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## **What Kind of Critical University Education for Sustainable Development? A Comparative Study of European Students and Social Representations**

In the course of the institutional integration of education for sustainable development (ESD), university courses have been going through rapid changes, but this process can be blocked or aided by each country's peculiar features, whether institutional, financial, cultural or other. This article proposes an examination of the specific socio-educational characteristics of the implementation of ESD based on a study of the social representations of students in three European countries (Germany, France and Poland), and in two types of Master's level university education. The paper initially focuses on the differences and similarities in the student research groups. It then analyses the representational components in terms of the possible impacts on the implementation of ESD at the university from a critical, citizenship perspective. Despite the differences in the students' representational structures in the various countries, we can see that, in the three national groups, the social representations of sustainable development are highly focused and have a highly fragmented character. The lack of systematization of the different elements of the representation poses barriers to critical education, although this takes different forms in the different countries.

### **Keywords**

Education for sustainable development, Critical education, Social representations, University, France, Germany, Poland

### **1 Introduction**

The incorporation of education for sustainable development (ESD) into contemporary education systems represents a response to the United Nation's programme for sustainable development (Sauvé 2006). The United Nations Educational, Scientific and Cultural Organization (UNESCO), acting as an implementing agency of the UN, is holding a "decade of education for sustainable development" (2005-2014), with the objective of stimulating the reform of educational systems and curricula, including universities, to promote sustainable development (UNESCO 2005). Taken up by the European authorities, and then the member States, this has led to steadily increasing demands on universities. It is commonly agreed that higher education institutions should lead the way towards the achievement of sustainable development (SD) through education in this field (AdomBent, Godemann, Michelsen 2007; Ashford 2004; Beringer, AdomBent, Scott 2008; Ferrer-Balas, Adachi, Banas, Davidson, Hoshikoshi, Mishra, Motodoa, Onga, Ostwald 2008; Richter, Schumacher 2011; Steiner, Posch 2006; Sterling, Scott 2008).

In this sense, the Declaration of Talloires (1990) is the first official mark of the universities' commitment to promote education for sustainable development. Signed by 350 universities, it is intended, among other things, "to create an institutional culture of sustainability" (Declaration of Talloires, 1), and to emphasize education that leads to "ecologically responsible citizens" (ibid.). At the national level, there is a realization of international and European policy. For

example, since September 2009, higher education institutions in France have been developing a "Green Plan" for the campuses. In Germany, the education system depends on the Länder (states), which makes the development of a national strategy more complex. Nevertheless, a common will does exist, as can be seen in the Declaration of the Hochschulrektorenkonferenz (HRK, the German Rectors' Conference<sup>1</sup>). In Poland, there is no specific national strategy for Higher Education for Sustainable Development (HSED). The National Strategy for Environmental Education through Education for Sustainable Development (2001) and the National Conference on Education for Sustainable Development in 2005 have laid the groundwork for the organization of ESD and HESD.

In this context of the institutional integration of education for sustainable development, university courses are undergoing rapid changes (Adomßent, Godemann, Michelsen 2007; Barthes, Alpe, Bader 2012), but they encounter drivers or barriers in the existence of features specific to each country (institutional, financial, cultural, etc.). Wals and Blewitt (2010) provide an interesting analysis of the implementation of sustainable development in higher education and conclude that institutions are entering a "third wave" (after the "environmental" wave and the "green campus" wave) that is focused on teaching and learning about sustainability. However, uncertainties in scientific fields (Pouliot, Bader, Therriault 2010), the multitude of definitions in reference materials (politicians, experts, scientists, etc.) (Alpe, Legardez 2011; Simonneaux 2011), the different regional and organizational cultures of the actors and institutions involved all affect the implementation of educational strategies related to sustainable development (Girault, Sauvé 2008). At the same time, beliefs, convictions and social representations with deep cultural roots also affect the ways that educational strategies related to sustainable development, considered as a socially acute question (Legardez, Simonneaux 2011), are being implemented in different places (Floro 2011; Freudiger 2010; Marquis 2001; Simonneaux, Simonneaux 2009). With all this in mind, this article proposes, firstly, to understand the specific features of the implementation of ESD in three European countries – Germany, France and Poland – based on the social representations (Abric 2004; Jodelet 1989) of students studying for a Master's of European Studies or a Master's in Geography with a Globalization-Development option. The representational components will then be analysed in terms of their possible impacts on the implementation of education for sustainable development from a critical perspective. According to Jodelet (1989) a social representation is defined as a form of knowledge, which is socially elaborated and shared and which contributes to the construction of a common reality to a social group.

