Department of Public Policy
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BEHIND PRO-ENVIRONMENTAL BEHAVIOURS

COMPARING THE PERCEPTIONS OF STUDENTS FROM DEMOCRATIC AND NON-DEMOCRATIC SCHOOLS

By

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Submitted to

Central European University

Department of Public Policy

In partial fulfilment for the degree of Master of Public Administration

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Vienna, Austria

2023

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DocuSign Envelope ID: 3F567F99-EF4B-414D-BAC7-061D00D7D531

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Abstract

The study of human behaviour is dominant in the environmental scholarship because of its potential impact towards catalysing pro-environmental behavioural changes. The influential self-determination theory (SDT) focuses on intrinsic and extrinsic motivations that are determined by the level of autonomy support in one's social and educational environment. Former applications of the framework produced valuable insights about the factors that affect motivation; however, they are overwhelmingly quantitatively oriented, which prevents them from eliciting the underlying patterns, perceptions and assumptions regarding environmental motivation and behaviour. The qualitative analysis of tacit knowledge is essential to the comprehensive understanding of pro-environmental behaviours and developing effective environmental educational policies. This paper fills this gap by conducting focus group research comparing the environmentalism-related perceptions of secondary school students from two educational environments with different levels of autonomy support. The thematic analysis reveals that children are pessimistic about the effectiveness of environmental protection. In comparison, students with low autonomy-support have weaker in-depth understanding about environmental processes and cause-and-effect relationships. They perceive the world of environmental protection as difficult to navigate, which diminishes their intrinsic motivation to approach sustainability pro-actively. Furthermore, they are more frustrated with the perceived hypocrisy of environmental awareness programs and authority figures.

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1. INTRODUCTION

In the last four decades, the dominance of environmentalism has significantly expanded in the domains of public and academic discourse. Since the scientific community reached the consensus that environmental destruction is the direct consequence of human activities (Pelletier, Baxter and Huta 2011), a lot of attention has been dedicated to the study of behavioural change (see: Stevenson et al. 2013; Kyburz-Graber 2013). The interdisciplinary scholarship experienced a significant paradigm shift at the end of the 20th century. The initial scientific framework operated with the assumption that increasing environmental knowledge is the primary key towards more pro-environmental practices (Stevenson et al. 2013). This view was challenged when research findings revealed significant gaps between awareness and practical commitment to sustainability (Pelletier, Baxter and Huta 2011). The focus shifted towards the in-depth understanding of the complex mechanisms that influence human behaviour, including cognitive, emotional, ideological and cultural processes (Kurisu 2015). Psychology and motivational studies are increasingly influential (Pelletier, Baxter and Huta 2011), because the contemporary environmentalism literature acknowledges that pro-environmental activities are embedded in the personal perceptions and beliefs of people (Stevenson et al. 2013).

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While there are several competing approaches, the self-determination theory of Deci and Ryan (1985) remains one of the most successful frameworks to explain environment-related behavioural patterns. The authors argue that a person's social and educational environment might enhance, maintain or diminish the perceived satisfaction of their basic psychological needs, as in autonomy, competence and connectedness. Higher level of support feeds one's intrinsic motivation, but low level of support replaces it with extrinsic motivation, which generally leads to sub-optimal behavioural outcomes (Deci and Ryan 1985). Extrinsic

motivation has a negative effect on performance, persistence and well-being (Deci and Ryan 2000, Pelletier et al. 1996).

Due to its close affiliation with educational programs and awareness raising initiatives, the primary objective of environmental behavioural studies has always been to change human behaviour toward a more sustainable direction. To achieve this aim, the field overwhelmingly focuses on the quantitative examination of factors that determine pro-environmental behaviours (PEBs). This approach remains dominant within the applications of the self-determination theory as well. These tests produced a meaningful amount of valuable results; however, they fail to capture *how* the aforementioned psychological needs contribute to intrinsic motivation, how the research subjects perceive pro-environmental behaviours and how they make sense of their experiences with environmentalism. It is challenging to inspect these latent patterns with quantitative methodologies, but they would uncover necessary information about how environmental education can succeed. Consequently, it is necessary to complement the literature with qualitative orientation in order to build more comprehensive and in-depth understanding of the field.

In the present research paper I explore the application of the self-determination theory from an underrepresented approach, which elicits tacit knowledge that is essential to designing effective environmental educational programs. I apply focus group research method to analyse how Hungarian democratic and non-democratic school students perceive environmentalism and pro-environmental behaviours. The two schools provide different levels of autonomy support; therefore, I inspect the contrast between the experiences of the children in a comparative framework. After reviewing the literature of environmental behaviours within the self-determination theory framework, my initial expectation was that democratic school students would express higher level of perceived responsibility as well as competence regarding

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environmental protection, because the higher autonomy support of their environment encourages their contributions towards their community and environment.

The discussion uncovered an overwhelmingly pessimistic approach towards the effectiveness of environmental protection. The children argued that there is a significant trade-off between pro-environmentalism and personal benefits, and they are frustrated that their sacrifices are undermined by the environmental harms that other people cause. In comparison, the democratic school students think about sustainability in a more creative and pro-active way, while the non-democratic school students perform consistently higher in basic habits, for instance, switching off the lights or selective waste collection. Another notable contrast was that non-democratic school students expressed more intense frustration towards the perceived environmental hypocrisy of authority figures that focus on awareness raising instead of implementing effective policies.

The inductive thematic analysis produced valuable additions to the scholarship. The results support the theoretical assumption that human nature is inherently curious about its surroundings and fitting for self-led discovery and learning (Deci and Ryan 2011), and that the self-determination theory remains competent for the explanation of pro-environmental behaviours (Pelletier, Baxter and Huta 2011). The findings also prove that the qualitative exploration of the framework can uncover valuable tacit knowledge that is difficult to attain with quantitative research methods. As a complement to the quantitative findings that focus on the factors determining environmental motivations, qualitative analysis can reveal how people make sense of these influences, and why they react in certain ways.

The paper is structured as follows. Chapter 2 presents the emergence of motivational studies within the literature of environmental behaviour, introduces the self-determination theory and provides a brief literature review about the former applications of the framework. Chapter 3

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describes the methodology and procedures of the present research. Chapter 4 reviews what the focus groups analysis revealed about the environmentalism-related perceptions and experiences of children. Chapter 5 concludes the paper.

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2. THEORETICAL FRAMEWORK

2.1. Environmentalism and motivation

In 1987, the United Nations Brundtland Commission published an official report, which defined environmental sustainability as as meeting the present needs "without compromising the ability of future generations to meet their own needs" (UN n.d.a). The statement was shortly followed by the United Nations Conference on Environment and Development (UN n.d.b). Kaplan and Madjar (2015) describe this era as characterized by the recognition of human-made causes behind environmental issues, which was accompanied by increasing awareness of sustainability. According to the authors, governments and schools started to develop environmental educational programs and curricula. Pelletier, Baxter and Huta (2011) argue that the international scientific community reached a major consensus that human activities are directly responsible for the climate change and further environmental issues, including the reduction of clean water supplies, the depletion of the Earth's ozone layer, air pollution, and the clearing of tropical rain forests. Therefore, the shared aim of the scientific and educational initiatives was to achieve behavioural change (Stevenson et al. 2013; Kyburz-Graber 2013).

