scope of the theories on political socialisation by looking at the role of parents and schools. **Second**, I elaborate on the field of citizenship education by focusing on the teachers as an important role model and investigate their political attitudes and preferences which are often missing in the literature. **Third,** I look at how

teachers contribute to citizenship education practices itself. The three major contributions of this dissertation can be placed in the broader theoretical framework of socialisation as elaborated on earlier in this dissertation.

9.1 Adolescents' sustainability attitudes and behaviours and the role of parents and schools as socialisation agents

Scholars of political socialisation emphasize the role of parents in the socialisation process of children, and argue that children and parents have similar political attitudes and behaviour suggesting that parents are important for youth's political developmental influence. Previous political socialisation studies have in particular focused on parent-child similarity and intergenerational transmission of traditional modes of civic engagement such as political identification, ideological orientation, political engagement, intergroup attitudes, and cultural orientations. In this dissertation, I answered the call of some scholars (Amnå et al., 2009), and broadened the narrow scope of the existing socialisation discourse by looking at other and more various dimensions of citizenship engagement in the context of the global era. More specifically, this dissertation revealed new insights into how political attitudes and behaviour of adolescents develop and how they differ from those of adults by focusing on the broader sustainability context including attitudes and behaviour with regard to environmental, social, and economy dimensions. As shown in Chapter 4, and in line with the existing literature investigating similarities between parent and child attitudes and behaviour, I observed attitudinal and behavioural parent-child congruence towards sustainable development. Despite the fact that I did not observe very strong parent-child similarities, especially when comparing to other studies measuring parental transmission of political attitudes (Jennings et al., 2009; Rodriguez-Garcia & Wagner, 2009), the results make clear that parents and their children are to some extent similar in their sustainability orientation. It should be noted, however, that no causal statements can be made about the direction of the transmission effects. Therefore, rather than interpreting correlations as indicators of parental transmission, studies should assess the process longitudinally (Miklikowska, 2016, p. 110). Based on the findings of this dissertation, it can be concluded that children do not just copy the attitudes and behaviour of their parents and young people should be seen as active participants in their own civic development regarding sustainability competences. Next, in line with previous environmental research (Corner et al., 2015; Holden, 2006; Nikolayenko, 2011), as investigated in Chapter 4, the results of this dissertation suggest that children's levels of attitudes towards sustainability are significantly higher compared to those of the older generation (i.e., their parents). This stands in contrast to behaviour, however, where parents score higher compared to their children. The latter finding points to a confirmation of findings from earlier studies claiming that young people's engagement is not more pro-environmental than those of the older generations (Bell et al., 2016; Gifford & Comeau, 2011; Grønhøj & Thøgersen, 2009; Mead et al., 2012; Meneses & Palacio, 2005; Wray-Lake, Flanagan, & Osgood, 2010). However, this view needs to be supported by more recent studies focusing specifically on adolescents' environmental and sustainability

behaviour to confirm the results. Furthermore, although data from 10 to 14 years old adolescents provide us with relevant information about this age group of civic engagement, the results from this dissertation should be interpreted with caution. Given this relatively young age, we should keep in mind that adolescents do not always have the opportunities and resources (e.g., time or money) or might not always be in a position to engage in the variety of sustainability actions as being questioned in the surveys of the VALIES case study. Some authors therefore argue that those who conduct research on youth, the focus should be more on intentions to act (Schulz et al., 2018). Indeed, behavioural intentions are generally reliable predictors for action (Eckstein et al., 2013). Furthermore, based on the theory of social learning as discussed in the first chapter, communication and discussions as socialising mechanisms might be responsible for parent-child similarity. The results presented in the current dissertation indicate that more attitudinal parent-child similarity seems to be determined by the frequency of intrafamily discussions regarding sustainability issues, although the latter is not supported for behavioural congruence. In summary, it can be stated that although parent-child similarity is less pronounced in the context of sustainable development it does still rely on socialisation mechanisms such as intrafamily discussions.

Based on the theory and the findings, some recommendations can be made for research. First, the results of this dissertation indicate that although the important role of parents, we should not overestimate intergenerational transmission and parental impact in shaping adolescents' political development. Indeed, the strength of parent-child congruence as evidence of family transmission (Hatemi & Ojeda, 2020) in political attitudes and behaviour tends to vary between studies (Degner & Dalege, 2013; Jennings et al., 2009; Zuckerman et al., 2007). In line with the study of Meeusen & Boonen (2020), the results of this dissertation suggest that it is likely that household patterns have changed over time and that there are differences in family composition and lifestyle and that families now function differently than some decades ago. Indeed, adolescents today are 'socialised under quite different historical and familiar circumstances' (Jennings et al., 2009, p. 783). Furthermore, we should take into account the dynamics with other socialising agents over varying contexts (Bougher, 2018). We can indeed assume that the opportunities of other agents such as social media have increased by the currently fast socio-technical changes - phenomena over which the family has relatively no or little control. Furthermore, as previous literature has shown (Meeusen & Boonen, 2020), the magnitude of the parent-child similarity likely depend on the attitudes and behaviour of interest. In line with political socialisation literature (Neundorf & Smets, 2017) and social learning theory (Bandura, 1977, 1986), talking about and the relevance and salience of the political topic within the family might have a positive effect on a successful transmission (Jennings et al., 2009). It is indeed argued that more important and central attitudes and behaviour within the family are more visible and might be more easily transformed by children (Meeusen & Boonen, 2020). Furthermore, attitudes and behaviours are more likely to be similar when it concerns relevance for parents and children and when the parents show higher level of

an authoritative parenting style (Pinquart & Silbereisen, 2004). The rather high level of positive attitudes and behaviour of both parents and children as investigated in Chapter 4 contradicts the theoretical assumption of salience. Hence, it is clear that these results require greater attention and that we need more future research within the family, both comparative and longitudinal and within other contexts such as sustainable development among different ages should be taken into account, that could confirm the results of this dissertation. Furthermore, it seems important to revive and broaden the field of the child's influence on the parents and find out whether there is the possibility of reciprocal or trickle-up influence as argued by other scholars (McDevitt & Chaffee, 2002), under which conditions children might influence their parents and whether this influence depends on the type of the attitudes and behaviour studied.

There is consensus both in the literature and among policymakers that the current changing society including the pursuit of sustainability, challenges educational systems to socialise students into civic engagement. As a result, we have seen an emergence in the implementation of various education fur sustainable development (ESD) programs in recent years. However, related empirical based school effectiveness research is still scarce and the question in research remains whether these programs have an impact on the development of students' attitudes and behaviours (Kelly & Clarke, 2016). Chapter 5 was a contribution to this research and wanted to look at how an ESD intervention with a specific pedagogical approach aimed at teachers could foster students' ESD competences. The results of the dissertation contribute to new and valuable information about the effectiveness of an intervention in the field of ESD and show that the implementation of an ESD program positively contributed to youths' enhancement of sustainability competences. With other words, adolescents' knowledge, attitudes, and behaviour with regard to sustainable development uniting environmental, economic, and social issues can be empowered by the implementation of an ESD program. Hence, school might play the role of a socialisation agent in the development of ESD competences among adolescents. In line with the results, two interpretations can be made here. First, unlike attitudes and behaviour, gender and age as socio-demographics are in most cases not the main focus of environmental studies, but are almost always included as background variables. Although there are some researchers who have not found differences between men and women, there seems to be a growing scientific consensus with women showing more positive environmental attitudes and behaviour than man (Torkar & Bogner, 2019; Xiao & McCright, 2015). The findings of this dissertation provide further support for this consensus. In Chapter 2 indeed, it was shown that men and women in European countries seem to be socialised in different ways, confirm to gender stereotypes which lead to different attitudes and behaviour with regard to environmental issues. A widely used approach to explain gender differences in environmental studies is the gender socialisation theory, where individuals are shaped by gender expectations within the context of cultural norms (Zelezny et al., 2000). Women are socialised to have a motherhood mentality or a stronger ethic of care, which would extend traditional child- and caretaking expectations to a higher

concern about the environment (Hunter, Hatch, & Johnson 2004). Males on the other hand are socialised to be more independent and competitive (Eagly, 1987). This dissertation, however, further extended the existing environmental education studies. More specifically, the results have shown evidence that the gender gap which has already been illustrated for environmental attitudes and behaviour among adolescents and children (Boeve-de Pauw, Jacobs, & Van Petegem, 2014) is also reflected in the related but broader context of sustainability education studies. The findings in this dissertation clearly showed that girls score higher on knowledge, attitudes, and behaviour alike with regard to sustainable development issues. Thus, we could argue that the argumentation of gender roles and socialisation as described above still seems to hold today, even among young adolescents. Second, in line with previous environmental (Liefländer & Bogner, 2014; Baierl, Kaiser, & Bogner, 2022) and sustainability studies (Olsson & Gericke, 2016; Olsson et al., 2019), the research in this dissertation highlights the age gap as well. The results showed that different age groups responded differently to the ESD intervention. More specifically, the results showed that pupils in the last grade of primary schools (10-12 years old) showed higher levels of sustainable knowledge, attitudes, and behaviour compared to secondary school pupils (12-14 years old). It can therefore be concluded that the findings of this dissertation support the existence of the phenomenon of the 'adolescent dip' as demonstrated by Olsson and his colleagues (2016, 2019). Although the reason for the age gap in environmental and sustainability research is not entirely clear, it has sometimes been explained with the argument of the Reasonable Person Model by Kaplan and Kaplan (2002) stating that adolescents readily explore new areas and have therefore less consideration for others compared to their younger and older peers. Furthermore, in the context of the environmental dimension of sustainability, it has been argued (Liefländer & Bogner, 2014) that older students might be less connected to nature compared to the younger students due to puberty effects and the accompanying psychological development of this particular age group (e.g. rebellion, Eisenberg & Morris, 2004).

The growing popularity of ESD is supported by the inclusion in the Sustainable Development Goals (SDG, goal 4.7) in the Agenda 2030. Furthermore, United Nations policy initiatives like the UN Decade of ESD (2005-2014) or UNESCO's 'Global Action Programme (GAP) on education for sustainable development' are set up in order to enhance and accelerate ESD practices in all levels and areas of education (Van Poeck, König, & Wals, 2018). In line with this, educational research increasingly pays attention to the impact and effectiveness of educational practices on increasing learners' capacities to contribute to sustainability. Among scholars, it is argued that recommendations and policy decisions within ESD should be based on empirical research. In line with this argument and based on the findings of the ESD intervention of the present dissertation, some recommendations for ESD policy and education practices could be formulated. First, the findings make clear that ESD positively affect students' attitudes and behaviour that promote sustainable development and that policymakers can use it as means for fostering sustainability among adolescents. Nevertheless, research has shown that it is

difficult for teachers to implement ESD into educational practices (Boeve-de Pauw et al., 2015; Olsson et al., 2022). The intervention here was a contribution to responding to the needs of teachers indicating that they need more concrete ESD teacher materials and information and knowledge on how to implement ESD in practice (Waltner et al., 2020). The results in this dissertation seem to indicate that schools indeed can stimulate students' sustainability competences when teachers are supported with professional development courses and experience examples of 'good practices' tied to curriculum during a longer period of time (i.e. one school year). Therefore, it seems necessary to integrate ESD into teacher education and training programmes for in-service teachers to promote students' ESD competences and implement practices in the classroom. Furthermore, to develop teachers' ESD competences themselves, it is necessary to continue investigating what kind of support teachers need and want. Furthermore, the research findings indicate that the impact of participation in the ESD program did not enhance sustainability attitudes and behaviour between girls and boys or between younger and older students differently. This is an important finding because although ESD as a socialisation mechanism contributes to children's' sustainable development it seems to be unable to narrow the gender gap among adolescents by employing an appropriate learning strategy as sometimes argued by other authors (Casimir & Dutilh, 2003). Policymakers and educators should therefore consider the different social groups students belong to (i.e. boys and girls, primary and secondary school children) as important targets when designing and implementing future school programs related to sustainable development. This need is in line with what other authors call the 'age-adapted transformation of ESD teaching and learning' (Olsson et al., 2019, p. 192). The particular age gap or 'adolescent dip' as referred to by previous scholars, 'may indicate the lack current age-appropriate ESD strategies for older students. It would be highly beneficial to identify what a more effective ESD program may look like for this particular age category' (Činčera, Kroufek, & Bogner, 2022, p 13). Furthermore, ESD programs in schools should take into account the possible influence from the family context in order to have higher chances of success. Hence, educators should design strategies that involve school and home simultaneously.

To summarise, concerning the civic engagement of adolescents including sustainable development attitudes and behaviour, the dissertation makes clear that the social context should not be neglected. The findings presented in this dissertation provide further support for the political socialisation agents of both parents and the school. More specifically, both parents and the implementation of an ESD intervention in schools might have an important socialisation function in shaping young people's sustainable development attitudes and behaviour, which has so far not received the attention it deserves. However, there is no agreement on how enduring the socialisation experiences of parents and schools are – which should be taken into account in future research. Furthermore, although the socialisation of citizens is an ongoing process, the results make clear that some transition phases such as adolescence should be taken into account in research and policy making.

9.2 Teachers' political attitudes

Social learning theory suggests that teachers serve as role models by transmitting their attitudes and behaviour to their students through their everyday interactions. Within this context, it is often thought that teachers are predominantly liberal and thus, homogenous in their political orientations, leaving little room for diversity (Van de Werfhorst, 2020). However, the political attitudes and preferences of teachers are often missing in empirical research within the field of citizenship education. This is, however, important because teachers' ideological beliefs are associated with their instructional practices (Knowles, 2018; Reicher, Lange, & Chow, 2021). Therefore, in this dissertation, I focused on how Flemish teachers' broader political beliefs and preferences are manifested, which, in turn, might affect the students themselves.