## **2. Social Representations as a Method for Exploring Cultural Specificities with Respect to ESD**

### **2.1 Background**

Like all "educations for", ESD is confronted with the problem of defining its content, a process that has been accompanied by some rather lively debate (Alpe, Legardez 2011; Simonneaux 2011). Generally, these forms of education refer to knowledge that is relatively unstable and marked by uncertainty. Moreover, it often involves the translation of "social concerns that are more or

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<sup>1</sup> [http://www.hrk.de/index\\_eng.php](http://www.hrk.de/index_eng.php)

less considered as emergencies" (Audigier 2005, 117), with academic knowledge no longer the sole reference for dealing with these new educational subjects. The "educations for" are concerned with citizenship; they refer to social practices and include political dimensions (Audigier 2005). But the introduction into the education system of issues like these that divide and mobilize is not simple. Tutiaux-Guillon (2011) stresses that ESD, which goes beyond disciplinary knowledge and involves education in behaviour and skills (citizenship), is – in the real curriculum – most of the time reduced to education in "good gestures" (Barthes, Bader, Alpe 2012), whereas it could promote the empowerment of learners who are able to think and to come to a position on issues.

Many researchers in the field of environmental education and more recently ESD have supported the need for critical education that aims to help learners develop an awareness of the power games and ideological influences that shape our ways of seeing the world and our relationship to the environment, so as to encourage critical questioning of our society aimed at social change (Bader 2011; Fien 1993; Fortin-Debart, Girault 2009; Girault, Sauvé 2008; Gough 1997; Robottom, Hart 1993). From this perspective, Bader (2011) argues for the importance of a critical and reflexive view of the utilitarian ideology that dominates our relationship to the world. The author points out that critical theory "denounces in particular the recourse to instrumental rationality that relies on a certain conception of science, enclosed in a positivist paradigm, and that focuses on technology as the source of any solution [to environmental problems]" (Bader 2005, 109, quoting Sauvé 1997, 171). Along the same lines, following Carr and Kemnis (1986), Simonneaux and Legardez (2011) take up the distinction between critical and technical rationality; the latter emphasizes technical solutions to problems and excludes individual reflection to control the world, even though it is essential for an awareness of reality and engagement in action for social transformation. According to Simonneaux (2006), critical ESD should thus encourage students to learn the scientific contents at hand, to better understand the controversies about them and to analyse their social impact (economic, political, ethical, etc.). The author stresses that this is not just to convey technical knowledge, but to educate "people who are informed about research methods, their applications and their possible effects, and who are able to make balanced decisions and participate in debate" (Simonneaux 2006, 40).

Critical education also relates to the idea of citizenship, which involves the concept of citizen participation in decision-making. If we take the scale of analysis used by Fortin-Débart and Girault (2009), this is measured by three states of participation: non-participation, consultative participation, and participatory budgeting. It can have two aims: a deliberative aim (citizens fuel the decision-making process because they are trained in the controversies), or an emancipatory aim in a critical perspective (Robottom, Hart 1993), which involves civic participation in the decision-making process. While the deliberative aim remains at the level of consultation, it is the emancipatory orientation, with its objective of transforming environmental and societal realities that aims at genuine participation. Citing Robottom and Hart (1993), Fortin-Debart and Girault (2009) again point out that this critical questioning of reality and this commitment to action are more effective when they are collective rather than just individual. From this citizen-based perspective, critical education would then be "education in power (Audigier 2006) that aims at providing the skills to participate in the life of the city (public life, politics, everyday life)" (Fortin-Debart, Girault 2009, 131), knowing that participatory ESD runs the risk of

repeating dominant positions and hegemonies, like mentioned by Læssøe (2008).

It is in this educational perspective that we situate our analysis of the social representations of sustainable development in. Indeed, considering knowledge as a social construction, critical education requires prior identification of learners' representations about the subject of the education so as to propose didactic strategies that take this into account (Bader 2011; Gough 1997).