Sustainability is an inherently interdisciplinary arena because its core roots and consequences influence various fields including environmental and natural sciences, education, psychology and sociology (Stevenson et al. 2013). In this framework , the term *environment* refers to the global environment, natural environment and water environment as public goods (Kurisu 2015). The definition and scope of pro-environmental behaviours (PEBs) is contested. For instance, more narrow approaches understand pro-environmental behaviours as the conservation of the environment, while some argue for a wider concept such as cultivating environmental consciousness (Kurisu 2015).

With regards to orientation, Kurisu (2015) distinguishes two main directions: purpose-oriented and fact-oriented. The author describes the purpose-oriented approach as actions motivated by contributing to environmental conservation and reducing environmental burdens. She defines the fact-oriented approach as actions that contribute to environmental conservation without deliberate purpose to do so. Given the motivation-centred framework of the present paper, it applies the purpose-oriented approach to identify pro-environmental behaviours. Kurisu (2015) highlights that it can be challenging to identify the actual reduction of negative impacts and increase of positive impacts in practice. She argues that one should estimate all environmental aspects of manufacture, transport, use and disposal, including water consumption greenhouse gases and air pollutants for accurate evaluation. To reduce the complexity of the issue, the author proposed a functional approach that focuses on more simple, transparent environmental effects, such as waste generation.

Initially, the literature on pro-environmental behaviours assumed that increasing environmental knowledge would lead to more sustainable behaviour (Stevenson et al. 2013). However, studies found significant gaps between problem awareness and behavioural patterns (Pelletier, Baxter and Huta 2011). While environmental knowledge and attitudes are relevant factors, their association with pro-environmental behaviours decreases significantly when the behaviour is more costly or difficult (Pelletier, Baxter and Huta 2011). Moreover, long-term maintenance was found to be challenging even after the successful adaptation of a sustainable habit (Kaplan and Madjar 2015).

Consequently, researchers recognized environmental learning and behaviour to be more complex phenomena, which might be affected by various sociodemographic factors including gender, age, education, and income beside cognitive, emotional, ideological and cultural processes (Kurisu 2015). This realization catalysed a paradigm shift towards more

empowering, interpretative and critical research (Kaplan and Madjar 2015), which was also influenced by the dissemination of constructivist theories (Gough 2013). In this framework, pro-environmental behaviours are viewed as embedded in people's personal worlds, belief systems and subjective perceptions rather than as isolated actions (Kaplan and Madjar 2015). This complexity challenges educators (Kaplan and Madjar 2015), which increased the recognition of psychology and motivational studies (Pelletier, Baxter and Huta 2011). While the eventual priority remains increasing pro-environmental behaviours, current research focuses on understanding the optimal conditions and support mechanisms, which allow people to become voluntarily and proactively involved with sustainability (Stevenson et al. 2013).

Nevertheless, Pelletier, Baxter and Huta (2011) question whether the field is moving forward: the literature is incoherent with various contradictory findings, disparities, conceptual differences and gaps. In order to tackle environmental problems effectively, the authors argue for a more focused, functional theory-based approach that is guided by shared agreements about how to conceptualize the issues, design research and interventions and support pro-environmental behavioural change. According to the authors, contemporary scholarship should apply the self-determination theory (Deci and Ryan 1985) as an academic and educational framework to synthetize the interdisciplinary research activities (see also: Kaplan and Madjar 2015).

2.2. Self-determination theory

The self-determination theory (SDT) focuses on fundamental psychological needs (autonomy, competence and connectedness) and how one's social and educational environment can influence their perceived satisfaction (Deci and Ryan 1985; 2011; Vallerand, Pelletier and Koestner 2008). Deci and Ryan (2000) define motivation as "feeling energized or activated toward an end" (54). The authors distinguish different levels and orientations of motivation.

Levels refer to strength, while orientations refer to the various types of reasons and aims that induce action (Deci and Ryan 2000). Motivation is described as a continuum of relative autonomy, where the five subtypes (see: Deci and Ryan 2000, 61, Figure 1.) range from controlled toward autonomous (Deci and Ryan 2011). The authors identify the two endpoints of the scale as extrinsic and intrinsic motivation (excluding amotivation, the lack of intention to act) (Deci and Ryan 2000). Consequently, the higher one's perceived autonomy is, the closer they are to fully intrinsic motivation.

Extrinsic motivation occurs whenever an activity is performed to satisfy an externally exposed demand, pressure or obtain a separable reward (Deci and Ryan 2000). According to the authors, it is a typically controlled and alienated experience, while intrinsic motivation aligns with the human nature's inherent curiosity, exploration, playfulness and readiness to learn (Deci and Ryan 2000; 2011). Intrinsic motivation is described as engaging in an activity that is self-endorsed and holds inseparable value, challenge or novelty for the individual, and thereby its performance causes innate satisfaction (Deci and Ryan 2000). As a result, traditional incentives might have counter-effective impacts because they undermine intrinsic motivation by creating extrinsic ones (Deci and Ryan 2011). For instance, threat of punishment, monetary rewards and competition were found to diminish intrinsic motivation (see: Deci et al. 1981; Deci et al. 1999). However, the autonomy-continuum is not fixed, Deci and Ryan (1985) highlight that one might internalize or integrate certain (initially extrinsic) values and aims, which increases their perceived autonomy.

The self-determination theory operates with the premise that more autonomous motivation is qualitatively superior because it influences performance, persistence and well-being positively (Deci and Ryan 2000, Pelletier et al. 1996). This assumption has also been supported empirically. For instance, Ryan and Connell (1989) found that more autonomous motivation

was positively associated with effort, enjoyment, felt competence, and positive coping. Similarly, Williams et al. (2006) found that intrinsic motivation is more likely to catalyse and maintain beneficial lifestyle changes.

Deci and Ryan (1985) presented the cognitive evaluation theory (CET) as a sub-theory exploring the determinants of motivation. The authors identify three basic psychological needs – competence, autonomy and relatedness – that need to be satisfied to experience intrinsic motivation. Competence is described as a sense of self-efficacy (Deci and Ryan 2000). Autonomy, or internal perceived locus of causality (de-Charms 1968) refers to one's perception that their behaviour is self-determined (Deci and Ryan 2011). Relatedness means connectedness and the experience of being respected and cared for (Deci and Ryan 2000).

