Proenvironmental behaviour in environmental education programmes

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Introduction

Why do we have environmental education? In the face of environmental crisis we believe that humankind must alter its behaviour from contemporary, unsustainable ways to new and more responsible behavioural patterns. We also believe that our educational programmes are effective in promoting such a change: they develop competences (knowledge, skills, attitudes, values) important for behavioural change and so they will bring positive environmental outcomes in the future. However, such an assumption is not always supported by rigorous research.

The question of what factors influence proenvironmental behaviour has been studied for more than forty years in the context of psychology, sociology or environmental education (EE). Although no clear answers are provided, there is a plethora of theoretical models that might be useful for practitioners designing a new EE programme. In this paper, we will focus on:

- What we know about factors influencing proenvironmental behaviour, and
- How such knowledge could be applied in the practice of EE.

The role of environmental knowledge and awareness

In the early 70s, when the first research papers focusing on EE were published, the answer seemed to be quite obvious. Many people simply believed that environmental knowledge and awareness were the keys. This theory was known as K-A-B (knowledge-attitude-behaviour theory) and it assumed that when people are provided with information about environmental problems (awareness) and what they can do to decrease their impact on the environment, they accept that some kind of behaviour is either correct or wrong (attitudes) (Hines, Hungerford, & Tomera, 1986-7, Hungerford, & Volk, 1990, Heimlich, & Ardoin, 2008). As a result, they will stop wrong behaviour and start doing the 'correct' one.

Strategies based on this theory are still very common in EE. Many programmes focus mainly on informing people of what-to-do and 'what-not-to-do' and provide them with information about environmental issues challenging the future of humankind on Earth. When applying modern instructional strategies, such programmes are often far from being boring. Pupils can read interesting texts, watch videos, or play games. Most of them may like it. A centre providing such a kind of programme might never realize that they fail in their main mission.

 The K-A-B theory has never been approved. As far as we know, knowledge does not simply correlate with behavioural change and the role of attitudes is still subject to questioning. The strategy focuses mainly on providing information and this does not usually lead to behavioural changes, even if an increased environmental awareness might result (Hungerford, & Volk, 1990, Heimlich, & Ardoin, 2008).

Last but not least, environmental issues are usually broadly covered by media (even though there are often many mistakes in the explanation of scientific phenomena). So people are usually already aware of them. Pupils usually know that there are environmental problems. Knowledge-based programmes might improve their awareness and correct existing misconceptions but they often fail in changing their attitudes and so do not usually alter their behaviour.

On the other hand, this does not mean that EE programmes should provide no information at all. According to an influential theory of planned behaviour (TPB) invented by Icek Ajzen (1991), information plays a role in developing a belief about possible consequences of intended behaviour. Such a belief helps to shape humans' attitude towards behaviour. Such attitude is a part of mutually interconnected factors we take into play when we decide whether to do something or not.
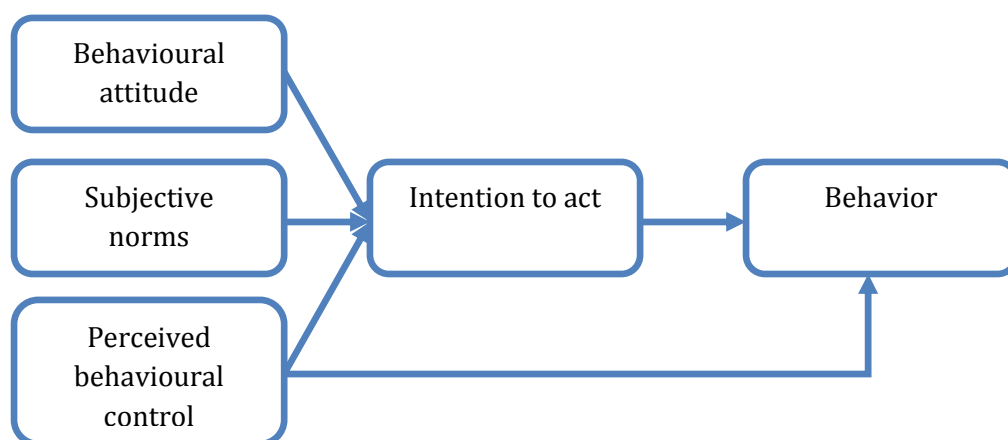
Furthermore, Hungerford and Volk (1990) assumed that even if ecological knowledge plays no role in our intention to do or not-to-do something for the environment, there is a chance that more knowledgeable people will make better decisions. We can imagine, for example, a gardener who cares for nature and so looks for the most environmentally-friendly way to deal with slugs eating her lettuces. Understanding of the concept of the food chain may prevent her from using chemical susbstances and motivate her to use alternative means.