The findings in this dissertation offer rather mixed empirical evidence regarding the alleged teachers' homogeneity in political orientations. More specifically, there were some notable differences between teachers across individual and contextual characteristics. In Chapter 6, I specifically investigated the underlying determinants of teachers' attitudes towards immigrants, which are considered to a particularly politicized and salient issue (Hooghe et al., 2013) and important for teachers to be aware of due to their role as socialisation agents (Bigler & Liben, 2007). The results built on the need to investigate how multiple contexts can be related to teachers' political multicultural attitudes. In this dissertation, I found a positive, although rather small relation between the proportion of non-EU immigrants in both the school region and the place of residence and teachers' tolerance for immigrants. Thus, teachers living and/or teaching in municipalities with more ethnic diversity, were more tolerant towards immigrants. These findings are in line with the theoretical literature on Allport's contact theory (1954) stating that exposure to diversity might promote prejudice reduction and positive attitudes. Furthermore, the empirical results in this dissertation indicate that higher educated teachers with a university degree and teachers working in the general education track seem to be more tolerant for immigrants. While Chapter 6 focused on teachers' anti-immigrant attitudes as a valuable form of liberal political attitudes, the focus in Chapter 7 was on teachers' political and electoral preferences. First, the results in Chapter 7 showed evidence that teachers' anti-immigrant attitudes are strongly associated with their ideological identification which means that teachers with stronger anti-immigrant attitudes position themselves more on the right side of the left-right continuum and are also more likely to vote for a right wing party which is however a similar mechanism among the general population. Second, although the results show that teachers are more liberal with regard to immigration and diversity, there are also teachers with higher levels of anti-immigrant attitudes. Third, in terms of their voting pattern, the results showed that teachers tend to be moderate, eschewing both left and right parties which is however not much different from other highly-educated citizens in Flanders. Although our group of secondary teachers tend to avoid extreme political positions, they are generally not all liberal or left-wing positioned. It is furthermore important to note that teachers try to be ideology neutral in the

classroom. Furthermore, while teachers in the social sciences and humanities are often seen to be more left-wing compared to their colleagues teaching other subjects such as STEM-related subjects, the results show that the subject taught has no effect on teachers' ideological identification.

In light of these findings, some implications for research and practice can be made. In Flanders, secondary teachers in the technical and vocational education track teach more diverse students due to an overrepresentation of ethnic minority students (Boone & Van Houtte, 2013). Consequently, they are assumed to be more familiar with ethnic minority pupils and to have more intergroup contact, related to reduced ethnic prejudice (Vervaet, Van Houtte, & Stevens, 2018, p. 279). Nevertheless, the results of this dissertation make clear that diversity alone in the classroom does not reduce teachers' tolerance for immigrants. The findings in this dissertation are however in line with the study by Vervaet et al. (2018) showing that although Flemish teachers in vocational education implement more multicultural teaching, the teaching track itself is not mediated by the ethnic prejudice of teachers. Based on these results, future research should be undertaken to examine which mechanisms are at play in teaching in Flemish technical and vocational education tracks that is related with higher levels of anti-immigrant attitudes. The results of the dissertation also underline the potential importance for future educational studies to not only include individual teacher characteristics, but also contextual and aggregate data. More specifically, the results clarify that the diversity in the school region and the teacher's place of residence can give us more information about the teacher' political attitudes and beliefs. The question can be raised however whether this finding can be generalised to other contexts given the high rates of school segregation in Flanders (Andersson et al., 2018). Therefore, it is important for future research to look at other regions as well. It also needs to be noted that the results here might suggest a selection effect. Teachers who are already less prejudiced might reside in more heterogenous neighbourhood with a higher level of diversity and might teach in more diverse schools. Additionally, there is free choice of school in Flanders, which means that Flemish children and their parents have the freedom to choose the secondary school they want to attend. A closer look in longitudinal, qualitative, and in-depth research could clarify the self-selection effect. As societies are becoming more ethnically diverse, I advocate that pre-service teachers need qualifications to cope with the diverse classrooms and to experience multicultural teaching. The results from this dissertation further indicate that while more training to reduce racial bias is important for every teacher, teachers teaching and living in low-minority areas and teachers with a bachelor degree might benefit more from this training due to their lower level of anti-immigrant attitudes. Teachers programs should be structured in such a way that teachers have more positive intergroup contacts during their teacher training program, and become aware of their own stereotypes. In addition, for policymakers, it is important to continue to implement a curriculum that requires schools and teachers to encourage tolerance. Furthermore, the results of this dissertation indicate that not all teachers have a liberal value pattern which is an important result given the fact that this assumption is often commonly assumed by the public at large and in research but was not

empirically tested yet. Based on the results, we can conclude that teachers' political orientations do not diverge all that much for other highly educated voters. Hence, teachers are no distinct group within our society and do not deviate much from society at large. This is in line with previous research showing that teachers are indeed not immune to prejudice and largely reflect the political attitudes held within the broader society (Starck et al., 2020). Consequently, these findings challenge the idea that teachers will automatically transmit liberal and positive racial attitudes to their students, as is sometimes argued. Furthermore, these results indicate that teachers need just as much support in coping with their anti-immigrant attitudes as the population at large. Thus, it is important to make teachers aware of their own implicit biases because pupils can form their political attitudes on the basis of teachers' attitudes as role models.

9.3 Citizenship education in practice

In Chapter 8, I examined the extent to which teachers' use of an open classroom climate - including discussions about current events or social issues - differed based on teachers' self-efficacy beliefs and characteristics. It was shown that generally, teachers tend to express support for an 'open classroom' climate, including discussion and dialogue allowing different opinions in the classroom. This finding is in sharp contrast with the results showing the opportunities for students to engage in dialogue in the classroom, which are rather limited. The results also offer clear indication that teachers who believe that they are competent in dealing with societal conflicts and tensions in the classroom, are more often engaged in dialogue with their students and are more willing to allow different opinions in their classroom. Furthermore, female and younger teachers teaching non-STEM related subjects will provide more space for dialogue in their classroom. These results might lead to an improved understanding of the underlying mechanism leading to an open classroom climate. Based on the findings presented in the dissertation, I offer some recommendations for policymakers and educators.

Studies have shown that creating an open classroom climate is one of the most important ways to stimulate young people's citizenship (Campbell, 2019). However, given the initial training of teachers (Munniksma et al., 2017) and in line with the results of this dissertation, it is clear that teachers are not always adequately prepared to fulfil this task. Furthermore, in line with Nieuwelink and Oostdam (2021, p. 143), I argue that citizenship education can be implemented in many subjects 'even the content of subjects that seem far removed from the topic of citizenship can teach students about society and can shape them socially and politically'. However, in Flanders, many of the teachers have no background or sufficient training in areas related to citizenship education. Furthermore, the time for citizenship education remains often minimal and its implementation depends on the efforts of the teachers themselves (Reichert et al., 2021). Since an open classroom climate is an important aspect of citizenship education, fostering an open and democratic classroom climate by the teacher should not be overlooked by research and policy. In order to make citizenship education more effective, the priority of an open

classroom climate needs to be addressed and should become a key component of teacher programs while also the pedagogical role of teachers to create such a climate should receive more attention. Teacher trainings should provide teachers with the necessary tools to design a classroom that facilitates discussions of controversial social and political issues in all teacher disciplines, and thus not only in non-STEM related subjects. The results also show that we need to prepare and enhance (student) teachers' self-efficacy to teach social and controversial issues in the classroom and make them aware of its positive contributions to the civic and political learning of students. Furthermore, not only pre-service but also in-service teacher trainings can have a vital role in preparing and supporting teachers in their role as teachers of democratic and citizenship practices to create an open classroom climate in education by for instance encouraging school interventions aimed at promoting a democratic school and classroom climate. It is also important to understand what teachers are struggling with when implementing an open classroom climate. In this way, educators can support teachers during classroom climate teaching which can improve the chances of fostering such a classroom environment. Thus far, it is less clear how teachers' age and gender are related to the implementation of an open classroom climate. To have a clearer picture, it might therefore be relevant for future research to include individual teachers characteristics more, and focus on the effects of gender and age. It has been shown that the more professional development training on citizenship topics and teaching methods teachers receive, the more they feel prepared, which has an effect on their self-efficacy (Biseth, Hoskins, & Huang, 2021). Hence, younger teachers might be better prepared to implement an open classroom climate. Indeed, Evans (2009) highlights how the classroom climate is related to teachers' skills. Over the last years, citizenship education has received more attention in schools and on the educational policy agendas in the EU (Joris, Simons, & Agirdag, 2022). As a result, there might be more attention in teacher training and young teachers might have more knowledge on citizenship-related topics, which helps them feel prepared to teach these topics in their classroom practices.

Generally, I argue that more research is needed to understand the development of citizenship education practices. As argued in the first Chapter, policymakers and scholars are currently concerned about young people's democratic citizenship. With the renewal of the curriculum in secondary schools in Flanders, citizenship education has now a more prominent place in the formal curriculum. As a result, schools and teachers are forced to give more explicit attention to citizenship and work more explicit on achieving the compulsory citizenship goal which is a first step in the right direction. It is clear that teachers' attitudes are important to take into account. Furthermore, we should also take teachers' needs and challenges within the context of citizenship education into account.

9.4 Limitations of the main findings

In the remainder of the current chapter I recognise some emerging limitations inherent to the methodological approaches and the research questions across the different empirical chapters. Below, I point out four important limitations to take into account.

One of the main limitations identified in this dissertation is that it is not possible to claim causal relationships underlying the different research questions. Although this work would certainly benefit from answers that confirmed a causal relationship, the studies in this dissertation are quantitative and largely building on cross-sectional survey data and have therefore not been able to show causal effects. There is no clear way to determine the causal mechanisms because even some of the studies in this dissertation makes use of panel data (Chapter 3, Chapter 4 and Chapter 5), which offers a unique way of looking at changes over time with data from two time points or survey waves, one cannot be sure about the specifying directions of the relations. Hence, the conclusions of the different chapters are mainly based on theoretical considerations and theories. Especially in Chapter 6, the causal claim is hard to make. Indeed, a frequently recurring critique of the contact hypothesis of Allport (1954) deals with the causality and research on the causality of intergroup contact seems to remain inconclusive (Hooghe et al., 2013). Even though it remains methodologically challenging and difficult to demonstrate a causal interpretation, future qualitative studies combined with experimental and longitudinal research designs such as time-series data with many different time points are needed to clarify the causal influences in this dissertation. Although it was beyond the reach of this dissertation to make causal claims, it is important to note that the results of the panel data based on panel studies used in this dissertation are stronger than associations at one point in time and thus a useful step forward in the research field. In Chapter 4 for instance, the similarities in the results from the two datasets increase the confidence of the findings of the impact of the political discussions on congruence within the family. However, as also reflected on in the Chapter, we should be cautious when we interpret the direction and the causality of the political discussions in the family. In the literature on socialisation there is an ongoing debate on the direction of the transmission process. The results also show that the debate is not resolved yet and we do not exactly know whether the parents influence their children or vice versa, or whether the influence in the family is rather a reciprocal process. Thus, although the findings of this chapter gives us a better understanding of how family influence takes place within the context of sustainable development, future studies should investigate the family discussions more closely and look at the exact relationships, mechanisms and interactions that underlies this connection.

Another limitation of the current dissertation is the use of survey data that was gathered to answer the specific research questions in the empirical chapters. By implementing survey research, two challenges arise. First, as with all survey data, we ignore that the different constructs (i.e. political attitudes and behaviour) measured by the survey items are in fact not directly observable, and thus might contain

some bias. Consequently, the importance of the results in this dissertation may have been underestimated. Second, the use of survey data in this dissertation relies on participants' self-reports to accurately report their attitudes and behaviour and might therefore cause social desirability response bias (respondents tend to give the "right" answer rather than that the answer is reflecting their actual attitudes or behaviour) or over-report or overestimate their own actions. Particularly in the field of environmental attitudes and behaviour, because being in favour of the environment is widely accepted, we might assume social desirability. Nevertheless, Milfont (2009) showed in his study that social desirability has no strong impact on how people answer questions in (anonymous) surveys related to their environmental attitudes and behaviour. This is in contrast to other socially sensitive issues, such as anti-immigrant attitudes which may be discussed less openly than general political attitudes (Katz, 2003) and might be subject to social desirability (De Houwer, 2006). Generally, although the issue of social desirability is a common concern and poses always a challenge for survey research, it has been shown that the extent to which social desirability affects survey responses is rather small (Hjerm, Johansson, & Werner, 2018). Furthermore, with regard to the ceiling effects created by high scores prior to the ESD intervention in Chapter 5, which might underestimate the relationship or impact of the true effects of the ESD intervention, Although I could detect changes between the pre and post-scores, I argue that the results much be interpreted carefully because social desirability might have affected the respondents' responses. Future research should confirm these results by for example collecting observations and in-depth interviews which can give further insights into the underlying processes. Nevertheless, with regard to the latter, some scholars argue that social desirability bias is expected to be even stronger when respondents are directly asked to openly express their attitudes or behaviour in for instance interviews (Degner & Dalege, 2013).