Deci and Ryan (2000) argue that the individual's social and educational environment (such as classroom or household) might sustain, amplify or undermine the satisfaction of the aforementioned psychological needs. Consequently, the satisfaction of basic needs is a mediator between the context that the individual is embedded in and their motivation: the environment influences the motivation by supporting or thwarting the psychological conditions (Deci and Ryan 2000; Pelletier et al. 1998). The social or educational environment can be categorized as autonomy-supportive or controlling, based on its general interpersonal ambiance (Deci and Ryan 2011). Autonomy support is described as actively reaffirming one's capacity to be self-initiating (Deci and Ryan 2000). Autonomy-supportive context is usually associated with higher competence and relatedness as well as acknowledging people's perceptions, encouraging exploration and providing choice (Deci and Ryan 2011). Motivation is in constant interaction with the individual's environment. For instance, positive feedback enhances autonomy and intrinsic motivation only when embedded in autonomy-supportive context (see: Deci, Koestner and Ryan 1999; Zuckerman et al. 1978; Deci and Ryan 2011). Despite the

overwhelming focus on immediate contextual factors, Deci and Ryan (2000) highlight that the satisfaction of psychological conditions is also influenced by the individual's inner resources that determine their own sense autonomy, competence and relatedness.

2.3. Trends in the literature of pro-environmental behaviours within the self-determination theory framework

After proposing the self-determination theory as a comprehensive framework for the contemporary environmental behavioural scholarship (see: Chapter 2.1.), Pelletier, Baxter and Huta (2010) developed a measurement tool titled the *Motivation Toward the Environment Scale* (MTES). It applies the various motivational types of the self-determination theory in the environmental context (Kaplan and Madjar 2015; Pelletier et al. 1998). The scale has been successful showing correlation between autonomous motivation and various pro-environmental behaviours, including recycling and conservation behaviours (Pelletier et al. 1998), performing more difficult pro-environmental behaviours (Green-Demers, Pelletier and Ménard 1997) and self-led inquiry about environmental risks (Séguin, Pelletier and Hunsley 2006) (see Kaplan and Madjar 2015 for literature review). However, it must be noted that to gain deeper understanding of the field, one must also consider alternative frameworks including the theory of planned behaviour (TPB) model (Ajzen 1991) and the value–belief–norm (VBN) model (Stern 2000), among more specific models for particular categories of pro-environmental behaviours (see: MacCarty and Shrum 2001; Bortoleto et al. 2012). Nevertheless, Kaplan and Madjar (2015) found that the self-determination theory outperformed other theoretical approaches regarding the explanation of maintaining a variety of behaviours.

Initially, the self-determination theory gained importance in various domains because of the empirical usefulness of its application including behavioural persistence (Vallerand and Bissonnette 1992) and mental well-being (Pelletier et al. 1996). It should be noted that drive

theories of motivation and stimulus-response theories have been challenged by newer developments in cognitive psychology, economics and sociology (Lindenberg 2001). Nevertheless, the self-determination theory remains reliable and consistently associated with environmentalism due to its predictive power of pro-environmental behaviours (Aitken, Pelletier and Baxter 2016).

The literature applied the *Motivation Toward the Environment Scale* – alongside with alternative scales following the dissemination or rethinking of MTES, such as the *Internality, Powerful others, and Chanc*e scales by Levenson (1981) – in various contexts. On the one hand, several studies applied a variable-centred approach to verify the scales' validity with overwhelmingly positive results (see: Jang et al. 2009; Kaplan and Madjar 2015; Sass et al. 2018). On the other hand, person-centred tests focused on identifying prominent behavioural profiles in particular populations. For instance, Sass et al. (2018) found that even the consistently motivated individuals showed high extrinsic motivation among Dutch senior secondary school students. Furthermore, pro-environmental behavioural studies in the the self-determination theory framework have been dominated by identifying factors that affect pro-environmental behaviours positively, such as how certain government policies or particular messages (Pelletier, Baxter and Huta 2010). After the early 2010s, more and more studies started to apply experimental design to inspect causality relations (Kaplan and Madjar 2015; Pelletier, Baxter and Huta 2010).

However, the scholarship on environmentalism within the self-determination theory framework has significant limitations. The majority of the literature focuses on the quantitative analysis of factors and influences that determine pro-environmental behaviours, and there is only a particularly low number of studies on the PEB-related perceptions and constructed experiences of people. Mónus (2022) expresses similar criticism about the literature of pro-

environmental behaviours outside the framework of the self-determination theory. This shortcoming is prevalent because the curriculum has undergone a paradigm shift and the contemporary assumptions replaced traditional content laden approaches with empowering and liberating the subject of the research (see: Kapofu 2022). This turn was a partially functional measure to produce more comprehensive and tangible results in environment-related psychological research (Pelletier, Baxter and Huta 2010). As a result, the studies share an often explicit aim to foster pro-environmental behaviours by producing practical results that environmental initiatives can build on (see: Pelletier, Baxter and Huta 2010; Sass et al. 2018). The current literature provides rich quantitative evidence for the mediating role of basic psychological need satisfaction (see: Rickinson, Lundholm and Hopwood 2009). However, it fails to elicit the underlying mechanisms between psychological needs and intrinsic motivation, how the research subjects perceive pro-environmental behaviours and how they construct their view about environmentalism. Recognizing and understanding how people make sense of pro-environmental behaviours is also essential to designing successful environmental programs (Ivanoff and Hultberg 2006). Therefore, the scholarship must expand its focus to qualitative research methods and the study of latent perceptions in order to achieve its objectives, as in catalysing large-scale behavioural changes.

In this regard, these challenges amplify the importance of integrating the self-determination theory with environmentalism in a qualitative framework that empowers its primary targets. Qualitative analysis can reveal nuanced and underlying patterns about PEB-related connotations and frameworks, which are not attainable by quantitative methods. Consequently, the main value addition of the present study is that it complements the overwhelmingly quantitative literature with the inspection of tacit knowledge.

3. METHODOLOGY

The present study focuses on intrinsic motivation and pro-environmental behaviours, and its objective is to explore the underlying experiences, perceptions, emotions and associations of students from schools with different levels of autonomy support. It must be noted that there is a myriad of other factors that might influence the perceptions of the research subjects, including demographics, cognitive, emotional, ideological and cultural processes (Kurisu 2015). While the limitations if the study do not allow their inspection, they must be also considered for a comprehensive understanding of pro-environmental behaviours.

3.1. Participants

In order to gain more understanding of how the satisfaction of basic psychological needs influences self-determination and motivation, I compare students from two schools with different educational models and different levels of autonomy support. The sample comprised of 50 students during its first administration, and a total of 43 completed the survey: 24 from the Malom-Alom Democratic School (MADS) and 19 from the Veres Pálné Secondary Grammar School (VPSGS). I selected seventh grade students for two reasons. First, the children had to be old enough to possess a considerable level of agency – such as buying some of their own products or making decisions about their diet – in order to explore the motivations behind their actions. Second, democratic education does not exist above eights grade level in Hungary. The following description provides significantly more information about MADS because of its uncommon, innovative and relatively lesser-known model.