Sustainable development raises socially controversial issues in education (Legardez, Simonneaux 2006, 2011) and evokes social representations that can be used as a tool for understanding student knowledge. By making use of the social constructivist approach (Vygotsky 1997) to education, we highlight the importance of an analysis of social representations as an anchor point for initiating the learning process. This seems especially important since, in contrast to ordinary disciplines, this new material is marked by the heterogeneity of academic references. Even if the past two decades have seen the emergence and establishment of sustainability sciences as an inter- and transdisciplinary field that has provided elaborated accounts of sustainability issues, it seems that there is great heterogeneity of disciplinary knowledge and no universally valid consecutive curriculum (Barthes, Alpe, Bader 2012).

The social representations approach takes into consideration the role of the sociocultural and historical context in the construction and sharing of representations (Abric 1994; Jodelet 1989; Moscovici 1961; Wagner 1994). With regard to our research subject, it can be argued that although there is an institutional definition of SD often used as reference – that of the Brundtland report and the conferences that followed – the subject remains complex and “in practice, the concept of sustainability is value-laden and ultimately rests on how we human beings, or rather societies, perceive our relationship to the extra-human world” (Jickling 1998-1999, 82)<sup>2</sup>. This position is also relevant to the characteristics of ‘educations for’. Indeed, these impose a different relationship to scientific knowledge, which can no longer be considered neutral and dissociated from the context in which the knowledge is born (Pouliot, Bader, Therriault 2010; Barthes, Alpe, Bader 2012). Moreover, this is also the reason why there is an important debate about transdisciplinarity in ESD (Steiner, Posch 2006; Considère, Tutiaux-Guillon 2012).

Numerous studies show that social representations related to sustainable development differ with the context, including with respect to the country (Caillaud 2010; Floro 2011; Freudiger 2010; Marquis 2001), the profession or the discipline (Summers, Childs, Corney 2004; Urgelli 2009). In a comparative study between the French and Germans, Caillaud (2010) shows, for example, that environmental issues are more mentioned in Germany. Moreover, whereas among Germans she observes a moral objectification of ecology, which treats the relationship between humans and nature in terms of interdependence, the French consider the relationship between humans and nature only in the sense of the domination of nature by mankind, which causes them to objectify ecology as a set of risks (economic). In another comparison, between Quebec and Senegalese students, Marquis (2001) observed a Quebec representation of the environment as nature to be protected and a problem to be solved, and a Senegalese representation of the environment that was similar to that of their

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<sup>2</sup> It is important to note, that the Brundtland definition is located on the very top level of an idea and in the scientific literature, one can observe different normative orientations (see for example Ott's approach to strong sustainability: <http://23dd.fr/images/stories/Documents/DD/Strong-sustainability-Konrad-Ott.pdf>)

daily lives, the milieu of their family and community life. In addition, various studies have brought to light a gap between the institutional definition of sustainable development and the related social knowledge (Barthes, Legardez 2011; Jeziorski, Ludwig-Legardez 2011; Lebatteux 2011; Summers, Childs, Corney 2004). Richter and Schumacher (2011) have realized a very interesting study about HESD in the German context. Mainly, they observe a large gap between the political discourse on the one hand and the interest of students in sustainability issues and the implementation of HESD in the standard curricula on the other.

Our study has the aim to complete the research about ESD and HESD by his comparative character and the analysis of students' knowledge in terms of drivers and barriers to the teaching and learning process. It is guided by three key questions:

- Do students have a social representation of sustainable development? If so, what is its content and how is it structured?
- What are the differences and common points between the social representations of French, German and Polish students?
- Finally, do the representational components specific to each national group represent drivers or barriers to the implementation of the critical dimension of ESD?

## 2.2 Theoretical Elements

The act of representation is traditionally defined as "a presentation of something in someone's mind" (Bonardi, Roussiau 1999), and it is considered a genuine method for understanding reality. It involves a process whereby a subject or a group internalizes an object so that it becomes an object of thought whose content is substituted for reality. The internalized object is thus a represented reality that is appropriated by the individual or group. But this reconstruction by the subject remains inseparable from the history and social and ideological context of the individual or the collective. Moscovici argues that this reconstruction is an intrinsic part of the social bond and that it must be interpreted within this framework (Moscovici 1961). Representation is thus always social in that the act of representation involves incorporating both the objective characteristics of the object represented, the specific features of the subject or the group, and elements from its normative context. Social representations are therefore a powerful tool for analysing the normative systems of a group at a given point, and it is this that interests us as part of the comparative analysis of the national study groups. We apprehend the world through differentiated representations. Contacts between cultures through travel and trade, for example, demonstrate clearly that knowledge that is obvious in one location is not so obvious in another. All reality is "appropriated by the individual or the group, reconstructed in their cognitive systems, and integrated into their system of values, which depends on their history and the surrounding social and ideological context" (Abric 1994, 12).