In outdoor programmes we can use the environment for activities that involve asking pupils to collect real-world data, investigate the surrounding environment, or apply new concepts in the real world. Doing this, pupils not only develop their conceptual knowledge but also their investigative skills. Experiential activities may also promote their interest for the investigated topics and provide motivation for further independent work of their own.

The role of attitudes, norms, and values

In the TPB three main factors are in play. The first one is attitude towards an intended behaviour. According to Ajzen (1991), it is rooted in our belief of the positive and negative outcomes that such behaviour might cause (see Image1).

Image 1 Theory of planned behaviour (Ajzen, 1991)

However, our attitude is further modified by subjective norms – what we suppose that people who are important to us do and like, and what we suppose they do not do and do not like.

Imagine a scenario when Marie receives a booklet with information about the benefits of organic products. She counts the pros (it might be more healthy and it helps the environment) and cons (it is quite expensive). Then she starts asking: 'Do I know someone who buys this organic stuff?' When she asked her mother she was told that she did not believe it and it was probably incorrect. In this case, social norms speak against proenvironmental behaviour and Mary decides not to buy organic food.
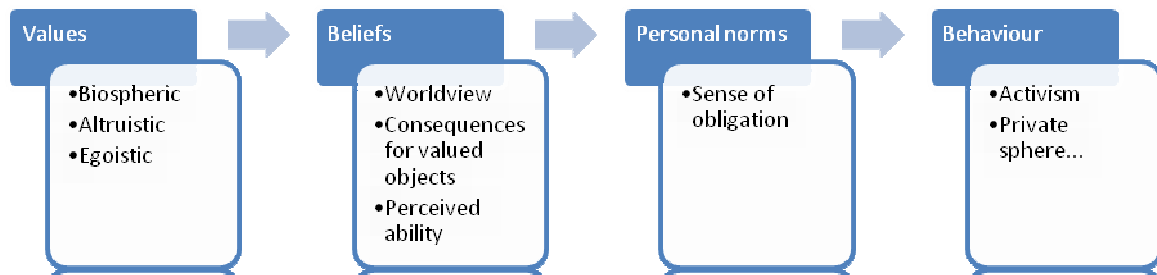
Taking the TPB seriously, we must be aware of the subjective norms of our participants. There are several strategies on how to deal with this factor. Perhaps the best one is the community-based approach. It means that we focus on the whole community (people in a neighbourhood, all the family, a whole school) and its norms rather than on individuals. Other strategies might also be helpful. We can tell stories of people our participants might identify with, for example. Last but not least, personal integrity of teachers and lecturers is crucial.

At a Czech secondary school pupils participated in an interactive exhibition presenting environmental and social issues connected with globalisation. In one part the exhibition portrayed water issues connected with the production of Coca-cola in India. Because many students liked Coca-cola, they fiercely discussed this issue with their teacher. Some of them even questioned the validity of the provided information. The next day, the teacher brought a drink in a plastic bottle to his class. Unfortunately, the drink was produced by the Coca-cola company and students started to question the teachers' integrity by commenting that he had no right to criticize the product he used himself.