First, the Veres Pálné Secondary Grammar School is an institution with a traditional approach to education. As a part of the Hungarian public education system, it applies a methodologically limited, overwhelmingly frontal pedagogical model that focuses on reproducing the

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information presented by the teacher (European Commission 2022). The education system is often described as "Prussian", which refers to its rigid top-down approach (Bajusz 2013). While alternative methods that encourage students' proactivity and creativity are also spreading, however, their application remains relatively rare (European Commission 2022).

Second, the Malom-Alom Democratic School approaches education within the framework of democratic education. Based on the literature, it is reasonable to assume that children experience significantly higher level of autonomy support democratic schools. The fundamentals notions of the scholarship share meaningful similarities with the self-determination theory framework.

The theory is based on the assumption that human nature is inherently curious, which makes children suitable for education with more freedom and self-directed discovery (see: Locke (1693) and Rousseau (1894), Mintz 2013 for literature review). Dewey (1916) argues that the innate exploratory human interest is repressed by the status quo of education, and learning should be more experiential and individual-centred. Holt (1964) and Neill (1960) argued that external pressure replaces the children's inherent drive and openness to the world with desire for externally motivated success and conformity. Similarly, Deci and Ryan (2000) argue that the self-determination theory relies on the realization that humans are inquisitive, curious and ready to explore without extrinsic incentives. The authors also share the idea of Holt (1964) and Neill (1921): they believe that suppressing these innate propensities undermines one's intrinsic motivations. Due to the similarities of the two models, it is reasonable to assume that democratic schools perform better at fulfilling the children's psychological needs and supporting their intrinsic motivations.

Democratic schools do not have a universally accepted definition, there is a variation of bundles the different authors consider as the necessary components for an institution to meet the

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requirements. To date, the *SAGE Handbook of Education for Citizenship and Democracy* by Trafford (2008) has been the most comprehensive attempt at syncretizing the literature Therefore, I used the criteria developed by the author as a working definition for the selection of the institution. I selected the Malom-Alom Democratic School because in my understanding, currently it is the only Hungarian institution that meets all the aforementioned requirements (see: Malom-Alom Democratic School. n.d.).

- Ethos;
- School (or Student) Council;
- Student Leadership of School Activities;
- Committed Management.

By ethos, Trafford (2008) refers to the institutions' commitment to value-based approach that prioritizes respect and equality between all members including the students and the staff as well. The school must provide a relaxed and friendly environment that values the opinion of the children, helps them to form meaningful relationships and become confident, independent individuals. Deci and Ryan (2000) refer to the same notion as "relatedness". According to the authors, people are more likely to develop intrinsic motivations when they feel connected to and valued by their community. They argue that connectedness is usually an inherent implication of high autonomy support. The autonomy support of the democratic model is reflected in the right of expression and shared decision-making, which is embodied in the school (or student) council (Trafford 2008). The council is an integral part of the whole school, it is a platform for public discussion, representation and reporting mechanisms (Trafford 2008). According to Mintz (2013), the council must have a clear scope of authority, and the decisions made in this framework must not be overruled by the management. Regarding the student

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leadership of school activities, the institution should prioritize the facilitation of grassroot initiatives that are developed without the coordination of teachers (Trafford 2008). Student-led projects are for experiential learning, which can have far reaching positive effects on civic attitudes and future engagement (Trafford 2008). Finally, the role of democratic school teachers and staff differs significantly from the public education system. As Neill (1960) described, they are responsible for creating an environment that facilitates the students' development without external pressure.

3.2. Procedures

Before the research process, the parents of the participating students were asked to read and sign a consent form. Similarly, the children have also received a comprehensive description about the intended use of the research data, which they were required to acknowledge and confirm before participating in data collection.

The students participated in a two-step research process. First, the participants were asked to complete an anonymous online survey. Second, the students participated in focus groups discussions about environmental protection and pro-environmental behaviors.

3.2.1. Survey

The participants were invited to take survey at home, which took approximately 15-20 minutes. In order to maintain anonymity and decrease the probability of dishonesty and social desirability bias, it has been highlighted repeatedly that the children should complete the survey individually, without help or supervision from others. The survey was adapted from the *Children's Environmental Attitude and Knowledge Scale* (CHEAKS) by Leeming, Dwyer and Bracken (1995). The scale is a widely used, child-appropriate instrument designed to assess environmental behaviours, attitudes and knowledge (Izadpanahi and Tucker 2018). The

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original items of the survey were translated to Hungarian, subjected to revision and tested by children in order to evaluate their applicability. The children that participated in the testing process did not take part in the final research. As a result of the revision, several questions have been changed or replaced to enhance their suitability to the research objectives. The participants were invited to answer questions about environmental activities, perceptions and emotions (see Appendices).

The survey results were used to gain a preliminary overview of the population and develop the composition of the focus groups. Based on their answers, the students were divided into two categories: high level of pro-environmental behaviour and moderate level or low level of pro-environmental behaviour. Due to the anonymity of the survey, I used a two-step method to identify the participants of the focus groups. This is a common procedure in focus group research that ensures the that the data remains anonymous and allows the groups to incorporate those that will provide relevant information. I asked the teachers to assign a code to each student. Throughout the process, I did not have access to the names attached to the codes in order to avoid the possibility of researcher bias. In the survey, the participants were asked to indicate their code, which was exclusively used to divide students into groups based on their scores. After determining the composition of the groups, I asked the teachers to identify the participants using their code and inform them about the date and location of the focus group discussion. The teachers and students have not been informed of the group types (e.g. high level of pro-environmental behaviours) and they did not have access to the survey data.

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3.2.2. Focus group

I conducted focus group discussions to explore the students' perception of environmentalism within the frames of the self-determination theory. This framework includes reflections on their perceived autonomy and competence, what meanings they attach to these concepts, how they

make sense of sustainability, and what motivates them to act in a pro-environmental way. I opted for focus group research for two main reasons.

First, this methodology is designed to elicit underlying ideas, perceptions and beliefs (Krueger and Casey 1994). Therefore, this approach allows me to explore the feelings, meanings and associations that are underrepresented in the literature of environmental behavior. Ivanoff and Hultberg (2006) argue that understanding these underlying processes is essential to designing successful and effective programs. Therefore, focus group research is a commonly used tool in various domains including health education and rehabilitation (Ivanoff and Hultberg 2006), and it can yield valuable results for environmental education as well.

Second, focus groups are often used instead of individual interviews because they can create a more convenient environment to share personal information, for instance because the attention is divided between several participants (Vaughn, Schumm and Sinagub 1996). The present paper focuses on children, who might experience a research process as especially foreign or uncomfortable. This might affect and alter the results by subconsciously modifying their behaviour. Consequently, focus groups can decrease potential bias by constructing a more familiar, convention environment.