Studying a social representation and understanding how it works requires studying its content and structure. To this end, Abric (1994) explains that a representation is organized around a central core that gives the representation its meaning and its coherence. Around this structuring core, the cornerstone of the representation, are organized the peripheral elements. The central core, or nucleus, is structural; it constitutes a stable element and takes on for the group or individual the status of being obvious. Its role is thus important insofar as it

provides the framework for categorizing any new information proposed about the object represented. The core contains a set of hierarchical elements that are particularly important in the representation, as they give it its meaning. The concept of the core is also related to the identification of the individuals in a social group, as the core ensure its homogeneity. The core is thus determined not only by the nature of the object represented, but also by the relationship that the subject or the group has with it, and finally by the system of values and norms that define the ideological context (Abric 1994). It is therefore the identification of the central core that allows the comparative study of the representations.

The peripheral elements are arranged around the central core. The peripheral elements are directly dependent on the context and result from the anchoring of the representation in reality. They help render any new information about a given contextualized situation tangible, understandable and communicable. They prescribe behaviour and guide instantaneous reactions to a specific situation by designating what it is normal to do or say in a given situation.

According to Verges (1992), for example, the social representation of money is structured around the central elements "work" and "quality of life", ensuring stability. The expressions "ease" and "luxury" are peripheral elements that would reflect individual variations. Thus, social representation can grade terms related to the studied group, and hierarchical structure and explanation hypothesis can emerge.

### **2.3 Study Group and Research Methodology**

In an attempt to answer the questions posed in this study we focused on the quantitative approach introduced by Vergès (1994, 2001), for its reproducibility, which makes possible comparisons (temporal, inter-group, inter-cultural), including with benchmarks. Data were collected using a printed questionnaire. The respondents were asked to answer the questionnaire in their language (French, German and Polish). The analysis was realized in the three languages.

The elements of the central core and the peripheral elements of a possible social representation of sustainable development were collected by activating the representational process through spontaneous evocation by a question: "Which word or which phrases come to mind when you think about sustainable development? Give at least four words or phrases, and at most ten". To analyse the answers to this question, two working steps were necessary. We first performed a categorization of the items mentioned by respondents based on their lexical proximity. In a second step, two indicators were considered: the frequency with which each term occurred in the responses of the surveyed population, and the order of appearance of the term. Each item discussed (and grouped) results in an average rank and an average frequency. Crossing these two indicators gives us a graphical representation, with the frequency on the ordinate and the ranking on the abscissa. To compose the four quadrants, we need to produce discrete information. For the frequencies we use a method based on main gap, considered as significant for social representation (Abric 1994). For the average rank, we use a classical method based on mean and standard deviation, also related to Abric's method (the number of words are not the same, so the average rank is always different). This also tells us about the possible existence of the central elements and peripheral elements of the social representation. This analysis can be used to draw up a table that provides a direct reading of the information in four categories: central core, and first,

second, and third peripheries. Only items mentioned by at least 30% of the respondents entered into the representation linked to Verges Theory (Verges 2001). This analysis was performed using the EVOC2000 programme, but it can be done manually (Figure 1).

*Figure 1: Method of reading social representations in terms of frequency and order of appearance (rank)*

<b>High frequency</b>			
<b>First ranks</b>	Elements whose frequency is low and which are in the first ranks <b>Presumption of centrality</b>	Elements whose frequency is high et which are in the far ranks <b>First periphery</b>	<b>Far ranks</b>
	Elements whose frequency is high and which are in the first ranks <b>Second periphery</b>	Elements whose frequency is low and which are in the far ranks <b>Third periphery</b>	
<b>Low frequency</b>			

The survey population consisted of students preparing a Master’s degree in European Studies in France, Germany and Poland<sup>3</sup>, and students preparing a Master’s in Geography in France and Germany. The total population of 157 students breaks down into 22 Polish students, 30 French students and 39 German students in the first grouping, and 44 French and 22 German students in the second. All participants were aged 23 to 27<sup>4</sup>.