A third limitation is the fact that the data are mainly focused on two case studies within a specific geographic location, i.e., Flanders (Belgium). While research focusing on specific cases allows for a more in-depth investigation, the external validity (the degree to which the results can be generalised to the wider population) is a common concern in case study research. The Flemish data might form a possible limitation for the issue of the overall generalisability and applicability of the conclusions that are drawn. As explained in Chapter 1, Flanders is a Western European region with a distinct and educational system where schools have a substantial autonomy in both policy making, developing curricula and organising teaching (OECD, 2015) which in other countries might be absent. Hence, we cannot assume that the mechanisms which were found can be generalized towards other educational systems in different contexts. Consequently, the results of this dissertation should be manly situated in the Flemish context itself. It is desirable for future research to investigate to what extent the results which are based on the case studies are generalisable to other, various contexts and regions around the world to generalize the conclusions of the current dissertation. Although the schools that participated in the first case study (VALIES) were geographically located in the five provinces in Flanders, they were

not randomly sampled. More specifically, Flemish school principals were invited to take part in the VALIES project. Consequently, a selection effect is plausible, whereby school principals or teachers who were already interested in ESD were more willing to engage in the project. Therefore, in the future, it might be interesting to recruit schools to employ ESD interventions with random assignment of schools, teachers and classes alike. The same goes for the parents who were invited to take part in the first survey by their children, participating in the project. Hence, also the parents might have a certain disposition towards the environment and sustainability. Furthermore, the results of the study might, in part, be affected by the freedom of school choice in Belgium where parents can choose for a particular school due to the attention to the environment and ESD teaching. Future research is needed to examine if such an effect might explain parts of the results. Furthermore, the children and parents that were part of the first case study, are not representative of the general Flemish adult and child population, especially given the narrow range of ages among adolescents. Yet, given the possible limitations of this case study, I believe that testing the results based on this specific Flemish case, serves as a first valuable step to examine the prosed research questions. It is important to note that the secondary school teachers that participated in the second case study, however, are more reliable to represent the secondary Flemish population of school teachers. Next to the fact that this was a strictly random selected sample of teachers in Flanders, the data also showed that it was a fairly representative teacher sample, which offers the possibility to obtain a better understanding of the secondary teachers in the Flemish region of Belgium.

A fourth major limitation specific to this work is the impact of the global COVID-19 pandemic on both the data collection and the attitudes and beliefs of the respondents (i.e. adolescents and parents) who participated in the first case study of this dissertation. Since the beginning of 2020, the world has been confronted with the COVID-19 pandemic which has had a major impact on human life. Belgium was already seriously hit by the pandemic during the first months of the crisis (ECDC, 2020). The pandemic as a health crisis rapidly evolved into a major social and political crisis (Verachtert, Stiers, & Hooghe, 2022). Due to the global and local restrictions to contain the spread of the pandemic, the pandemic forced us to change the way in which we organized our lives as individuals or households, as well as economies or societies (Van Ootegem et al., 2022). Furthermore, the pandemic had a severe impact on education in many parts of the world. In Flanders, schools were confronted with closing and had to switch to online teaching from April 2020 to June 2020. The school closing was a major challenge with regard to the first case study of this dissertation, were various schools were taking part in the ESD intervention. Consequently, schools were almost unable to implement the ESD intervention to their full potential which might have influenced the results of the respondents involved in the study. Some schools also dropped out of the ESD project, reduced their ESD projects or postponed them to the next schoolyear. Furthermore, due to the school closing, students had fewer opportunities to interact and collaborate directly with their peers and teachers (Deimel et al., forthcoming). It is also important to note that as a result of the school closing, the surveys of the second wave of the first case study were

mainly filled in by adolescents online. Although many of the involved schools required filling in the survey as homework, it might be the case that adolescents who were less motivated or who did not have access to the internet, did not fill in the survey which might have had an implication for the results. Hence, I argue that future research should replicate the ESD intervention by developing similar analyses in a non-COVID context questioning the effectiveness of ESD programs to generalise the results.

9.5 Avenues for future research

Based on the results of the various empirical chapters, several important conclusions were taken. Notwithstanding, some questions remain unanswered and offer ample opportunities for further analysis. Before coming to the end of this dissertation, I want to close with a set of important recommendations for future research. First, empirically, addressing the limitations as discussed above should be taken into account. Furthermore, I also identify two additional main avenues for future research which are outlined below, including the importance of the interplay between a combination of school-, teachers- and student-level variables in the context of citizenship education and a call for more longitudinal research in socialisation research among both young and older adolescents.

It is clear from the literature that an open classroom climate, which fosters dialogue and respects multiple perspectives and opinions of students, enhances adolescents' civic engagement (Campbell, 2008; Castillo et al., 2015; Godfrey & Grayman, 2014; Lenzi et al., 2014; Martens & Gainous, 2013; Persson, 2015). The positive associations has been investigated across different groups of students, educational systems, countries, and times as shown in large-scale and comparative studies such as CivED 1999, ICCS 2009 and ICCS 2016 (Knowles, Torney-Purta, & Barber, 2018; Schulz et al., 2018). Nevertheless, scholars have shown that schools often fail to offer equal access to an open classroom climate (Deimel et al., 2020). It also less clear how an open classroom is developed. Furthermore, in the field of citizenship education, there seems to be somewhat less attention for teacher-variables than school- and pupil-variables. This dissertation aimed to address this gap by demonstrating the importance of individual teachers' characteristics in fostering such an open classroom climate. I looked at, among other things, what types of teachers are more likely to foster an open classroom climate and whether younger or older teachers are more likely to do so. First, despite the significant research findings, I only looked at a limited number of teacher-level effects and more work can be done in this area. It would for instance be interesting to see whether the political attitudes of teachers (as studied in Chapter 7) are a contributing factor in how likely the teacher is to employ an open classroom climate. Gainous and Martens (2016) indeed found that teachers who identified themselves as liberal enact an open classroom climate more than their conservative colleagues. These findings support the study of Apple (2008) who claims that teachers' ideology plays a role in the implementation of an authentic open classroom. Next, future research could investigate the possibly important role of teachers' instructional practices, orientation to an open classroom climate and their time devoted to citizenship education. As Chapter 5

has shown in this dissertation, teacher trainings and preparedness of teachers can make a difference in students' civic outcomes, which is in line with Donbavand and Hoskins (2021). In this sense, it is necessary for future research to take teacher trainings and their capabilities more into account. Second, I did not examine the potential beneficial effects of students and schools because the data from the case study did not include such measures. Therefore, future research could go beyond the approach followed here, and explore whether other important factors such as school characteristics can have an impact on the association between teacher characteristics and the enactment of an open classroom climate. Furthermore, future research could also examine the interplay of schools, teachers and pupils alike. When considering school characteristics, the socioeconomic and ethnic diversity of schools might be important to take into account (Schulz et al., 2018). Several previous studies have indeed found evidence that students of various socioeconomic and ethnic diversity vary in their citizenship competences, have unequal access to an open classroom climate and that the effects of citizenship education also vary in these groups (Hoskins et al., 2017; Knowles et al., 2018). It is worthwhile to combine these factors with teacher-level characteristics and demonstrate whether there is an association with the teachers' implementation of an open classroom climate. Furthermore, in line with Coopmans et al. (2020), citizenship education school policies and the professional learning of teachers, which are more general effectiveness-enhancing factors known from school effectiveness research, might be important to investigate. In this context, there is agreement among scholars to implement a school effectiveness model of citizenship education showing the impact of various background factors and optimal school practices to promote an open classroom climate (Maslowski et al. 2009; Reichert & Print 2018; Sampermans et al. 2018). Next, the perceived open classroom climate in this dissertation was operationalized as a teacher variable. However, future research can investigate the perception of an open classroom climate also as a student-level feature. This is important because previous research has shown that there are differences between teachers' and students' perceptions of classroom activities (Siegel-Stechler, 2021). Furthermore, an open classroom climate might be perceived differently by individuals in the same class as well. Additional research in this area could include qualitative research using focus groups or interviews to determine what factors account for the variance in teachers' and students' perceptions. Fourth, in this dissertation, the measurement of an open classroom climate was based on the frequency of discussions and does not relate to the specific content and the nature of an open classroom climate and discussions. Furthermore, it does not capture information the openness of the classroom climate. I argue that future research should look at a broader conceptualisation for an open classroom climate and investigate the ways in which discussions are structured (White & Mistry, 2019). It is important to focus not only on teachers' classroom practices itself but also on how these are interpreted by their students and whether this is interpreted differently by different groups of pupils such as ages, gender, ethnicity, education tracks. Furthermore, among researchers there is also a call for contextualised notions of classroom climate and citizenship education and more interdisciplinary approaches in analyses of large-scale international datasets (Knowles et al., 2018) which is indeed

important to be able to compare these trends across different contexts and countries. The international studies, such as ICCS 2016 and ICCS 2022, can enable us to address some of the interesting questions asked above. Finally, it is important to note that policymakers and educators could encourage the fostering of an open classroom climate within schools by prioritize the enhancement of an open classroom climate as an important policy goal. Furthermore, I argue that research within the context of an open classroom climate should not be strictly limited to the field of citizenship education itself. More specifically, the avenues for future research as described above are also important to take into account in the field of education for sustainable development which is another main focus of this dissertation. As already discussed in the introduction Chapter, an open classroom climate including classroom discussions and dialogue is considered to be a key element in citizenship education. More specifically, an open classroom climate as an instructional strategy is important for citizenship by stimulating students to develop their own personal viewpoints on social and political issues, to recognise multiple perspectives (pluralism) and improve their reasoning and critical thinking skills which is indeed in line with education for sustainable development with its components of holism, pluralism and an orientation towards action.

Another potential main avenue for future research is related to political socialisation research and the development of civic attitudes and behaviour of different age cohorts from childhood to late adulthood. First, as this dissertation has shown, political socialisation research serves as a solid theoretical base for the explanation of the development of civic engagement, and sustainable development competences more specifically. Although political socialisation refers to processes operating over time (Amnå et al., 2009), there is still a lack of knowledge about the development of political and civic engagement over the entire period of adolescents. Therefore, in line with a number of authors, I argue that future research should follow a longitudinal research design into account (Amnå et al., 2009; Bougher, 2018; Degner & Dalege, 2013; White & Mistry, 2019). Indeed, "only with a longitudinal design it is possible to find empirical support for the processes of civic socialisation over time" (Lenzi et al., 2014, p. 268). Longitudinal research should however also take into account that it is difficult to keep all factors constant over time. Although the design of Chapter 4 and 5 of this dissertation is not cross-sectional and covers short periods of time (i.e. one school year), the data do not allow causal claims among variables and are limited to show short-term effects of the family and the school context as socialisation agents. In other words, we do not know whether the family and school effects on the sustainable development competences endure into late adolescents and adulthood. Therefore, follow-up studies are needed to understand the stability of the attitudes and behaviour with regard to sustainable development and investigate whether these are life-long and stable civic values across time. Based on the impressionable years hypothesis as explained in the first Chapter, it could be expected that the attitudes are sensitive to influences from both the school and family context during adolescence but once crystallized and developed in early adulthood remain relatively stable. However, to develop a clearer picture of these

mechanisms and to disentangle the complex relationships between child, parent, and teacher attitudes, we need longitudinal studies with repeated measurements of sustainability attitudes and behaviour over time. Furthermore, the strength of influence of the family and school context in social and political attitudes tends to vary between studies (Degner & Dalege 2013; Jennings et al. 2009; Zuckerman, 2005; Zuckerman et al. 2007). One reason for this variation is the difference among adolescents. As Pickard (2019) argues, it is important for future research to not treat young people as a homogeneous group. Indeed, from previous empirical literature in political socialisation, it is known that youth differ in their citizenship attitudes and behaviour (Amadeo et al., 2002; Degner & Dalege, 2013; Geijsel et al., 2012; Schulz et al., 2010; Torney-purta & Amadeo, 2003). More specifically, girls tend to score higher than boys regarding citizenship attitudes and behaviour. Furthermore, students in secondary schools (13-15 years) have been found to have less positive attitudes towards citizenship than students in primary education (10-11 years) which also suggest the adolescent dip as found in the results of Chapter 5 of this dissertation. This calls for further research on gender differences across more and different age groups and among different contexts, countries and cultures to provide a more conclusive answer to this issue. Furthermore, as Biesta (2011) suggests, educators should think about implementing differential teaching strategies for empowering different group of students towards citizenship engagement. This dissertation has shown that both the family and the school context are important for the development of adolescents' civic engagement with regard to sustainable development. However, the empirical chapters examined the home context in isolation of the school context and vice-versa and did not consider the ways in which different agents of socialisation interact with each other to promote sustainable development. As explained in the first chapter, it is generally agreed that different agents of political socialisation exist (i.e., family, school, peers, mass media, neighbourhood, political parties) but the manner in which they jointly influence civic engagement needs to be studied further. Therefore, in line with White and Mistry (2019, p. 199), I argue that 'future work should examine the home and the school contexts simultaneously as to better understand the interactions between contexts, additive effects, and whether or not high quality civic experiences in one context can make up for limited experiences in the other'. Also Amnå et al. (2009) argue that future research should integrate different socialisation contexts at the same time and explain the interrelations between them. In extending this line of research, we could also look more in depth at the child's potential influence on parents' values and behaviour through the trickle-up political socialisation mechanisms which has been argued in previous studies (Dahlgaard, 2018; Linimon & Joslyn, 2002; McDevitt & Chaffee, 2002;). Furthermore, previous studies has also shown that civic engagement in school can have a positive effect on parental attitudes (Lawson et al., 2019) and behaviour (McDevitt & Kiousis, 2007; York, 2019). Therefore, in addition, the intergenerational transmission model in political socialisation theory should be broadened to explain reciprocal effects between adolescents and parents' civic attitudes and behaviour. Hence, to sum up, investigating adolescents' civic engagement deserves a longer time span and needs to incorporate other

agents, which will contribute to our general understanding of political socialisation research on which this dissertation is build.

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Summary

The 21ste century is characterised by global challenges and tensions such as political conflicts, social injustice, and the impacts of the climate change. As a result, the democracy, but also democratic values are put to the test – both among older and younger people. In line with the 'formative years' hypothesis, adolescence is an important and critical period for the formation of political attitudes and behaviour. Young people are sensitive to broader societal and global issues and influences of different socialisation agents such as the family, the school, peers, and the media. In line with the current downward trend of political participation, this dissertation aims to contribute to the conceptualising of today's youth civic engagement and integrates insights from the field of political socialisation research.