The role of values and attitudes is still a matter of debate. Two different positions are discussed.

According to some scholars (Stern, Bogner), environmental values and attitudes are crucial for developing proenvironmental behaviour. People seek union between what they suppose is right and what they actually do. Environmental values and attitudes, confronted by awareness of an issue and ascription of personal responsibility, lead to feeling of moral obligation and to responsible behaviour (see Image 2) (Stern, Dietz, Troy, Guagnano, & Kaloff, 1999, Kals, Schumacher, & Montada, 1999, Stern, 2000, Kaizer, Hübner, & Bogner, 2005, Johnson, & Manoli, 2008).
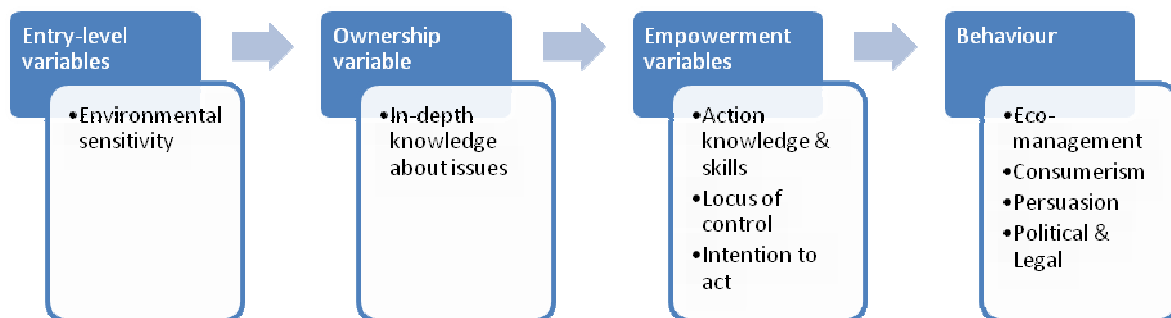
Image 2 Value-belief-norm theory (Stern, 2000)

Practitioners who believe in this theory often try to develop environmental sensitivity of pupils, promoting their love of nature and deepening their belief that the environment must be protected.

On the other hand, Harold H. Hungerford (Hines, Hungerford, & Tomera, 1986-7, Hungerford & Volk, 1990) in his model of responsible environmental behaviour (REB) argued that the relationship between attitudes and behaviour is rather weak (see Image 3). People might seek union between attitudes and behaviour, but such union might be easily blurred by various escaping strategies (Thapa, 1999, Jurin, & Fortner, 2002).

Image 3 Responsible environmental behaviour (major variables only) (Hungerford, & Volk, 1990)

It's possible that the problem relates to the varying levels of difficulty of different forms of proenvironmental behaviour. People might simply believe that when they recycle (which is quite a simple behaviour with a relatively low environmental impact) they are doing enough to align with their environmental attitudes. The same people might frequently use a plane for travelling, or consume a big amount of energy for heating (which might be more difficult to alter but has a relatively high environmental impact) (Jurin, & Fortner, 2002).

We might assume that the more specific an attitude is (e.g., attitude towards travelling by a plane), the more it correlates with proenvironmental behaviour (Ajzen, & Fishbein, 2005). The role of non-specific (general) environmental attitudes, however, is still discussed.

As Stern, and others, supposed, altruistic values may motivate us to behave in an environmentally responsible way (Stern, 2000, Straughan, & Roberts, 1999). Surprisingly, in some cases even egoistic values can play the same role. Some people buy organic food because of their compassion with animals (benevolence), or love for nature (universalism). Others may buy it because they believe it is healthy (safety) or simply think it tastes better (hedonism) (Aertsens et al., 2009).