However, it must be taken into consideration that the group discussions might lead to social desirability bias, which would influence participants to answer in a way that would make them appear as more acceptable or desirable. I reduced the probability of this bias by applying homogenous sampling (Onwuegbuzie and Collins 2007). According to Vicsek (2006), a focus group is homogenous when the relevant characteristics of the participants are relatively similar. She argues that this sampling approach is preferable in case there is a significant risk of social desirability bias, because heterogenous groups tend to be more dominated by the participants with more social power. As a result, heterogenous group composition might discourage certain

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children from sharing controversial or unpopular opinions. In accordance with the literature, the students were assembled into two groups in each school based on their answers. The first group included children with meaningful engagement with sustainability. They were selected randomly from the students that achieved a high score regarding pro-environmental behaviour in the survey. The second one included children with no significant engagement with sustainability. They were selected randomly from the students that achieved a moderate score regarding pro-environmental behaviour in the survey.

According to Krueger and Casey (1994) and Morgan (1997), three to six different focus groups are adequate to collect enough data for identifying patterns. I organized four focus group discussions, two groups in each school. The group size should be large enough for diverse information, but too many participants would make it difficult for everybody to contribute equally (Onwuegbuzie et al. 2009). Morgan (1997) recommends organizing groups with six to ten participants, while Krueger and Casey (1994) argues that the suitable size is between six and twelve . However, several studies discuss the beneficial potentials of "mini-focus groups" with three to four participants (Krueger and Casey 1994, 17; also see: Vicsek 2006 ; Morgan 1997). The authors argue that the group size should be smaller when it is reasonable, for instance when the topic is particularly controversial or emotional. I assembled four participants in each group because it is more challenging to maintain coordination children, and a larger size could decrease the order and quality of the discussion. The length of a focus group discussion is typically between one and two hours (Morgan 1997). I decided to organize 45-minute-long discussions after consulting the teachers, who highlighted that the age and attention span of the participants do not allow longer engagement with a task.

As the moderator of the focus groups, I was responsible for facilitating the flow of discussion, encouraging participants to speak and let others contribute as well. At the beginning, the groups

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were asked to suggest a set of rules that will guide the discussion. For instance, students agreed that the participants should pay attention to each other, and the details of the discussion should remain confidential. During the majority of the process, I catalysed discussion by inviting the participants to share their opinion about certain statements (for instance, "I believe that I could influence my family to live in a more environmentally friendly way."). On one occasion, I used stimulus material to present two opposing approaches to sustainability. I also invited the students to discuss hypothetical scenarios in order to explore their emotions, reactions and behavioural patterns (for instance, "You witness one of your classmate littering. What is your first thought and how would you react? What if instead of your classmate, it is a stranger?"). The sessions have been recorded with the consent of the participating students and their parents. The audiotape was used to produce a de-identified transcript of the discussion for exclusively research-related reasons.

3.2.3. Measures

Pro-environmental behaviours

The students completed the adapted *Children's Environmental Attitude and Knowledge Scale* survey to provide information about their pro-environmental behaviours. First, the survey contained a 5-point Likert scale measuring the participants' verbal commitment to sustainability (for instance, "I would be willing to save energy by using less air conditioning in the summer.") and actual behaviours (for instance, "I turn off the water in the sink while I brush my teeth to conserve water."). Second, the children were asked to assess their affective position using a 10 point scale (for instance, "I get upset when I think of the things people throw away that could be recycled."). Finally, environmental awareness was tested by a knowledge-based questionnaire (for instance, "A good example of a non-renewable resource is: a) petroleum; b) trees; b) ocean water; d) sunlight."). A major limitation of this survey is

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that it was not able to measure environmental performance and possibly unconventional, creative solutions outside of the pre-determined categories. In order to decrease this bias, the children were encouraged to share personal examples and stories during the focus focus group discussions.

Basic psychological needs: perceived autonomy, competence and connectedness

The perception of the students' basic psychological needs were discussed during the first phase of the focus group discussions. The prompts were influenced by the *Internality, Powerful others, and Chanc*e scales by Levenson (1981) and the *Motivation Toward the Environment Scale* by Pelletier et al. (1998). These instruments were designed to explore people's perceptions of their control over their own decisions (Levenson 1981) and their personal capabilities regarding environmental behaviours (Pelletier et al. 1998). First, the participants were asked to reflect on abstract statements targeted at their conception of environmental issues (for instance, "Discuss the following statements: (a) If we try hard enough, we can save the Earth and reverse the damages caused by climate change and environmental degradation; b) Sustainability is hopeless. Our efforts to save the Earth are useless because it is impossible to reverse the damages caused by climate change and environmental degradation."). In the following step, the children were presented with more practical questions focused on their locus of control and competence (for instance, "I believe that I could achieve that my hometown becomes more environmentally friendly."). I prompted the evolving discussion with follow-up questions based on their former statements (for instance, "You mentioned that many people do not care about sustainability, what do you think, what is the reason of this phenomenon?").

Intrinsic and extrinsic motivation

The second phase of the focus group discussions focused on the participant's underlying motivations regarding pro-environmental behaviour. The prompts were developed based on the

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signs of intrinsic and extrinsic drivers based on the literature of motivational studies. First, I asked the students to select one of their pro-environmental behaviours and describe the reasons why they do it. The objective of this question was to observe whether their argumentation refers to primarily extrinsic (for instance, "wasting water costs a lot of money"; "my parents told me to do so") or intrinsic (for instance, "I like to participate in garbage collection programs because I enjoy making our parks more clean and beautiful") causes. Second, I targeted the children's perceived pleasure regarding pro-environmental behaviours (for instance, "Do you see pro-environmental activities as generally fun and enjoyable or demanding and inconvenient?"), because intrinsic motivation is usually associated with enjoyment (Graef, Csikszentmihalyi, and Gianinno 1983; Deci and Ryan 2000). Third, the participants were presented with prompts focused on the topic of rewards and recognition from authority figures (for instance, "Can you tell me examples when you were praised or rewarded for environmentally friendly behaviour at home or in school?") (Graef 1983; Deci and Ryan 2000). Finally, I explored PEB-related peer recognition and social norms (for instance, "One of your friends witnesses that you litter. What do you think, how would they react?") (Graef 1983).

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4. RESULTS

4.1. Preliminary statistics

It is important to note that due to the qualitative focus of the present research, the survey has only 43 respondents. Consequently, it is not possible to identify any significant patterns. The functional objective of the survey was to provide a general overview of the students' relevant features in order to identify the composition of the focus groups.