The dissertation is organised in four different parts. The first part, which is an introduction to the following empirical chapters, identifies both individual-level and contextual determinants that are important for the formation of pro-environmental attitudes and behaviour. In the second part of the dissertation, I look at possible effects that key socialisation agents such as parents and the school may have on young people in the context of the current sustainable development challenges. Discovering these processes contributes to the understanding of how sustainability attitudes and behaviour among adolescents are formed. Next to parents, I investigate the role of a large-scale school project on students' sustainability competences. By using a panel dataset gathered before and after the implementation of a school intervention, we can measure differences in sustainable development knowledge, attitudes, and behaviour before and after the project. Next, it is often assumed by researchers and the wider public that teachers have a liberal minded value pattern. However, little attention is devoted to investigate the validity of this assumption. Therefore, in the third part of this dissertation, I look at teachers as possible civic role models within the context of the democratic school and investigate how teachers' broader political attitudes are manifested. More specifically, I look at teachers' tolerance for immigrants and the ideological and electoral preferences of teachers. Within the literature of citizenship education as a socialisation practice, an open classroom climate is important. Therefore, in the last part of this dissertation, I look at how teachers implement an open classroom climate with discussions and dialogue and investigate whether teachers' individual characteristics are important to explain these practices.

The results indicate that parents and their children are, although to a lesser extent, similar in their sustainability attitudes and behaviour. Hence, parental socialisation remains an important starting point for the development of adolescents' sustainability attitudes and behaviour. The findings of the dissertation also indicate that discussing sustainable issues in the family is an important mechanism in explaining parent-child similarities with regard to sustainable development. The results are useful in expanding our understanding of the active role of adolescents themselves and show that children do not just copy the political attitudes and behaviour of their parents. The results also demonstrate that

education for sustainable development can indeed contribute to the formation of adolescents' sustainability development competences. Hence, this dissertation makes clear that the formation of sustainable development attitudes and behaviour among adolescents can be influenced by many factors – such as the family and sustainable development interventions at schools. This suggests that there are different ways to encourage adolescents' sustainability engagement. The findings in this dissertation offer rather mixed empirical evidence regarding the alleged teachers' homogeneity in their political attitudes. The results make clear that teachers are no distinct group within our society and do not deviate much from society at large. Furthermore, the results indicate that teacher trainings should provide teachers with the necessary tools to design an open classroom climate that facilitates discussions of controversial social and political issues in all teacher disciplines, and thus not only in non-STEM related subjects.

Samenvatting

De 21ste eeuw wordt gekenmerkt door globale uitdagingen en spanningen waaronder politieke conflicten, sociale ongelijkheid, en de gevolgen van de klimaatverandering. Hierdoor worden de democratie, maar ook democratische waarden - van zowel ouderen als jongeren - op de proef gesteld. De 'formatieve jaren' hypothese stelt dat de adolescentie een belangrijke en kritische periode is voor de verwerving van politieke attitudes en gedragingen. Jongeren zijn gevoelig voor grote maatschappelijke en globale problemen en invloeden van verschillende socialisatieagenten zoals de familie, de school, leeftijdsgenoten, en de media. In overeenstemming met de huidige neerwaartse trend van politieke participatie, wil dit proefschrift bijdragen aan de conceptualisering van de hedendaagse maatschappelijk betrokkenheid van jongeren en integreert hierbij inzichten uit het onderzoeksveld van de politieke socialisatie.

Deze dissertatie bestaat uit vier verschillende onderdelen. Het eerste deel, hetgeen een introductie is op de daaropvolgende empirische hoofdstukken, identificeert belangrijke determinanten voor de ontwikkeling van milieuvriendelijke attitudes en gedragingen op zowel individueel als op contextueel niveau. In het tweede deel van dit proefschrift, kijk ik naar mogelijke effecten die belangrijke socialisatieagenten zoals ouders en de school kunnen hebben op jongeren in de aanpak van duurzaamheidsuitdagingen. Het nagaan van deze processen leidt tot een beter begrip van hoe duurzaamheidsattitudes en gedragingen zich bij adolescenten ontwikkelen. In een volgende stap in de dissertatie, onderzoek ik de rol van een grootschalig schoolproject met betrekking tot de duurzaamheidheidscompetenties van studenten. Door het gebruik van paneldata, verzameld voor en na de implementatie van de schoolinterventie, kunnen we verschillen in kennis, attitudes, en gedragingen met betrekking tot duurzame ontwikkeling, voor en na het project nagaan. Daarnaast wordt er vaak verondersteld, zowel door onderzoekers als door het grotere publiek - dat leraren een liberaal waardepatroon hebben. Toch wordt er maar weinig aandacht besteed aan het onderzoeken van de validiteit van deze stelling. Daarom kijk ik in het derde deel van deze dissertatie naar leraren als mogelijke maatschappelijke rolmodellen binnen de context van de democratische school en onderzoek ik hoe de ruimere politieke attitudes van leraren zich manifesteren. Meer bepaald kijk ik naar de tolerantie tegenover immigranten bij leraren en de ideologische en electorale voorkeuren van leraren. Binnen de literatuur over burgerschapseducatie als socialisatiepraktijk, is een open klasklimaat van belang. Daarom kijk ik in het laatste deel van deze dissertatie naar hoe leraren een open klasklimaat met discussies en dialoog realiseren en onderzoek ik of de individuele karakteristieken van leraren belangrijk zijn om deze praktijken te verklaren.

De resultaten tonen aan dat ouders en hun kinderen, hoewel in mindere mate, gelijkaardig zijn in hun duurzaamheidsattitudes en gedragingen. Ouderlijke socialisatie blijft dus een belangrijk vertrekpunt voor de ontwikkeling van duurzaamheidsattitudes en gedragingen van adolescenten. De bevindingen van de dissertatie tonen ook aan dat het houden van discussies over duurzaamheidsonderwerpen binnen het gezin een belangrijk mechanisme is om ouder-kind gelijkenissen met betrekking tot duurzaamheid te verklaren. Deze resultaten wijzen op de actieve rol van adolescenten zelf en tonen aan dat jongeren niet enkel de politieke attitudes en gedragingen van hun ouders overnemen. De resultaten tonen ook aan dat educatie voor duurzame ontwikkeling inderdaad kan bijdragen aan de ontwikkeling van de duurzaamheidscompetenties van jongeren. Dit proefschrift maakt dus duidelijk dat de vorming van attitudes en gedragingen op het gebied van duurzaamheid bij adolescenten beïnvloed kan worden door vele factoren, waaronder het gezin en duurzaamheidsinterventies op scholen. Dit toont aan dat er verschillende manieren zijn om de betrokkenheid van adolescenten met betrekking tot duurzaamheid te stimuleren. De empirische resultaten in de dissertatie zijn eerder gemengd wanneer het gaat om de zogenaamde homogeniteit van de politieke attitudes bij leraren. De resultaten tonen aan dat leraren geen apart te onderscheiden groep vormen binnen onze samenleving en dus niet veel afwijken van de samenleving. Bovendien tonen de resultaten verder aan dat lerarenopleidingen leraren van de nodige tools moeten voorzien om een open klasklimaat te realiseren waarin discussies met controversiële sociale en politieke kwesties centraal staan in alle lerarendisciplines en dus niet alleen in de niet-STEM gerelateerde vakken.

Appendix Chapter 2

Appendix A

Tabel A.1

Mean scores and standard deviations for the climate change attitudes and household energy behaviour of European citizens

Variable	Coding	Mean	SD
Behaviour 1 (reducing energy use)	1-6	4.15	1.22
Behaviour 2 (buying the most energy efficient appliances)	0-10	7.77	2.30
Concern	1-5	3.00	0.93
Awareness	1-3	1.45	0.58
Responsibility	0-10	5.58	2.73

Tabel A.2

Mean scores and standard deviations for the climate change attitudes and household energy behaviour per country (N=23)

Country	*Behaviour 1 (1-6)*	*Behaviour 2 (0-10)*	*Concern (1-5)*	*Awareness (1-3)*	*Responsibility (0-10)*
Austria	3.96 (1.21)	8.02 (2.05)	3.04 (.90)	2.90 (.36)	5.92 (2.68)
Belgium	4.2 (1.14)	8.03 (1.88)	3.18 (.86)	2.96 (.53)	5.99 (2.34)
Czechia	3.99 (1.19)	7.87 (2.10)	2.73 (1.06)	2.33 (.62)	3.34 (2.59)
Estonia	4.19 (1.19)	7.65 (2.34)	2.66 (.94)	2.36 (.61)	4.25 (2.86)
Finland	4.21 (1.03)	7.86 (2.10)	3.07 (.81)	2.37 (.58)	6.55 (2.27)
France	4.47 (1.16)	7.92 (2.11)	3.24 (.93)	2.62 (.53)	6.92 (2.29)
Germany	4.46 (1.06)	8.46 (1.95)	3.35 (.85)	2.59 (.56)	6.59 (2.34)
Hungary	4.34 (1.11)	7.58 (2.43)	3.06 (.85)	2.43 (.62)	4.33 (2.61)
Ireland	4.17 (1.20)	7.64 (2.27)	2.78 (.93)	2.64 (.54)	5.64 (2.57)
Iceland	3.88 (1.15)	6.86 (2.73)	3.11 (.90)	2.73 (.47)	6.26 (2.43)
Israel	3.72 (1.45)	7.64 (2.79)	2.67 (1.05)	2.55 (.60)	5.23 (3.16)
Italy	4.29 (1.24)	8.30 (1.88)	3.21 (.84)	2.57 (.57)	5.31 (2.55)
Lithuania	4.12 (1.22)	8.07 (2.07)	2.87 (.91)	2.46 (.58)	4.90 (2.65)
Netherlands	4.13 (1.11)	7.52 (2.18)	3.02 (.85)	2.66 (.53)	5.82 (2.35)
Norway	4.04 (1.09)	6.93 (2.39)	3.00 (.83)	2.44 (.60)	6.25 (2.30)
Poland	4.03 (1.13)	8.40 (2.10)	2.74 (.86)	2.47 (.58)	5.53 (2.52)
Portugal	4.45 (1.21)	8.41 (2.06)	3.50 (.91)	2.77 (.46)	5.70 (3.12)
Russian Federation	3.52 (1.38)	6.27 (2.58)	2.77 (.95)	2.38 (.61)	3.87 (2.55)
Slovenia	4.37 (1.15)	8.03 (2.26)	3.18 (.86)	2.71 (.50)	5.36 (2.74)
Spain	4.38 (1.26)	7.98 (2.20)	3.45 (.86)	2.74 (.48)	5.94 (2.65)
Sweden	4.07 (1.10)	7.48 (2.19)	2.84 (.87)	2.58 (.55)	6.50 (2.24)
Switzerland	4.22 (1.12)	8.17 (2.13)	3.12 (.84)	2.64 (.53)	6.86 (2.24)
United Kingdom	4.30 (1.19)	7.24 (2.53)	2.94 (.84)	2.57 (.59)	5.88 (2.50)

Tabel A.3

Fixed effects for countries

	Behaviour 1	Behaviour 2	Behaviour 1+2
Belgium	.387*** (.064)	-.080 (.072)	.153**(.054)
Switzerland	.304*** (.067)	-.072 (.075)	.116*(.057)
Czechia	.500*** (.063)	.381***(.071)	.440***(.053)
Germany	.627***(.058)	.145*(.064)	.386***(.048)
Estonia	.538***(.064)	-.183*(.072)	.178**(.054)
Spain	.617***(.066)	-.036(.074)	.291***(.056)
Finland	.295***(.063)	-.316***(.070)	-.011 (.053)
France	.546***(.062)	-.383***(.070)	.081 (.053)
United Kingdom	.064***(.064)	-.885***(.072)	-.178**(.054)
Hungary	.686***(.070)	-.317***(.079)	.185**(.059)
Ireland	.375***(.061)	-.377***(.068)	-.001 (.051)
Israel	-.009 (0.63)	-.034***(.071)	-.022 (.053)
Island	-.303***(.080)	-1.362***(.090)	-.832***(.067)
Italy	.561***(.066)	.546***(.073)	.553***(.055)
Lithunaia	.270***(.070)	.106 (.079)	.188**(.059)
Netherlands	.236***(0.66)	-.580***(.073)	-.172**(.056)
Norway	.104 (.066)	-1.165***(.074)	-.531***(.056)
Poland	.221**(.069)	.287***(.078)	.254***(.059)
Portugal	.578***(.073)	.288***(.801)	.433***(.061)
Russian Federation	-.573***(.073)	-1.380***(.082)	-.976***(.061)
Sweden	.059 (.067)	-.773***(.075)	-.357***(.056)
Slovenia	.623***(.073)	-.104 (.082)	.259***(.061)

Note: Dependent variable: Energy behaviour question 1 on a 10 point scale, Energy behaviour question 2 on a 10 point scale, Energy behaviour question 1+2 on a 10 point scale, * p<.050, ** p<.010, *** p<.001. The values in the brackets contain the standard errors of the estimations. Austria is used as the reference category

Appendix Chapter 3

Appendix A: variables in the analyses

Dependent variables

Environmental attitudes.

Attention for climate change exaggerated. Respondents were asked to what extent they agreed with the statement that "I [they] find the attention for climate change is exaggerated". They could indicate their opinion on a scale ranging from 1 ("fully agree") over 2 ("rather agree"), 3 ("nor disagree, nor agree"), 4 ("rather disagree") to 5 ("fully disagree").