This article, which is centred on an analysis of German, French and Polish cultural specificities with respect to the social representations of sustainable development among students, presents only a marginal discussion of differences related to the two different Master’s degrees (Figure 2).

*Figure 2: Survey population (number of surveyed individuals)*

	Master in European Studies	Master in Geography	Total
France	30	44	74
Germany	39	22	61
Poland	22	0	22
Total	91	66	157

Here we would like to make two conclusive remarks regarding the characteristics of our national student groups. First, issues of sustainable

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<sup>4</sup> The Polish and the German students were all born in the respective country. Five of the French students were born in other countries than France, but they lived in France for at least five years.

development are central to both academic contexts. Second, depending on their respective requirements, the two programmes studied give great importance to the interdisciplinary and critical nature of the education. With this in mind, we submit the hypothesis that both programmes offer a positive framework for the implementation of ESD with a critical perspective.

### 3 The Social Representations of French, German and Polish Students – Differences and Similarities

#### 3.1 French and Germans: Relatively Common Representations

From a comparative perspective, the analysis of the similarities and differences between the two types of education and the three national study groups reveals relative agreement between the German and French students, as well as between the two different Master's. An examination of the responses thus led to hypothesize the existence of a relatively shared social representation. This appears to be structured primarily around the environmental dimension, in terms of both protection and the use of resources. This environmental dimension, which contains the categories *environment* (with environmental protection) and *energy* (mainly referring to renewable or clean energy, a dimension of eco-efficiency) for the two sub-populations and the category *resources* for the Germans, appears to constitute the central core of any representation. This sphere seems to be especially important given that we find other elements associated with it in the periphery. In both cases the categories *ecology* and *climate change* seem to be relatively close to any such core. Furthermore, the intergenerational dimension is represented by the elements *future generations*, *the future* and *long-term*. These appear in the two sub-populations in the periphery close to the core. The dimension is slightly more developed among the Germans, 67% of whom cite it, compared with 50% of the French. Note that the Germans have a more technocratic vision, with the idea of calling on science and technology as the method of problem-solving. (Figures 3, 4, 5, 6)

Figure 3: French students preparing a Master in European Studies – graphical representation of the frequency and the ranks (100% = 30)

Average rank < 3,2	Frequency %	Average rank > 3,2	Frequency %
environment	77		
energy	57		
ecology	37	climate change	40
the future	23	nature	23
economy	20	pollution	10
green	17		10
future generations	13		
long-term	13		
responsibility	13		
development	13		
consumption	13		
regions	10		
other growth	10		
planet and humanity	10		
transport	10		



*Figure 4: French students preparing a Master in Geography – graphical representation of the frequency and the ranks (100% = 44)*

Average rank < 3,2	Frequency %	Average rank > 3,2	Frequency %
<b>environment</b>	77		
<b>energy</b>	57		
<b>ecology</b>	56		
nature	39	spatial issues	40
the future	38	agriculture	35
to protect	34	coat and sustainable transport	30
pollution reduction	31		
recycling	30		
danger	25		
responsibility	22		
future generations to consume different	20		
climate problem	20		

*Figure 5: German students preparing a Master in European Studies - graphical representation of the frequency and the ranks (100% = 39)*

Average rank < 2,9	Frequency %	Average rank > 2,9	Frequency %
environment	49	future generations	31
energy	44		
resources	28		
ecology	18	technology	13
the future	18	development	10
long-term	18	agriculture	8
climate change	15	efficiency	8
education	15	politics	8
		precaution	8
		responsibility	8
		economy	8

*Figure 6: German students preparing a Master in Geography - graphical representation of the frequency and the ranks (100% = 22)*

Average rank < 2,9	Frequency %	Average rank > 2,9	Frequency %
<b>environment</b>	76		
<b>energy</b>	58		
<b>resources</b>	55		
ecology	39	relationship between men and environments	34
the future	32	sustainable farming	22
future generations	30	back to basics	22
green	30	spatial organization	21
climate change	29		
responsibility	29		
precautionary principle	28		
sciences and technology	25		
sensitize	22		