This definitely does not mean we should promote egotistic values in environmental education. The key message is that, in real-life decision-making, more forces than simply altruism are in play, and the context (what we specifically want to do, and in what condition) is often crucial. Whatever 'shaping environmental attitudes and values' is, it is important not to put all the eggs in one basket, and for the sake of an attitude/value change ignore other important areas of environmental education. Moreover our uncertainty teaches us to be humble teachers, remembering we do not have a tool for engineering people in one prescribed way.

In outdoor environmental education we have a unique opportunity to challenge and develop pupils' attitudes towards nature and environmental issues. A well approved strategy is to include various kinds of sensory activities (like Earth Walks or Magic Spot in earth education) into an environmental education programme, or other types of activities providing direct contact with the environment (Matre, & Hoessle, 1980, Matre, 1999). Because people need not only bto perceive nature but also to reflect on the meaning of what they have experienced, an opportunity for sharing, or some other kind of reflection, should be provided (Kellert, 1998, Bögeholz, 2006).

I do what I believe I can do

According to Hungerford (Hungerford, & Volk, 1990), people tend to do what they believe they are capable of and what can cause an intended effect. When facing huge environmental issues (e.g. climate change), people simply do not believe they can do anything to change the situation.

Moreover, such a feeling is often connected with personal traits. Some people do not believe they are able to change much in their lives. They believe that many things they experience are influenced by a chance or by the will of someone else. The lack of belief in their own capacity to change things (psychologists called it 'external locus of control') undermines their willingness for proenvironmental behaviour (Hungerford, & Volk, 1990, Meinholed, & Malkus, 2005).

To change this attitude, people need to experience a success they can clearly match with their own effort. Being only informed about environmental issues, they often say something like, 'OK, but what can I do to help...someone else should solve the problem'. Such kind of 'awareness-based' EE programmes often deepen their frustration and apathy (Nagel, 2005).

Because of this, we might assume that a well-working EE programme should be 'action-based'. It means pupils should not only be informed about an issue but they should be provided with an opportunity to deal with that issue; to do their own action and to see a change.

Experience of a success might have two positive effects on pupils. At first, it can develop a belief in their capacity to promote changes in their environment (Hungerford, & Volk, 1990). They can start to believe that there is sense in doing something and they can make a difference. Furthermore, they develop practical skills for dealing with environmental issues and they believe they are able to effectively apply them.

According to TPB and other authors (Bandura, 1977, Ajzen, 1991), a perceived level of action skills (and similar variables called 'behavioural control', 'self-efficacy', or 'action competence') is another crucial precondition to proenvironmental behaviour. We do what we believe we are able to do.

In environmental education, dealing with the real-world issues is crucial for developing action competence. Place-based education, service learning, or issue-oriented strategies usually work well (Powers, 2004, Jensen & Schnack, 2006, Bardwell et al., 1994, Marcinkowski, 2001, Marcinkowski, 2004).

More questions that might be discussed…

Is our behaviour always a matter of consciousness choice? Some scholars discuss the importance of routine. We can imagine that in situations where relatively common behaviour is in play many people do not think about what they are doing but instead run on 'autopilot'. Some kinds of behaviour (e.g. recycling, switching of lights, etc.) can be simply taught in early childhood to become routine (Heimlich, & Ardoin, 2008).

Social marketing offers a plethora of instruments for promoting proenvironmental behaviour. McKenzie-Mohr et al. (McKenzie-Mohr, Schultz, Lee, & Kotler, 2012) recommends various forms of commitment of a target group (e.g. participants can sign a letter promising some kind of behaviour, students may write down a commitment about what they will change in their personal lives, etc.), or instruments for shaping social norms in a community (e.g., participants can get a sticker expressing their behaviour on a car window, their names can be added on the website promoting some kind of action, etc.).

However effective strategies might be, enforcing EE has also opened some serious ethical debate. Although we might suppose there is a strong social consent to promoting some areas of proenvironmental behaviour (e.g. not littering in the forest), in many other areas it is argued that there should remain a realm of free choice. With a few exceptions, teachers should not force pupils towards a desired behaviour and should respect their decision to act in an environmentally irresponsible way.