More attention for environment needed. Respondents were asked to what extent they agreed with the statement that "there should be more attention to protecting the environment". They could indicate their opinion on a scale ranging from 1 ("fully agree") over 2 ("rather agree"), 3 ("nor disagree, nor agree"), 4 ("rather disagree") to 5 ("fully disagree").

Government spending environmental policy. Respondents could indicate whether they thought the government should increase or decrease spending on a list of domains – the first one being environmental policy. They could indicate their spending preferences on a scale ranging from 1 ("a lot less") over 2 ("a bit less"), 3 ("the same amount"), 4 ("a bit more"), to 5 ("a lot more")

Interest in climate change. Respondents were asked to what extent they were interested in climate change, on a scale ranging from 1 ("Not interested at all") over 2 ("hardly interested") and 3 ("rather interested") to 4 ("very interested").

Interest in protecting the environment. Respondents were asked to what extent they were interested in protecting the environment, on a scale ranging from 1 ("Not interested at all") over 2 ("hardly interested") and 3 ("rather interested") to 4 ("very interested").

We expected these answers to function as different indicators of one underlying attitudinal pattern, which we tested by including them in a factor analysis:

Table A.1

Factor analysis results for environmental attitudes in Waves 1 and 2.

Item	Wave 1	Wave 2
Interest in climate change	0.724	0.723
Interest in protecting the environment	0.661	0.688
All attention for the climate change is exaggerated (reverse coding)	0.650	0.657
Government expenditure for environmental policy should be increased or decreased	0.674	0.656
More attention is needed for the protection of the environment	0.484	0.540
Eigenvalue	2.073	2.187
Cronbach's Alpha	0.767	0.779
N	1066	603

The results of the factor analysis show a substantial correlation between the different items. Therefore, we create one sumscale by adding up the scores to the different items and dividing this by the number of items.

Environmental behaviour.

Respondents could indicate to what extent they behaved as follows:

- "I try to sort as much waste as I can";
- "When I can, I do not throw organic waste with the residual waste";
- "I do things to limit waste (e.g., throw away less food and do not waste paper)".

For each statement, respondents could indicate whether they "fully disagree", "rather disagree", "disagree nor agree", "rather agree", or "fully agree". We expected these answers to function as different indicators of one underlying behavioural pattern, which we tested by including them in a factor analysis:

Behaviour	Wave 1	Wave 2
Sorting waste	0.559	0.555
Recycling organic waste	0.595	0.57
Reduce waste	0.620	0.606
Eigenvalue	1.051	1.007
Cronbach's Alpha	0.631	0.614

The results of the factor analysis show a substantial correlation between the different items. Therefore, we create one sumscale by adding up the scores to the different items and dividing this by the number of items.

Independent variables

Health more important than climate. Respondents were asked: "the past weeks [the COVID-19 lockdown] there have been very strict measures for the whole Belgian population. To what extent do you agree or disagree with the following statements for your own personal situation?" One statement respondents were asked to rate was "our own health is more important than taking care of the climate or the environment" and they could rate this statement on a scale ranging from 1 ("fully disagree") to 2 ("rather disagree"), 3 (nor disagree nor agree"), 4 ("rather agree"), to 5 ("fully agree").

Postpone green deal. Respondents were asked to rate the statement that "environment-friendly measures should be postponed to save the economy" on a scale ranging from 1 ("fully disagree") to 2 ("rather disagree"), 3 (nor disagree nor agree"), 4 ("rather agree"), to 5 ("fully agree").

Control variables

Sex. Sex of the respondent; 0=male, 1=female

Age. Age of the respondent, calculated by subtracting the year of birth by the year of the survey.

Educational level. Educational level of the respondent, divided in three groups: low (no education, primary education, lower secondary education); middle (higher secondary education, post-secondary non-tertiary education, short-cycle higher education); high (tertiary education).

Satisfaction with Income. Respondents were asked to indicate which situation applied to their family income: “it is very difficult to make end meet with the current income” (code 1); “it is difficult to make end meet with the current income” (code 2); “we manage to make ends meet with the current income” (code 3); “we can live comfortably with the current income” (code 4).

School project environment. An indicator of whether or not the school of the children of the respondents took part in the project on environmental education.

Appendix B: Results for attitudes and behaviour separately

Table B.1

Replication of Table 3.1 attitudes separately

	Survey wave 1	Survey wave 2	Difference between waves
Attention for environment is exaggerated [reversed]	0.681	0.707	0.027**
More attention for environment needed	0.740	0.741	0.001
Government should spend more on environmental policy	0.715	0.677	-0.038***
Interest in climate change	0.746	0.739	0.007
Interest in protecting environment	0.790	0.775	-0.015*

Table B.2

Replication of Table 3.2 for attitudes separately

Dependent variable: change in…	(1) Attention exaggerated [reversed]	(2) Attention exaggerated [reversed]	(3) More attention environment needed	(4) More attention environment needed	(5) More spending environmental policy	(6) More spending environmental policy	(7) Interest climate change	(8) Interest climate change	(9) Interest protecting the environment	(10) Interest protecting the environment
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Health more important than climate	0.001	0.002	-0.033**	-0.033**	-0.008	-0.008	0.000	-0.001	0.001	0.001
	(0.010)	(0.010)	(0.011)	(0.011)	(0.008)	(0.008)	(0.006)	(0.006)	(0.007)	(0.007)
Sex (ref.=male)		-0.017		-0.016		0.012		-0.019		-0.000
		(0.025)		(0.029)		(0.021)		(0.017)		(0.018)
Age		-0.002		-0.000		0.001		-0.002+		-0.000
		(0.002)		(0.002)		(0.002)		(0.001)		(0.001)
Education: low										
Middle		0.035		-0.007		0.015		0.034		-0.032
		(0.045)		(0.052)		(0.037)		(0.030)		(0.032)
High		0.055		-0.016		-0.003		0.012		-0.039
		(0.044)		(0.051)		(0.036)		(0.030)		(0.031)
Income		-0.027+		-0.001		0.007		0.007		0.017
		(0.014)		(0.017)		(0.012)		(0.010)		(0.010)
School child in project		0.013		0.018		0.012		-0.017		0.020
		(0.029)		(0.033)		(0.024)		(0.019)		(0.020)
Constant	0.023	0.164	0.105**	0.138	-0.013	-0.094	-0.008	0.072	-0.018	-0.021
	(0.032)	(0.115)	(0.037)	(0.134)	(0.027)	(0.096)	(0.021)	(0.078)	(0.023)	(0.082)
N	606	606	606	606	580	580	602	602	603	603
R^2	0.000	0.009	0.014	0.016	0.002	0.005	0.000	0.014	0.000	0.007

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

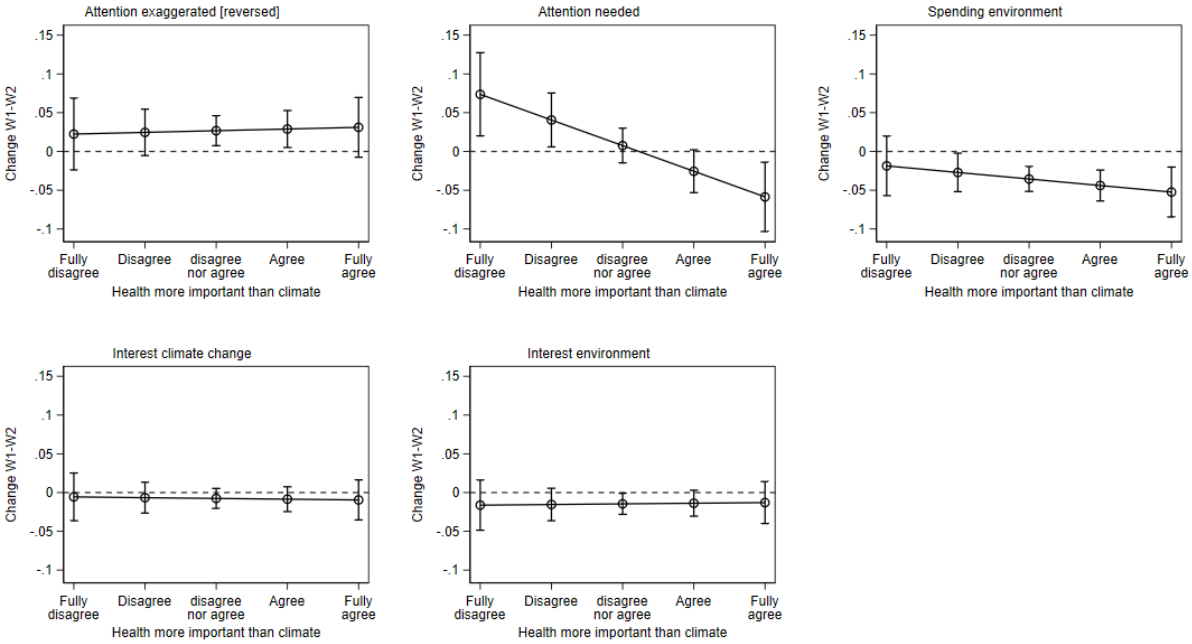

FIGURE B.3: Replication of Figure 3.1 for attitudes separately. Figure B.3 shows the predicted change of the dependent variable at different levels of concern about health. Calculations based on the models including control variables in Table B.

Table B.4
Replication of Table 3.3 for attitudes separately

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable: change in…	Attention exaggerated [reversed]		More attention environment needed		More spending environmental policy		Interest climate change		Interest protecting the environment	
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Postpone green deal to save economy	-0.006	-0.007	-0.030**	-0.032**	-0.018*	-0.020*	-0.007	-0.009	-0.015*	-0.016*
	(0.009)	(0.010)	(0.011)	(0.011)	(0.008)	(0.008)	(0.006)	(0.007)	(0.007)	(0.007)
Sex (ref.=male)		-0.012		-0.017		0.014		-0.019		0.001
		(0.025)		(0.029)		(0.021)		(0.017)		(0.018)
Age		-0.002		-0.000		0.001		-0.002+		-0.000
		(0.002)		(0.002)		(0.002)		(0.001)		(0.001)
Education: low										
Middle		0.025		-0.011		0.012		0.031		-0.025
		(0.045)		(0.053)		(0.037)		(0.031)		(0.032)
High		0.038		-0.023		-0.013		0.005		-0.040
		(0.045)		(0.053)		(0.037)		(0.030)		(0.032)
Income		-0.025+		-0.004		0.005		0.007		0.013
		(0.014)		(0.017)		(0.012)		(0.010)		(0.0[10])
School child in project		0.014		0.017		0.010		-0.017		0.018
		(0.028)		(0.033)		(0.024)		(0.019)		(0.020)
Constant	0.042+	0.192+	0.075*	0.121	0.007	-0.066	0.009	0.093	0.022	0.016
	(0.025)	(0.114)	(0.029)	(0.134)	(0.021)	(0.095)	(0.017)	(0.077)	(0.018)	(0.081)
N	602	602	602	602	576	576	598	598	599	599
R^2	0.001	0.009	0.013	0.015	0.009	0.014	0.002	0.017	0.008	0.014

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

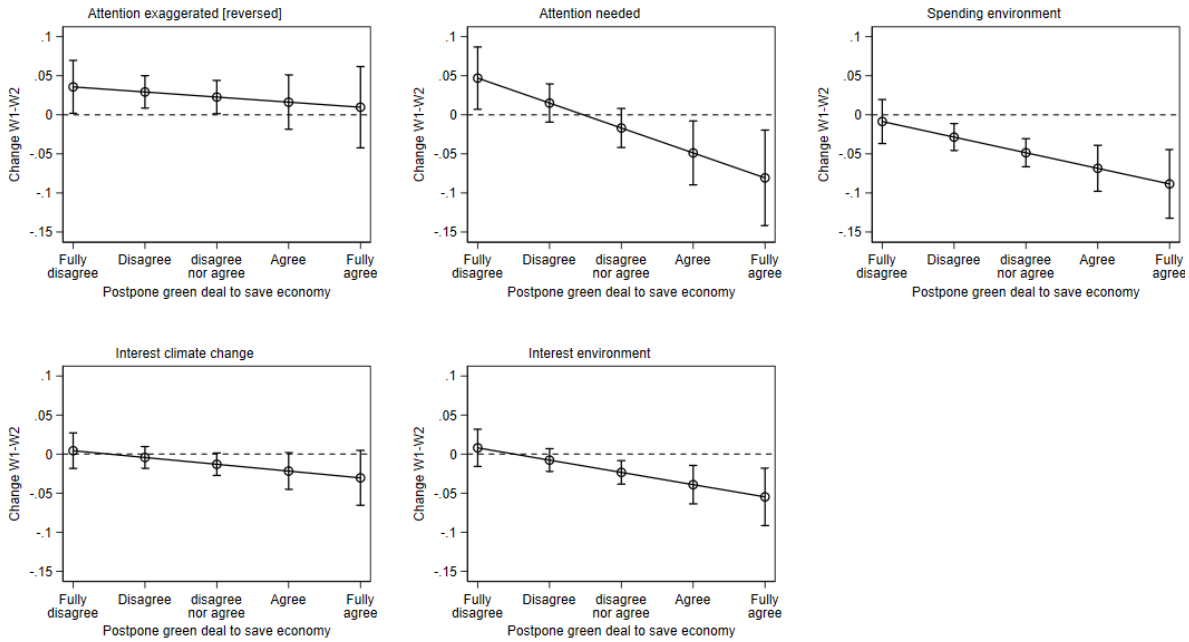

FIGURE B.5: Replication of Figure 3.1 for attitudes separately. Figure B.5 shows the predicted change of the dependent variable at different levels of concern about the economy. Calculations based on the models including control variables in Table B

Table B.6

Replication of Table 3.1 for behaviours separately

	Survey wave 1	Survey wave 2	Difference between waves
Sorting waste	0.934	0.944	0.010
Sorting organic waste	0.826	0.836	0.009
Reducing waste	0.831	0.850	0.019*

Note. Average scores on the different indicators in the two survey waves respectively. Paired t-test: significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

Table B.7

Replication of Table 3.2 for behaviours separately

Dependent variable: change in…	(1)	(2)	(3)	(4)	(5)	(6)
	Sorting		Sorting organic waste		Reducing waste	
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Health more important than climate	0.005	0.005	0.014	0.013	-0.003	-0.003
	(0.005)	(0.005)	(0.010)	(0.010)	(0.008)	(0.008)
Sex (ref.=male)		-0.025^{+}		-0.021		0.007
		(0.013)		(0.025)		(0.020)
Age		-0.002		-0.001		0.001
		(0.001)		(0.002)		(0.002)
Education: low						
Middle		0.026		-0.002		-0.004
		(0.024)		(0.045)		(0.037)
High		0.017		-0.018		-0.002
		(0.024)		(0.045)		(0.036)
Income		0.004		0.009		0.008
		(0.008)		(0.015)		(0.012)
School child in project		0.028^{+}		0.027		0.020
		(0.015)		(0.029)		(0.023)
Constant	-0.006	0.044	-0.037	0.014	0.030	-0.033
	(0.017)	(0.062)	(0.033)	(0.117)	(0.026)	(0.094)
N	602	602	592	592	595	595
R^2	0.001	0.019	0.003	0.008	0.000	0.003

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: $^{+}$: p<0.10; *: p<0.05; **: p<0.01; ***; p<0.001.