To assess environmental performance, I divided the respondents into three categories based on their environmental behaviour-related answers. The highest score was 44. Those who achieved a score between 44 and 30 were assigned to the group of high level environmental performance. Those who achieved a score between 29 and 15 were assigned to the group of moderate level environmental performance. Finally, those who achieved a score below 14 would have been assigned to the group of low level environmental performance, but there was no score below 14. There was a relatively meaningful gap between the two schools. In the Veres Pálné Secondary Grammar School, 15 out of 19 students (79 percent) achieved a high score of PEBs and 4 students (21 percent) were assigned to the group of moderate level environmental performance. The average score was 34 (out of 44) within the high-achieving group and 27.6 within the moderate level group. Comparatively, in the Malom-Alom Democratic School 11 out of 24 students (46 percent) achieved a high score of pro-environmental behaviours and 13 students (54 percent) were assigned to the group of moderate level environmental performance. The score averages by group were very similar to the other school: 35 within the high-achieving group and 28 within the moderate level group.

In the affective dimension, the highest achievable score was 9. The findings suggest that the children are concerned about the environment, and they perceive the environmental destruction

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and its consequences as serious issues. In the Veres Pálné Secondary Grammar School, the average was 7.75 points in the high-performing group, and 7 points in the moderate level one. There is a larger gap in the Malom-Alom Democratic School: the average was 7.9 points in the high-performing group, and 5.5 points in the moderate level one.

Environmental knowledge does not appear to be a significant factor behind environmental performance. In the Veres Pálné Secondary Grammar School, there was no considerable difference between the knowledge-related score of high and moderate level PEB groups: the average score of the former one was 2.75 out of 4, while the average score of the latter was 2.6. There is a slightly bigger difference in the Malom-Alom Democratic School: the average score of the former one was 3.1, while the average score of the latter was 2.5. In comparison, the average scores of the two groups with moderate level environmental performance were very similar, however, the high level PEBs group of the democratic institution reached a relatively higher score than the traditional school. This finding is similar to former empirical evidence that suggests that environmental knowledge is not always reflected in behavioural patterns (see: Kollmuss and Agyeman 2002; Zsóka et al. 2013).

In summary, the survey does not show meaningful difference between the two schools in terms of environmental behaviour, affection and knowledge. However, the results revealed an unexpected finding: the rate of high-performing students is notably higher in the Veres Pálné Secondary Grammar School than in the Malom-Alom Democratic School. In my interpretation, this difference might be attributed to the fact that the students of the non-democratic institution experience a higher external pressure and control, which leads to more homogenous behaviour. However, it must be highlighted that the functional role of the survey was to collect preliminary information about the participants as a preparation for the focus groups. The sample size is not large enough to conclude meaningful patterns or robust findings.

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4.2. Focus group analysis

4.2.1. Analytical framework

The de-identified transcripts of the focus group discussions were quantitatively analysed using inductive thematic analysis methodology. I applied the six-phase approach by Braun and Clarke (2013). According to the authors, thematic analysis is designed to identify, make sense of and offer insight into the patterns of meanings and experiences appearing during the discussion. Braun and Clarke (2006) highlight that a successful focus groups reveals numerous notable constructs, but only those appear in the final report that capture something particularly valuable about the research question. The inductive approach refers to the "bottom-up" inspection of data: I identified the final themes by carefully inspecting the content of the transcripts (Braun and Clarke 2013). However, it must be noted that it is impossible to remain purely inductive, because the survey and the prompts used during the discussion determine preliminary directions.

In terms of epistemological assumptions, I apply an essentialist and experiential framework. Essentialist analysis refers to prioritizing the content that is discussed rather than focusing on the mechanisms and dynamics of the discussion itself (Millward 2012). Experientialism focuses on the participants' interpretations rather than approaching them from a critical perspective and analysing the underlying societal influences (Braun and Clarke 2013). This framework is suitable for the present analysis because it supports the fundamental research objectives, such as giving voice to the subjects of environmental education, and uncovering how they make sense of their experiences with sustainability. The discussions are analysed with the intention to compare the perceptions of students from environments with different levels of autonomy support.

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4.2.2. Analysis

Four main themes emerged during the focus groups. The first one refers to the prospects of environmentalism and the children's assumptions about sustainability. The second one discusses how students see the responsibility of environmental protection including their own role. The third one explores how the participants experience and make sense of pro-environmental behaviours. The fourth one focuses on the underlying reasons and motivations.

The prospects of environmentalism

Regardless of their school, all children revealed general exhaustion and pessimism when reflecting on the future of environmental protection. On the one hand, nearly all participants agreed that sustainability should play an important role in everybody's life. On the other hand, they made numerous statements that uncovered that they consider their prospects as hopeless because environmental destruction has already caused too much damage, for instance: "We can buy ourselves some time, but the Earth will die sooner or later." or "It does not matter what I do, I will damage the Earth anyway". In comparison, the students of Veres Pálné Secondary Grammar School expressed the significantly more negative worldview. They argued that the only reason that motivates them to make pro-environmental decisions is to make the Earth a better place for their future children and grandchildren. A participant mentioned that "I try to do my best, but I do not think it matters". While the children from the Malom-Alom Democratic School were also fundamentally pessimistic, they were slightly more hopeful to see that more and more people are interested in environmentalism. However, they argued that "the whole modern world is built on environmental exploitation. The economy, the buildings, everything had to be teared down if we want to stop the destruction of the environment". These statements suggest that children feel generally powerless and helpless when it comes to environmentalism, and they are sceptic about the effectiveness of pro-environmental behaviours. The students of

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MADS identified the older generations as the causes of the issues, but they did not blame them because these consequences were unforeseeable. However, they expressed frustration regarding adults that are not willing to make changes and adapt sustainable behaviours.

The responsibility of environmental protection

All participants agreed that everybody should be responsible for the environment. They stated that "it is not fair that some people do nothing to protect the Earth, so other people have to work much harder". This uncovers underlying annoyance about the fact that people make unequal effort to protect the environment. The children from Veres Pálné Secondary Grammar School believed that people who ignore sustainability tend to prefer comfort, focus on their individual success, they are uninformed or pro-environmentalism is not popular among their friends. Similarly, the students of the Malom-Alom Democratic School argued that "unfortunately, sustainability will not lead to money". Three out of the four participants jokingly discussed that they would not care about the environment either if they were millionaires. These answers suggest that children see a meaningful trade-off between environmental aspects and personal benefits. Moreover, MADS children reflected on the importance of resources: "people have to eat and some cannot afford meat substitutes".

The participants also mentioned that people have different levels of responsibility based on their power. For instance, they believed that politicians and large organizations should use their influence for environmental protection. However, the students from the two schools approached the issue differently. The VPSGS children expressed intense frustration with awareness raising campaigns: "I am really annoyed that people talk about the environment all the time, but they do not make any real efforts. They probably think that they do not need to do more because they already influenced other people." They also added that "it would make more sense to plant trees or collect garbage during that that time that they spend with

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conferences and public speeches". These samples reveal that VPSGS students see most awareness raising efforts as superficial and hypocritical. They argued that politicians should focus on policies that would have real pro-environmental effects. Greta Thunberg is highlighted as a particularly negative example: many believe that she is exploited by somebody that tells her what to do, and what she does should not be the responsibility of a child.