In a Czech school a headmaster decided to change the assortment of food in a school cafeteria to make the school more 'healthy'. No chocolate or sweet drinks could be bought, pupils were supposed to eat only healthy food and vegetables. However, pupils did not accept this measure. They argued that they did not like healthy food and it was too expensive. As a result, they started to buy food from a shop just outside the school.

Some scholars (Breiting, & Mogensen, 1999, Jensen, & Schnack, 2006, Wals, 2012) believe that focus on proenvironmental behaviour in EE is both unethical and ineffective. In the real world, we often face complex scenarios without easy and clear solutions. Because of this, pupils should not focus on prescribed behaviour but on so called 'action competence', e.g. competence for

dealing with complex situations in the future world. Such competences are often connected with forming a vision, holistic and critical thinking, or openness to various points of view. To develop them, pupils should be provided with an opportunity to participate in formulating goals and activities of the projects they work on.

To sum up: what we may do in EE

In spite of many uncertainties, it is clear that some strategies bring positive results and some do not. We may consider following this list of brief recommendations:

- Awareness-based strategies may increase understanding of environmental issues but they often lead to apathy and hopelessness. If it is possible, EE programmes should be action-based, e.g. provide the opportunity to change something and see the effect in the real world.
- The role of attitudes is still discussed. However, increasing environmental sensitivity of young pupils might be a precondition of their future interest in responsible environmental behaviour.
- Subjective norms play important roles in our decisions to do something or not. Community-based programmes seem to be more effective strategies than individualistic approaches (McKenzie-Mohr, Schultz, Lee, & Kotler, 2012).
- Some types of behaviour, like recycling, not littering, etc., might be developed in early childhood to become routine. However, broad social consent is needed.
- Pupils should not be forced towards proenvironmental behaviour. To develop competences for dealing with complex scenarios might be a more appropriate response to environmental crisis than to develop skills suitable for just a specific area.

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Tab 1 Comparison of selected models of pro-environmental behavior

Model	Abbrevi-ation	Authors	Basic assumption	Influence	Relevance according to contemporary EE theory
Knowledge-attitude-behaviour theory	K-A-B	Traditional belief	When people learn new information, they change their attitudes, and it causes change in their behaviour.	Worldwide spread in EE programme theory	Not generally accepted to be true, or useful.
Responsible environmental behaviour	REB	Hungerford, Volk	Responsible behaviour is developed as an interplay of three categories: environmental sensitivity, in-depth knowledge of an issue, action knowledge and skills, and internal locus of control.	EE curricula – what should be taught and when	Important model that changed the way we think about EE (predicting human behaviour is probably outdated).
Value-belief-norm theory	V-B-N	Stern	Responsible behaviour is rooted in altruistic values that shape our attitudes and this, together with understanding of our impact on the environment, gives us motivation to act.	Approaches in EE that emphasises values	Possible model but probably weak in prediction of human behavior, might work well for some areas of behaviour (e.g., public action).
Theory of planned behaviour	TPB	Ajzen	Human behaviour (intention to act) is shaped in the interplay of attitudes (based on belief of pros and cons of behaviour), personal norms (based on belief of what people important to us think and do) and perceived behavioural control (how much we believe we are capable of such behavior).	General theory for various areas of human behaviour, often used for the explanation of environmental behaviour in particular areas (e.g. buying organic food, etc.).	Generally considered as a sound theory strong in prediction of particular behavior.
Meta-analytic structural equation modeling	MASEM	Bamberg, Möser	Elaborates the TPB for environmental behaviour; intention to act is shaped by an interplay of more variables. Includes problem awareness, internal attribution, feelings of guilt.	Quite a new model and not particularly influential.	Some scholars believe it might be a very powerful model but it has not been validated enough yet.