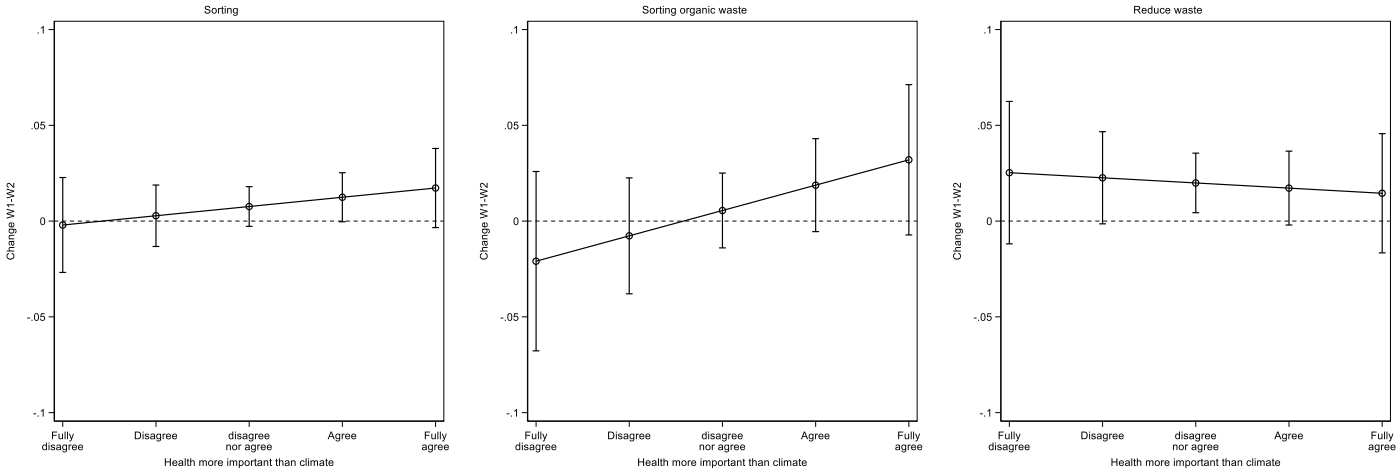

FIGURE B.8: Replication of Figure 3.1 for behaviours separately. Figure B.8 shows the predicted change of the dependent variable at different levels of concern about health. Calculations based on the models including control variables in Table B.

Table B.9

Replication of Table 3.3 for behaviours separately

Dependent variable: change in…	(1)	(2)	(3)	(4)	(5)	(6)
	Sorting		Sorting organic waste		Reducing waste	
	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)	B (s.e.)
Postpone green deal to save economy	0.006	0.006	0.007	0.006	0.007	0.009
	(0.005)	(0.005)	(0.010)	(0.010)	(0.007)	(0.008)
Sex (ref.=male)		-0.025+		-0.015		0.011
		(0.014)		(0.025)		(0.020)
Age		-0.002		-0.002		0.001
		(0.001)		(0.002)		(0.002)
Education: low						
Middle		0.028		0.007		-0.001
		(0.025)		(0.046)		(0.037)
High		0.019		-0.014		0.004
		(0.025)		(0.046)		(0.037)
Income		0.005		0.008		0.012
		(0.008)		(0.015)		(0.011)
School child took part in project		0.028+		0.028		0.020
		(0.016)		(0.029)		(0.023)
Constant	-0.005	0.040	-0.009	0.026	0.005	-0.077
	(0.014)	(0.063)	(0.026)	(0.117)	(0.020)	(0.092)
N	599	599	589	589	592	592
R2	0.002	0.020	0.001	0.006	0.001	0.005

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: $^{+}$: p<0.10; *: p<0.05; **: p<0.01; ***; p<0.001.

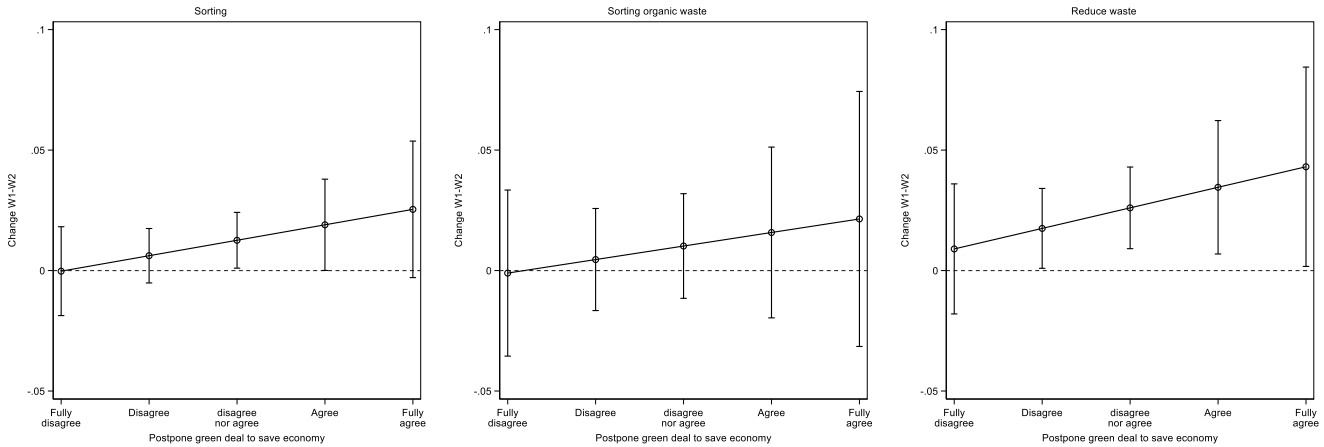

FIGURE B.10: Replication of Figure 3.2 for behaviours separately. Figure B.10 shows the predicted change of the dependent variable at different levels of concern about the economy. Calculations based on the models including control variables in Table B.2.

Appendix C: Controlling for format (filling in the survey online or offline)

Table C.1
Explaining changes in environmental concern with salience for health by controlling for format

	(1) Behaviour B (s.e.)	(2) Behaviour B (s.e.)	(3) Attitudes B (s.e.)	(4) Attitudes B (s.e.)
Health more important than climate	0.006	0.006	-0.008^{+}	-0.008^{+}
	(0.005)	(0.005)	(0.004)	(0.005)
Sex (ref.=male)		-0.013		-0.009
		(0.014)		(0.012)
Age		-0.001		-0.001
		(0.001)		(0.001)
Education: low				
Middle		0.012		0.016
		(0.025)		(0.021)
High		0.003		0.010
		(0.025)		(0.021)
Income		0.005		0.001
		(0.008)		(0.007)
School child took part in project		0.024		0.008
		(0.016)		(0.014)
Format (ref.=paper)		0.001		-0.005
		(0.011)		(0.009)
Constant	-0.007	0.009	0.019	0.048
	(0.018)	(0.065)	(0.015)	(0.055)
N	590	582	579	574
R^2	0.002	0.011	0.005	0.010

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

Table C.2

Explaining changes in environmental concern with salience of the economy by controlling for format

	(1) behaviour_change	(2) behaviour_change	(3) attitudes_change	(4) attitudes_change
Postpone green deal to save economy	0.006	0.006	-0.016***	-0.017***
	(0.005)	(0.005)	(0.004)	(0.005)
Sex (ref.=male)		-0.010		-0.008
		(0.014)		(0.012)
Age		-0.001		-0.001
		(0.001)		(0.001)
Education: low				
Middle		0.017		0.013
		(0.025)		(0.021)
High		0.007		0.002
		(0.025)		(0.021)
Income		0.006		-0.001
		(0.008)		(0.007)
School child took part in project		0.024		0.007
		(0.016)		(0.013)
Format (ref.=paper)		0.000		-0.007
		(0.011)		(0.009)
Constant	-0.003	0.001	0.032**	0.069
	(0.014)	(0.065)	(0.012)	(0.054)
N	587	579	576	571
R^2	0.003	0.011	0.022	0.029

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: *: p<0.05; **: p<0.01; ***: p<0.001.

Appendix D: Age distribution among participants

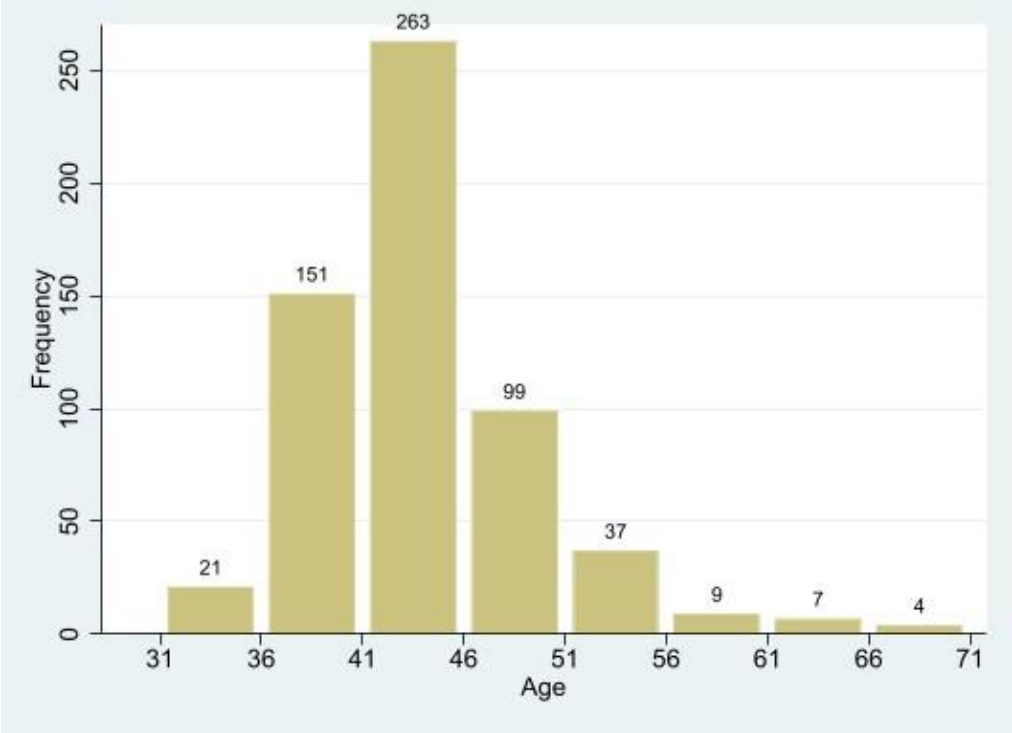

FIGURE D.1 Age distribution among participants

Appendix E: Controlling for occupational change and income change

Table E.1
Explaining changes in environmental attitudes with salience for health by controlling for occupation change and income change

	(1) Behaviours B (s.e.)	(2) Behaviours B (s.e.)	(1) Attitudes B (s.e.)	(2) Attitudes B (s.e.)
Health more important than climate	-0.005	-0.004	-0.011	-0.012*
	(0.006)	(0.006)	(0.005)	(0.005)
Sex (ref.=male)		-0.001		-0.005
		(0.013)		(0.012)
Age		-0.001		-0.001
		(0.001)		(0.001)
Education: low				
Middle		0.016		-0.004
		(0.033)		(0.026)
High		0.013		-0.008
		(0.032)		(0.026)
Income		-0.005		0.006
		(0.011)		(0.009)
School child in project		0.023		0.002
		(0.017)		(0.014)
Occupational change		0.040		0.073
(ref.=no change)		(0.038)		(0.033)*
Income change		-0.015		-0.004
(ref.=no change)		(0.019)		(0.015)
Constant	-0.004	0.070	0.029	0.054
	(0.020)	(0.080)	(0.016)	(0.064)
N	483	475	471	465
R^2	0.002	0.013	0.011	0.027

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: $^{+}$: p<0.10; *: p<0.05; **: p<0.01; ***: p<0.001

Table E.2

Explaining changes in environmental attitudes with salience for health by controlling for occupation change and income change

	(1) Behaviours B (s.e.)	(2) Behaviours B (s.e.)	(1) Attitudes B (s.e.)	(2) Attitudes B (s.e.)
Postpone green deal to save economy	0.003 (0.006)	-0.002 (0.006)	-0.016 (0.005)	-0.017*** (0.005)
Sex (ref.=male)		-0.011 (0.015)		-0.003 (0.012)
Age		-0.001 (0.001)		-0.001 (0.001)
Education: low				
Middle		0.024 (0.034)		-0.010 (0.027)
High		0.017 (0.034)		-0.020 (0.027)
Income		-0.004 (0.011)		0.006 (0.009)
School child in project		0.023 (0.017)		0.014 (0.014)
Occupational change (ref.=no change)		0.040 (0.038)		0.066* (0.032)
Income change (ref.=no change)		-0.015 (0.019)		-0.000 (0.015)
Constant	-0.006 (0.015)	0.068 (0.080)	0.032 (0.012)	0.059 (0.063)
N	480	472	468	462
R^2	0.001	0.013	0.024	0.039

Note. Entries are unstandardised OLS coefficients, standard errors in parentheses. Significance levels: $^{+}$: p<0.10; *: p<0.05; **: p<0.01; ***: p<0.001.