In comparison, this topic did not receive much attention in MADS. The students agreed that politicians should be primarily responsible for environmental protection, but they argued that ordinary people can also catalyse grassroot initiatives. On the other hand, the majority of children admitted that they are reluctant about the effectiveness of this option in practice. However, their young age has not been mentioned as an obstacle.

Pro-environmental behaviours and sustainable options

The students of the democratic and non-democratic institution reported significantly different pro-environmental behaviours. The children from Veres Pálné Secondary Grammar School perform consistently high in terms of basic activities such as turning off the tap to save water, turning off the lights and selective waste collection. They mainly reflected on pro-environmental behaviours practiced by their whole families, which appeared as "compulsory". On the other hand, it has been revealed that they are generally uninformed about the relevance and effects of these activities: for instance, "my family collects the garbage selectively; I know that it is environmentally friendly, but I do not really know what this means in practice". Some children mentioned that their parents just tell them the rules but do not give any justification other than that it is good for the environment. The lack of environmental knowledge causes confusion and misunderstanding among them: for instance, "I want do be more sustainable, but it is difficult to decide what is right and wrong. Of course, there are some self-evident options, such as cleaning up the ocean, but they are beyond my reach". Nevertheless, the majority was

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curious and eager to gain deeper understanding of the topic. These observations uncover that the non-democratic school students do not think about pro-environmental habits in a pro-active way: they follow the necessary rules, but they did not mention any additional initiatives. This might be associated with the fact that they perceive the world of sustainability as complex and challenging to navigate.

Comparatively, the students from Malom-Alom Democratic School reported more creative and out of the box ideas regarding environmental protection, for instance "I usually refurbish my old clothes into tote bags or scarfs". Moreover, some students also revealed long-term, large-scale aims, such as becoming an environmental lawyer or opening a second hand clothes shop. Their discussion uncovered more comprehensive understanding of pro-environmental behaviours, processes and their impacts. As a result, they were more critical toward seemingly sustainable alternatives and options. For instance, they expressed complaints that "selective waste collection is useless because in the end, they will manage all the garbage in the same way". All of them held the shared view that making pro-environmental decisions is challenging because "everything works in a wasteful way, for instance, everything is covered in tons of unnecessary plastic packaging".

Motivations

Extrinsic factors played a significant role in each focus group discussion. When the children were asked to reflect on the importance of saving water and energy, their primary answer referred to their costliness. The Malom-Alom Democratic School students also mentioned that wasting water equals unnecessarily losing a lot of clean water. This aspect was not raised by the students of Veres Pálné Secondary Grammar School. These observations suggest that parents might justify these rules by financial arguments. Most children have seemingly internalized these guidelines because their behaviour does not change if it is not monitored:

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only one MADS child admitted that he or she does not turn off the lights when there is no supervision. All participants said that they feel remorse and frustration when they accidentally do something harmful such as wasting water. While several VPSGS students reported that their negative feelings disappear after a few minutes, MADS children described the experience as more long-term. This effect might be associated with the fact that motivation is connected to external incentives in low autonomy support environments, therefore, non-democratic school students lose interest shortly after the removal of the extrinsic stimulus (the punishment) (Deci and Ryan 2000). On the other hand, participants usually do not experience praise regarding environmental performance. Some VPSGS students mentioned that they were awarded for an environmental project in school , but they added that "we did not do it for the prize. It was a nice surprise, but it was not our objective".

A significant difference between the two schools was the influence of friends. In the Veres Pálné Secondary Grammar School groups, the students overwhelmingly agreed that their friends would not care about their environmentally harmful habits. Some participants mentioned that they tend to pick up garbage if their friends leave it around, but they prefer not to confront them. In comparison, Malom-Alom Democratic School students admitted paying a lot of attention to each other's Pro-environmental behaviours and usually trying to correct the behaviour of their friends. They revealed that pointing out each other's occasional sustainability-related hypocrisy is is very common. These findings suggest that peer recognition has a significantly larger effect in the democratic environment, which is connected to their higher proclivity to give voice to their observations.

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4.3. Discussion

The focus group discussions offered insight into the sustainability-related perceptions of democratic and non-democratic students, and revealed several valuable patterns. Given the

exploratory objectives of the present paper, these findings require further inspection in order to produce robust results.

The participants had a generally pessimistic picture about the impacts of pro-environmental behaviours and their own competence. On one hand, students consider sustainability as very important; but on the other hand, they seemingly believe that there is a significant trade-off between environmentalism and personal benefits. This approach is associated with frustration about people that behave in an environmentally harmful way. It is reasonable to assume that children are discouraged because they experience that they choose to sacrifice certain individual advantages to protect the environment, but the impacts are unfairly undermined by those who ignore the consequences. The reduction of their perceived competence is likely associated with diminishing (intrinsic) motivation. The intensity of this mechanism is reflected by the fact that the Veres Pálné Secondary Grammar School focus groups identified a singular extrinsic motivation (the living conditions of their future children) as their only drive to perform pro-environmental behaviours. These results suggest that children require more explanation than the general "every little bit counts" argument because their contradictory experiences generate strong pessimism and scepticism at a very young age.

The students from Veres Pálné Secondary Grammar School expressed a lot of frustration towards authority figures that focus on raising their awareness for environmentalism. They perceive these measures as hypocritical and ingenuine because they are usually not accompanied by meaningful efforts. Their answers revealed that they prefer initiatives that make practical changes. This observation might have important implications for environmental education programs because it suggests that children find good practices more motivating than awareness raising.

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Compared to the democratic school, non-democratic school students possess limited understanding of environmental behaviours, which might be attributed to the fact that their less autonomy-supporting environment enforce these rules extrinsically instead of providing satisfactory justification for them. Based on their statements, it is reasonable to believe that they hold a view that environmentalism is complex and difficult to navigate. Due to their low level of perceived competence, they are reluctant to consider creative and pro-active environmental solutions outside the sphere of mandatory environment-related rules. However, the children expressed eagerness to learn and posed complex questions about environmental processes. This evidence supports the argument of Deci and Ryan (2000) that human nature is inherently curious about its surroundings, which makes it suitable for more self-led discovery and learning.

Finally, the discussions uncovered an unexpected gender-based pattern. Girls placed the emphasis on personal relations when thinking about ways to disseminate environmentally friendly practices. They highlighted that setting a good example and sharing ideas can inspire others to adapt pro-environmental behaviours as well. In comparison, boys approached the issue from a macro perspective. Many of them held the view that effective sustainability requires top-down coordination and control. For instance, some argued that "it is easier to achieve sustainability in cities because they have a powerful major and government. Small towns do not have strong public administration, so it would be difficult to influence the local people". These preliminary findings suggest intriguing internalized gender-based behavioural patterns, which would be valuable to explore in the future.

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5. CONCLUSION

The present research explores the self-determination theory from underrepresented approach to complement the overwhelmingly quantitative orientation of the scholarship and elicit tacit knowledge about pro-environmental behaviour. The paper compared the environmentalism-related perceptions of children from democratic and non-democratic schools to develop a more nuanced understanding about the relationship of autonomy support from one's social environment, the satisfaction of basic psychological needs and intrinsic motivation.

The findings fit into the narratives uncovered by the former empirical applications of the framework. Based on former studies, I initially expected that democratic school students would express higher intrinsic motivation regarding environmental protection. The patterns that emerged during the discussions were consistent with this hypothesis, but they were more complex. The analysis found that that students from more autonomy-supporting environment perceived higher level of competence, which was reflected by their understanding about their own role and agency in environmental protection. Extrinsic motivations were very significant in both communities; however, democratic school children expressed some enjoyment and internal drive in association with pro-environmental behaviours, while non-democratic school children did not.

The analysis revealed additional unexplored details, which open new doors towards intriguing research questions. First, it is a shared understanding in the literature of environmental behaviour that more environmental knowledge is not necessarily associated with more pro-environmental behaviour. However, the comparison of the focus group discussions revealed that environmental knowledge might be associated with the *type* of environmental behaviour. More knowledgeable children felt more comfortable navigating the world of sustainability and had higher perceived competence, which encouraged them to experiment pro-actively with out

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of the box solutions. Furthermore, the results suggest that the widely used standardized surveys might produce misleading results when testing environmental motivations, for instance because they are less suitable to measure creative personal pro-environmental habits that reflect higher intrinsic motivation.

Second, another insight revealed that girls and boys approach sustainability in fundamentally different ways. During the focus group discussions, girls applied a horizontal perspective and highlighted the importance of personal connectedness, while boys associated environmentalist measures with control and coordination. Even though the limitations of the paper do not allow the in-depth exploration of gender-related differences, more focused future research could uncover valuable insights about internalized gender-based patterns.

The findings also suggest valuable policy implications for environmental educational initiatives. First, the widely used "every little bit counts" argument might have counter-productive effects on the intrinsic motivation of children. On the one hand, the majority of students have internalized this message as they expressed the perception of moral obligation to make environmentally friendly choices. On the other hand, many argued that their sacrifices are worthless because they cannot offset the environmental destruction caused by others. This vicious circle evokes environmental pessimism and undermines intrinsic motivation, which is already at this young age. This insight suggests that beside awareness raising, environmental education should allocate more attention to teaching the children how to navigate their feelings when they experience hopelessness, powerlessness and burnout regarding environmental protection.

Second, the students from low autonomy-support environment experience intense frustration towards politicians – and authority figures in general – that focus on environmental awareness raising in the abstract sense instead of promoting pro-environmental policies. They described

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these programs as counter-productive and hypocritical. This finding highlights the importance of setting a good example, because it is reasonable to assume that the overwhelmingly pessimistic perception of children might be attributed to former encounters with environmental hypocrisy. Moreover, this insight also reveals that children are more suitable for experiential learning than top-down education, which is a fundamental thesis of Deci and Ryan (1998). Within this framework, environmental education programs should prioritize showing good practices, effective and enjoyable pro-environmental solutions, and work their way up from the the bottom to to teach children about the "big picture" concepts of environmental protection and sustainability.

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Appendices

Appendix A. Survey [translated from Hungarian]

The survey is based on the Children's Environmental Attitude and Knowledge Scale by Leeming, Dwyer and Bracken (1995).

1. Which school do you attend ?

- Veres Pálné Secondary Grammar School
- Malom-Alom Democratic School

2. Code

3. [Verbal commitment]

How much do you agree with the following statements? (5-point Likert Scale)

I would be willing to...

- stop eating my favourite food if it had a positive effect on the environment;
- save energy by using less air conditioning in the summer;
- give HUF 5.000 from my own money for environmental protection;
- encourage my friends to recycle our things.

4. [Pro-environmental behaviours]

How much do you agree with the following statements?

- I am careful to avoid littering.
- I asked my parents to discuss environmental issues.
- I turn off the water in the sink while I brush my teeth to conserve water.
- To save energy, I turn off the lights when I don't need them.
- I usually buy environmentally friendly products (such as recyclables).
- I asked my parents to recycle a few things.
- I believe that my lifestyle and habits have a significant impact on the environment.
- I usually tell others not to litter/not to run the water unnecessarily/turn off the lights.
- I seek information about the environment or environmental protection on my own.

5. [Affective dimension]

Indicate your answer from zero to ten. (Zero – Strongly disagree; Ten – Strongly agree)

- It makes me angry and worried when I think about the effects of pollution.
- I am afraid of how pollution will affect my family.
- I get upset when I think of the things people throw away that could be recycled

6. [Environmental knowledge]

A meat-free diet is better for our environment.

- True
- False
- I do not know

Compared to traditional paper, recycled paper...

- requires more water to produce.
- requires less energy to produce.
- costs less.
- produces more pollutants.

Which of the following is a a non-renewable resource?

- Petroleum
- Wood
- Water
- Sunlight

What can go into the blue waste collection container?

- Pizza box containing leftover food.
- Newspaper, booklet, cardboard box.
- Mineral water PET bottle.

Appendix B. Focus Group Script [translated from Hungarian]

1. What do you think about the following statement?

- "I personally think it is important that the individual helps to make their community, their immediate environment and the world better." Why? (Give examples of how you could make the world a better place? Which of these do you do in your own life?)
- "If we try hard enough, we can save the Earth and reverse the damages caused by climate change and environmental degradation"; "Sustainability is hopeless. Our efforts to save the Earth are useless because it is impossible to reverse the damages caused by climate change and environmental degradation."
- "I believe that I could make my family more environmentally friendly."
- "I believe that I could achieve that my hometown becomes more environmentally friendly way."

2. I will present two example sentences, then select one of your own habits and formulate your own statement.

- "I always use recycled shopping bags, because this way I produce less plastic waste and do less harm to the environment."
- "Environmental protection is very important to my roommate, and we always fight when I buy environmentally polluting detergent, so I make sure to choose an environmentally friendly product."

3. Can you tell me examples when you were praised or rewarded for environmentally friendly behaviour at home or in school? Can you give an example of when you were punished at home or at school for doing something that is harmful for the environment?
4. Do you see pro-environmental activities as generally fun and enjoyable or demanding and inconvenient?
5. Imagine the following situation: You get home and realize that you accidentally left the water running for two hours. How does this make you feel and why?

- Follow-up: Let us assume that no one has been home since then, which means that no one but you knows what happened. Does this change anything?

6. Imagine the following situation: I don't reuse my empty water bottle, I throw it away every day and buy a new one every day, even though I know this is bad for the environment.

- What do you think, how would your friends react? How would you feel?

7. You witness one of your classmate littering. What is your first thought and how would you react?

- What if instead of your classmate, it is a stranger?

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