Appendix Chapter 4

Appendix A: Results for wave 2

The VALIES project is a panel study based on two waves (September 2019 and June 2020). As an additional robustness test, I also carried out analyses relying on the data from the second wave of the panel study to estimate the same models. Parents had to return the questionnaire by mail, together with their (e-mail) address if they wanted to participate in the second part of the study. In total 1009 parents 895 from the VALIES project agreed to participate in the second wave survey. In June 2020, the parents were contacted for the second wave, directly by e-mail or by surface mail to their home address, without involvement of schools. Again, a first reminder letter was sent four weeks later, and another four weeks later a second reminder was sent, with inclusion of a hard copy of the survey. The second sample consisted of 551 parents of the project. The final parent sample consisted of 551 participants who participated in both the first and the second wave. As expected, there was an overrepresentation of women in the sample, as is common in surveys starting within a school context. For this analyses, only full panel participants are included, i.e., parents and children that participated in both waves of the panel. The mean age of the parents was 45 years old (78 per cent female, 21 per cent male and 1 per cent other). In the second wave 740 pupils participated in the survey. Pupils were from 10 to 17 years old and the mean age of the children was 11 years old (52 per cent male, 47 per cent female, 1 per cent other). It is important to note that attrition for wave 2 was only slightly influenced by socio-economic status. 59.75 per cent of the full panel respondents had higher education credentials, compared to 55.03 per cent of the respondents who participated in the first wave only. Also for the second wave, the behavioural items are correlated for both parents (Cronbach's alpha=0.60) and children (Cronbach's alpha=0.75), although a Cronbach's alpha of .60 is lower than the .70 threshold typically desired, it can still be considered as a reasonable level or reliability so I could create one measure of sustainable behaviour as an index score for both parents and children. Also the attitudes are strongly correlated for both parents (Cronbach's alpha=0.84) and children (Cronbach's alpha=0.87), so I could again create one measure of sustainable attitudes as an index score for both parents and children. The average score on the attitudinal item (with a minimum score from 0 and a maximum score of 5) was 4.41 for children and 4.28 for parents with a significant difference ($p<0.05$) of 0.13 while the average score on the behavioural item (with a minimum score from 0 and a maximum score of 5) was 4.19 for children and 4.21 for parents, with no significant difference. The robustness of the analyses allows us to expand the generalizability of the results. The results of the analyses can be found in Table A.1, Table A.2 and Table A.

Table A.1: Replication of Table 4.1 including wave 2

Table A.1. Comparison of attitudinal means between parents and their children; congruence within the family in W1 and W2

Variable	**Description**	**Min.**	**Max.**	**N**	**M. (SD)**		**Differences between parents and children**	**Correlation within the family**	**N**	**M. (SD)**		**Differences between parents and children**	**Correlation within the family**
					Wave 1			Wave 1		Wave 2			Wave 2
					Children	Parents				Children	Parents		
Laws – ENV	I think that we need stricter laws and regulations to protect the environment.	1	5	851	3.975 (.950)	3.918 (.883)	.058	0.177***	227	4.123 (.918)	3.943 (.765)	.181*	0.174**
Measures – ENV	I think that is it important to take measures against problems which have to do with climate change.	1	5	852	4.322 (.804)	4.0076 (.0866)	.245***	0.150***	228	4.430 (.768)	4.118 (.790)	.311***	0.148**
Training – SOC	I think that everyone ought to be given the opportunity	1	5	840	4.315 (.811)	3.829 (.908)	.487***	0.056	228	4.338 (.742)	3.89 (.795)	.219***	0.096

	to acquire the knowledge, values and skills that are necessary to live sustainably.												
Future – SOC	I think that we who are living now should make sure that people in the future enjoy the same quality of life as we do today.	1	5	857	4.314 (.842)	4.377 (.686)	-.063	0.091*	227	4.370 (.795)	4.405 (.598)	-.035	0.083
Education – SOC	I think that women and men throughout the world must be given the same opportunities for education and employment.	1	5	851	4.638 (.597)	4.543 (.655)	.095*	0.082**	228	4.675 (.579)	4.640 (.533)	.035	0.091
Disposable – ECO	I think that companies have a responsibilit	1	5	853	4.408 (.786)	4.458 (.730)	-.060	0.129***	227	4.427 (.696)	4.533 (.619)	-.106	0.209**

	y to reduce the use of packaging and disposable articles.												
Poverty – ECO	I think it is important to reduce poverty.	1	5	850	4.428 (.712)	4.364 (.685)	.065*	0.091**	226	4.458 (.653)	4.44 (.611)	-.004	0.165*
Employees – ECO	I think that companies in rich countries should give employees in poor nations the same conditions as in rich countries.	1	5	850	4.275 (.852)	4.282 (.812)	-.007	0.037	228	4.412 (.766)	4.351 (.715)	.061	0.121
8-item index score		1	5	791	4.336 (.539)	4.240 (.539)	.095***	0.0205***	224	4.411 (.541)	4.281 (.031)	.129*	0.240***

Notes. M = mean, SD = standard deviation. Average scores on the different attitudinal items in the questionnaires. Paired sample t-tests: significance levels: *:$p<0.05$; **: $p<0.01$; ***: $p<0.001$

Table A.2: Replication of Table 4.2 including wave 2

Table A.2

Comparison of behavioural means between parents and their children; congruence within the family in W1 and W2

Variable	**Description**	**Min.**	**Max.**	**N**	**M. (SD)**		**Differences between parents and children**	**Correlation within the family**	**N**	**M. (SD)**		**Differences between parents and children**	**Correlation**
					Wave 1			Wave 1		Wave 2			Wave 2
					Children	Parents				Children	Parents		
Sorting food - ENV	I always separate food waste before putting out the rubbish when I have the chance.	1	5	864	4.291 (.830)	4.705 (.581)	-.414***	0.123***		4.384 (.708)	4.812 (.463)	-.428***	0.276***
Reduce waste - ENV	I have changed my personal lifestyle in order to reduce waste (e.g., throwing away less food or not wasting materials)	1	5	851	4.264 (.831)	4.293 (.843)	.026	0.120***		4.245 (.734)	4.430 (.702)	-.184*	0.196**
Sorting - ENV	I recycle as much as I can.	1	5	866	4.283 (.804)	4.706 (.581)	-.423***	0.221***	229	4.306 (.739)	4.812 (.463)	-.507***	0.063

Aidorganisations -SOC	I support an aid organization or environmental group.	1	5	844	3.719 (1.098)	3.499 (1.415)	.220***	0.110**	227	3.634 (1.036)	3.581 (1.365)	.053	0.276***
Respect mw - SOC	I show the same respect to men and women, boys and girls.	1	5	856	4.202 (.966)	4.643 (.535)	-.440***	0.028	228	4.680 (.513)	4.754 (.480)	-.075	0.073
Eth consuming - ECO	I avoid buying goods from companies with a bad reputation for looking after their employees and the environment	1	5	825	3.588 (1.138)	3.313 (1.060)	.275***	0.105**	229	3.812 (.989)	3.249 (1.023)	.563***	-0.006
6-item index score		1	5	795	3.994 (.673)	4.114 (.559)	-.120***	0.154***	224	4.193 (.529)	4.205 (.505)	-.011	0.264***

Notes. M = mean, SD = standard deviation. Average scores on the different behavioural items in the questionnaires. Paired sample t-tests: significance levels: *:$p<0.05$; **: $p<0.01$; ***: $p<0.001$

Table A.3

Correlations and means for index scores for wave 1 and wave 2

	Wave	N	Product-Moment correlations of children with parents	# of items in Scale	M (SD) children	M (SD) parents	Differences between parents and their children
Sustainability attitudes	1	791	0.205***	8	4.336 (0.539)	4.240 (0.539)	0.095***
Sustainability attitudes	2	224	0.233***	8	4.411 (0.541)	4.281 (0.081)	0.126**
Sustainability behaviour	1	795	0.154***	6	3.994 (0.673)	4.114 (0.559)	-0.120***
Sustainability behaviour	2	224	0.254***	6	4.193 (0.529)	4.205 (0.505)	-0.011

Note: The correlations are based on factor scores. The higher the scale value, the more environmental the respondent
Note: Significance levels: * p<.05; ** p<.01; *** p<.001

Appendix Chapter 5

Appendix A

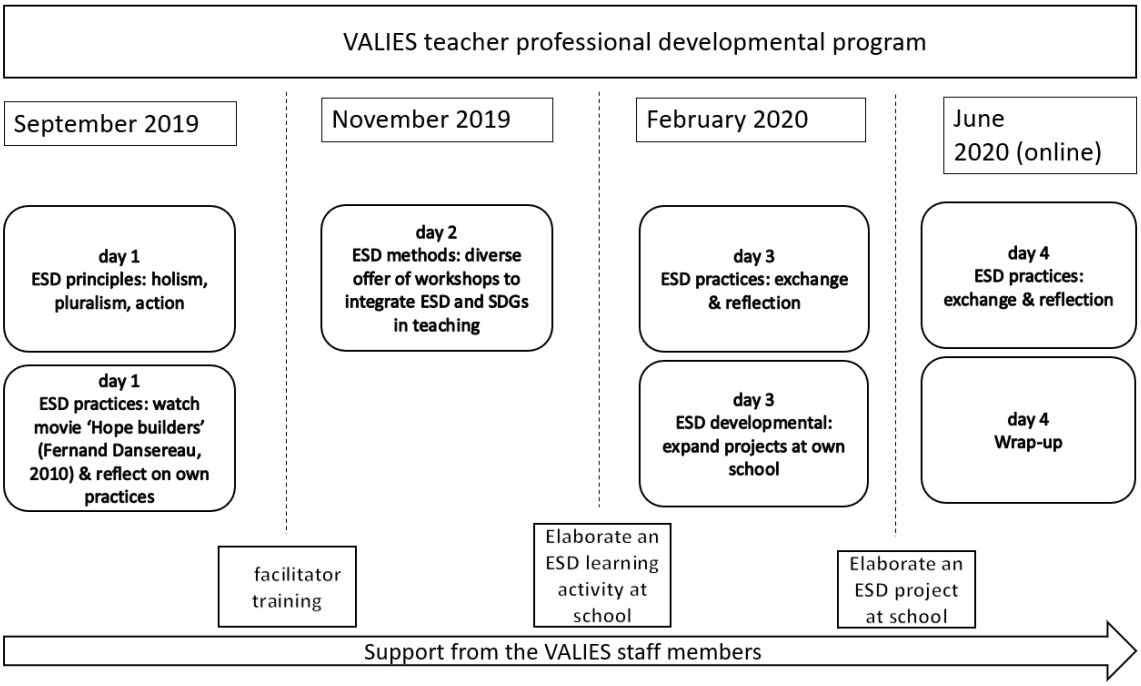

Figure A.1: Implementation of the teacher professional developmental program

Appendix Chapter 7

Appendix A. Question wording of the variables included in the analyses

Left-right identification

Sometimes, in politics, people talk about "the left" and "the right". Where would you place yourself on this scale from 0 (left) to 10 (right)?

Vote choice

If there were federal elections next week, which party would you vote for?

1. Open VLD (Liberals)
2. N-VA (Flemish Nationalists)
3. Groen (Greens)
4. CD&V (Christian-Democrats)
5. PvdA (radical left)
6. Vlaams Belang (radical right)
7. Vooruit (Socialists)
8. Blank vote/invalid vote
9. Other party (fill in)

Anti-immigrants attitudes

The attitudes were measured using the answers to the following three statements:

1. Immigrants are good for the Belgian economy
2. Immigrants threaten our culture (reversed)
3. Immigrants cause increased crime rates in Belgium (reversed)

Respondents could indicate for each statement whether they fully agreed, rather agreed, agreed nor disagreed, rather disagreed or fully disagreed. We construct the variable by reversing the items and adding up the answers to the different items, and dividing by three. Higher scores indicate a more negative attitude towards immigrants.

Gender

Sex of the respondent, code 0 for male respondents, code 1 for female respondents

Age

Age of the respondent at the moment of filling in the questionnaire

Educational level

Educational level of the teacher (highest educational attainment of the teacher).

The variable distinguished respondents with no or lower secondary education, secondary education, and tertiary education. We recoded this variable into 0=other (lower than higher education bachelor), 1 = community college (higher education bachelor), 2 = university (higher education master)

1. Lower secondary education (1st or 2nd grade) or lower
2. Higher secondary education (until 3th grade)
3. Higher education short cycle (until 3th grade)
4. Higher education bachelor

5. Higher education master
6. Other (fill in)

Type of school

In which type of school do you mainly teach?

1. Public schools
2. Private schools
3. All others

Teaching subject

Which school subject do you mainly teach?

1. Languages (Dutch, French, English, German, Greek, Latin,…)
2. Humanities (history, social sciences, …)
3. Mathematics
4. Sciences (physics, chemistry, biology)
5. Religion, or other religious or secular subjects
6. Other subjects (music, sports, vocation subjects,…)
7. Other (fill in)

We recoded this variable into:
1. STEM (including biology, sciences, geography, chemistry, physics, computer science, economics, and mathematics)
2. Social Science (including social science, religion and history)
3. Languages
4. Vocational and practical subjects
5. Other subjects (physical training, philosophy, music, arts, and psychology)
6. Other

Open classroom climate

Every opinion in the classroom can be expressed, even extreme or radical.

Respondents could indicate whether they (1) fully agreed, (2) rather agreed, (3) agreed nor disagreed, (4) rather disagreed or (5) fully disagreed. The item was reversed so that a higher score indicates a more open classroom climate.

Neutrality in education

It is the task of the teacher to remain neutral in his/her lessons.

Respondents could indicate whether they (1) fully agreed, (2) rather agreed, (3) agreed nor disagreed, (4) rather disagreed or (5) fully disagreed. The item was reversed so that a higher score indicate that teachers agree more with the statement.

Communicating political preferences

My students know my political preferences.

Respondent could indicate whether they (1) fully agreed, (2) rather agree, (3) agreed nor disagreed, (4) rather disagreed or (5) fully disagreed. The item was reversed so that a higher score indicate that teachers agree more strongly with the statement.

Appendix B

Table B.1.

Descriptive statistics of independent variables.

Variable	Freq. teachers	Percent	Mean (Std.dev).	Freq. Flemish population	Percent	Mean (Std. Dev)	Freq. Flemish higher educated population	Percent	Mean (Std. Dev)
Gender									
Female	551	66.39		517	47.69		227	47.00	
Male	227	33.37		567	52.31		256	53.00	
Age			43.62			52.93 (17.11)			48.25 (15.88)
Teaching subject									
STEM	208	25.12							
Social Sciences	167	20.17							
Languages	192	23.19							
Vocational	93	11.23							
Other subjects	181	21.86							
School type									
Private	594	71.57							
Public	233	28.07							
Educational level									
Other	63	7.59		601	57.02		/	/	
Community level	444	53.49		233	22.11		232	51.43	
University	311	37.47		220	20.87		220	48.56	
Open classroom climate (reversed)			3.60 (1.04)						
Neutrality in education			2.21 (1.01)						

Appendix C. Factor analysis for attitudes for immigrants

Table C.1.

Factor analysis of attitudes for immigrants

	Factor
Item	(Anti-immigrants)
Anti-immigrants sentiments	
Immigrants are good for the Belgian economy (reverse)	0.597
Immigrants threaten our culture	0.764
Immigrants cause increased crime rates in Belgium	0.745

Appendix D. Frequencies for Neutrality of the teacher in education

Table D.1.

Frequencies for neutrality in education

	Frequencies	Percentage
Item: It is the task of the teacher to remain neutral in his/her lessons.		
Fully agreed	199	24.24
Rather agreed	392	47.75
Agreed nor disagreed	103	12.55
Rather disagreed	113	13.76
Fully disagreed	14	1.71

Appendix E. Frequencies for communicating political preferences

Table E.1.

Frequencies for communicating political preferences

	Frequencies	Percentage
Item: My students know my political preferences		
Fully agreed	12	1.87
Rather agreed	49	7.64
Agreed nor disagreed	76	11.86
Rather disagreed	131	20.44
Fully disagreed	373	58.19

Appendix F. Robustness test for the multivariate regression explaining ideological identification for teachers only teaching one subject

Table F.1.

Robustness test for the multivariate regression explaining ideological identification for teachers only teaching one subject.

	Model 1
Anti-immigrant attitudes	1.216***
	(0.067)
Open classroom climate	0.137***
	(0.052)
Neutrality in education	0.124**
	(0.055)
Political preferences	-0.190***
	(0.056)
Gender (ref.=male)	-0.106
	(0.122)
Age	0.008
	(0.005)
School type (ref.=private)	-0.380***
	(0.121)
Education: other education (ref.)	
Education: Community college	0.253
	(0.213)
Education: University	0.259
	(0.226)
STEM	-0.130
	(0.341)
Social sciences	0.100
	(0.343)
Languages	-0.053
	(0.342)
Practical	0.166
	(0.365)
Other subjects	0.059
	(0.342)
Constant	0.205
	(0.569)
Observations	753
R-squared	0.386

Note: *** p<0.001, ** p<0.05, * p<0.01. Entries are unstandardized OLS coefficients with standard errors between brackets.

Appendix G. Results of the multinomial logistic regression models

Table G.1

Multinomial logistic regression analysis explaining the electoral preferences (odds ration)

	Open_VLD	N-VA	Groen	PVDA	Vlaams Belang	Vooruit
Anti-immigrant attitudes	0.0223	1.164***	-0.973***	-0.699**	3.459***	-0.867***
	(0.211)	(0.213)	(0.191)	(0.331)	(0.572)	(0.214)
Open classroom climate	0.231	0.241*	0.115	0.135	0.564*	0.157
	(0.145)	(0.137)	(0.123)	(0.224)	(0.303)	(0.142)
Neutrality in education	0.254	0.234	0.0791	-0.169	0.285	0.0287
	(0.162)	(0.154)	(0.130)	(0.225)	(0.336)	(0.149)
Political preferences	-0.165	-0.170	0.178	0.413*	-0.105	0.0177
	(0.168)	(0.161)	(0.126)	(0.213)	(0.375)	(0.149)
Gender (ref.=male)	0.226	-0.175	-0.256	-0.341	-0.377	-0.214
	(0.360)	(0.325)	(0.296)	(0.520)	(0.673)	(0.335)
Age	-0.0289*	-0.0208	-0.0305**	-0.0287	-0.0213	-0.0342**
	(0.0152)	(0.0142)	(0.0130)	(0.0238)	(0.0308)	(0.0149)
School type (ref.=private)	0.795**	0.201	0.250	1.966***	0.355	0.982***
	(0.346)	(0.349)	(0.326)	(0.498)	(0.710)	(0.340)
Education: other education (ref.)						
Education: Community college	1.445*	0.716	0.688	0.852	-0.317	-0.474
	(0.834)	(0.567)	(0.597)	(1.152)	(0.931)	(0.550)
Education: University	1.661*	0.510	0.797	0.431	-0.563	-0.492
	(0.857)	(0.605)	(0.613)	(1.215)	(1.026)	(0.580)
STEM	-0.738	0.298	-0.653	-1.127	-1.160	0.226
	(0.686)	(0.597)	(0.570)	(0.955)	(1.463)	(0.601)
Social Sciences	-0.488	0.586	-0.470	-1.605	-2.101	0.100
	(0.702)	(0.602)	(0.568)	(1.048)	(1.568)	(0.616)
Languages	-0.0377	0.919	-0.0995	-0.107	-1.777	0.576
	(0.710)	(0.623)	(0.581)	(0.969)	(1.720)	(0.628)
Practical	0.679	1.259*	-0.931	0.586	-1.840	1.333*
	(0.801)	(0.725)	(0.814)	(1.056)	(1.664)	(0.722)

Other subjects	0.409	1.009	0.0278		-0.321	-1.332	0.636
	(0.742)	(0.675)	(0.626)		(1.041)	(1.607)	(0.682)
Constant	-2.127	-5.584***	2.560**		-0.0463	-14.49***	2.399*
	(1.594)	(1.476)	(1.249)		(2.294)	(3.757)	(1.386)
Observations	625	625	625	625	625	625	625

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Appendix A: Outcome variables used in the analyses

Tolerance: The attitudes (tolerance for immigrants) were measured using the answers to the following four statements:

1)Immigrants are good for the Belgian economy (reversed)

2)Immigrants threaten our culture

3)Immigrants cause increased crime rates in Belgium

4)Immigrants made a better place of our country (reversed)

Respondents could indicate for each statement whether they fully agreed, rather agreed, agreed nor disagreed, rather disagreed or fully disagreed. We construct the variable by adding up the answers to the different items, and dividing by four. Higher scores indicate a higher frequency or greater applicability (M=2.88; SD=.69).

Appendix B: Control variables used in the analyses

Education level: Educational level of the teacher. The variable distinguished respondents with no or lower secondary education (reference category), secondary education, and tertiary education. We recoded this variable into 1 = master degree or higher and 0 = bachelor degree or lower

Education track: In which education track do you teach?

1. General education 2. Technical education 3. Vocational education 4. Artistic education

We recoded this variable into 1 = general education and 0 = all other forms

Appendix C: Factor analysis of tolerance

Table C.1

Factor analysis of tolerance.

	Factor
Item	1 (Tolerance)
Tolerance for immigrants	
Immigrants are good for the Belgian economy	0.629
Immigrants threaten our culture [reverse]	0.761
Immigrants cause increased crime rates in Belgium [reverse]	0.746
Immigrants made a better place of our country	0.644

Appendix D: Frequencies for dependent variable

Table C.2

Frequencies of tolerance for immigrants among secondary school teachers.

	Fully agree	Rather agree	Agree/nor disagree	Rather disagree	Fully disagree	N
						Frequency %
Immigrants are good for the Belgian economy	5.28	28.71	46.87	15.58	3.56	815
Immigrants threaten our culture	3.68	17.89	22.55	36.15	19.73	816
Immigrants cause increased crime rates in Belgium	3.93	27.24	31.04	27.73	10.06	815
Immigrants made a better place of our country	4.79	27.48	52.02	13.50	2.21	815

Note. Survey question: "Do you agree or disagree with the following items towards immigrants in our country?" The number of observations for the variables vary due to some missing data.

Appendix Chapter 8

Appendix A. Question wording of the variables included in the analyses

Frequency of dialogue in the classroom

The respondents report on how often they conduct dialogue with the pupils from their class on the following socio-political issues:
1. Migration and ethnic-cultural diversity (for example refugee problems):
never – sometimes – often – very often

2. Ideological diversity (for example wearing religious symbols, religious extremism):
never – sometimes – often – very often

3. Homosexuality:
never – sometimes – often – very often

4. Gender, sexism (for example sexists insults):
never – sometimes – often – very often

Allowing different opinions in the classroom
Every opinion in the classroom can be expressed, even extreme or radical.

Respondents could indicate whether they 1 (fully agreed), (2) rather agreed, (3) agreed nor disagreed, (4) rather disagreed or (5) fully disagreed. The item was reversed so that a higher score indicates a more open classroom climate.

Self-efficacy beliefs in dealing with societal conflicts and tensions in the classroom

1) dealing with religious diversity in the classroom
2) dealing with Islamophobia in the classroom
3) dealing with antisemitism in the classroom
4) dealing with ethnic cultural diversity in the classroom
5) dealing with homophobia in the classroom
6) dealing with LGBT in the classroom
7) dealing with sexism in the classroom

All respondents were asked to indicate how competent they feel by dealing with the different societal conflicts in the classroom. They could indicate whether they feel very competent, rather competent, less competent or not competent at all. The order of the items were reversed. I construct the variable by adding up the answers to the different items, and dividing by seven. A higher score indicates a higher frequency or greater applicability.

Teaching subject

Which school subject do you mainly teach?

1. Languages (Dutch, French, English, German, Greek, Latin, …)
2. Humanities (history, social courses SEI (sociaaleconomichsche initatie), PAV (project algemene vakken), gedragswetenschappen,…
3. Mathematics
4. Sciences (fysics, chemistry, biology)
5. Religion, Islam or other religious subjects
6. Other subjects (music, sports, vocation subjects,…)
7. Other (fill in)

We recoded this variable into:
0 = STEM related courses including biology, sciences, geography, chemistry, physics, computer science, economics, and mathematics
1 = Non-STEM subjects:
Social Science (including social science, religion and history)
Languages
Vocational and practical subjects
Other subjects (physical training, philosophy, music, arts, and psychology)

Educational level

Educational level of the teacher (highest educational attainment of the teacher)

The variable distinguished respondents with no or lower secondary education, secondary education, and tertiary education. I recoded this variable into 0=other (lower than higher education bachelor), 1=community college (higher education bachelor), 2=university (higher education master)

1. Lower secondary education (1st or 2nd grade) or lower
2. Higher secondary education (until 3th grade)
3. Higher education short cycle (until 3th grade)
4. Higher education bachelor

5. Higher education master
6. Other (fill in)

Education track

The respondents were asked in which education track they teach. They could indicate general education, technical education, vocational education, artistic education or another education track. I recoded this variable into 1 = general education and 0 = all other forms.

Gender

Sex of the respondent, code 0 for female respondents, code 1 for male respondents

Age

Age of the respondent at the moment of filling in the questionnaire

Appendix B. Frequencies for dialogue in the classroom

Table B.1
Frequencies for dialogue on socio-political issues in the classroom

	Frequencies	Percentage
Item: How often in dialogue with the pupils from your class about the following topics:		
1. migration and ethnic-cultural diversity		
Never	170	20.78
Sometimes	495	60.51
Often	125	15.28
Very often	28	3.42
2. Ideological diversity		
Never	273	33.41
Sometimes	424	51.90
Often	85	10.40
Very often	35	4.28
3. Homosexuality		
Never	202	24.79
Sometimes	501	61.47
Often	97	11.90
Very often	15	1.84
4. Gender, sexism		
Never	141	17.28
Sometimes	512	62.75
Often	137	16.79
Very often	26	3.19

Appendix C. Frequencies for different opinions in the classroom

Table C.1
Frequencies for different opinions in the classroom

	Frequencies	Percentage
Item: Every opinion in the classroom can be expressed, even extreme or radical		
Fully agreed	140	17.14
Rather agreed	387	47.37
Agreed nor disagreed	136	16.65
Rather disagreed	131	16.03
Fully disagreed	23	2.82

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