### 3.2 Very Different Polish Results

The results of an analysis of the responses of the Polish students are very different from those of the Germans and French. First were listed the terms balance and equality, which structure the central core, referring to the inductor term balanced development (the Polish translation of “sustainable development”). No mention is made of eco-efficiency, even though it is present in the core of the French and Germans. The environmental sphere and theoretical concern for future generations appear in 27% and 14% of the occurrences, respectively, but they are not central. The educational dimension appears in the second periphery, while it is not considered as such by the French and Germans. The rich-poor category is among the most cited, but more distant in the ranking. It appears in the first periphery and can be interpreted as a more concrete application of the elements balance and equality. Other terms that are cited less often may also refer to this dimension: development and improvement to achieve balance and equality. The European Union, cited in terms of funding, is associated in the first periphery with the notion of cooperation, which is related to the idea of development. These notions are entirely absent from the social representations of the French and Germans. (Figure 7)

*Figure 7: Polish students preparing a Master in European Studies - graphical representation of the frequency and the ranks (100% = 22)*

Average rank < 3,1	Frequency %	Average rank > 3,1	Frequency %
balance	41	rich-poor	27
equality	32		
environment	27		
developement	23		
improvement	18	rationality	18
education	18		
the future	14		
cooperation	14		
interdisciplinary	14		
European Union	14		

Based on the analysis of the spontaneous evocations, we can conclude that in terms of the differences in the national study groups, in addition to the environmental aspects on the one hand and the social aspects on the other, the Germans and the French emphasize the dimensions of eco-efficiency and intergenerational effects, while Polish students more often evoke forms of international cooperation for the purpose of sustainable development.

### 4 Drivers & Barriers to a Critical ESD and Social Representations

Thus, after identifying the elements of a possible social representation of sustainable development of French, German and Polish students, we will discuss the results presented above in terms of being drivers and barriers to the proposed educational perspective.

Addressing the notion of critical education concretely requires a dual approach. The first involves the identification in the social representations of what constitute the foci. The foci are the themes on which knowledge is concentrated, to the detriment of other themes which are thus obscured. Moliner (1996) argues that focusing prevents individuals from having a global vision of

the object. The second approach involves identifying the elements that make systems. Indeed, when the elements make up systems, the issue of complexity can be addressed. The ability to address complexity is a prerequisite for the formation of a potential critical thinking. Note that the existence of foci often results in a fragmented social representation: not only do they prevent the individual from possessing a global vision of the object, but they also prevent putting the elements of the representation into a system, and hence developing a critical educational perspective.

#### **4.1 Analysis of the Social Representations of SD with a Perspective of Developing a Critical ESD: Main Results**

If one analyses the previous elements of the social representations of the German, French and Polish students with a view to establishing a critical ESD, two major tensions can be seen. The first is between the need – from a critical education perspective – to address the complexity of SD and the centring of the students on the environment, and the second is between the need – again from the perspective of critical education – to address the collective organization of society versus the recourse by the students to everyday individual action. The obstacle to critical thinking would tend to be magnified in line with the domination of the second term in these tensions.

##### **4.1.1 What are the Barriers to Dealing with Complexity?**

The social representation of sustainable development of the five groups analysed has a highly fragmented character. The foci are very strong and corroborate the results obtained previously in France (Barthes 2011). A focus on the environmental sphere and eco-efficiency, especially among the German and French students, may prevent these students from understanding the complex processes involved. Given these highly focused social representations, it could be said that there is a great risk of a view of sustainable development that does not comprehend its complexity, and thus does not relate to the possible dimension of critical education. Indeed, dealing with sustainable development in a critical education perspective requires consideration of its systemic and multi-scale nature (Tutiaux-Guillon 2011).

Based on the analysis of the foci of the social representations, the absence of political, economic and institutional issues in the central core of the representation, especially among the Germans and French, indicates their fragmented nature, which thwarts an understanding of the complexity of the concepts taught. The *economy* was mentioned by both groups, and *politics* only by the Germans, but both dimensions are part of the peripheral elements, and thus not organizing elements of the representation, whereas they are in fact central components, the result of political consensus (Gough 1997; Jickling 1992; Sauvé, Berryman, Brunelle 2003; Sauvé 2006). While the Germans and French take little account of the role of political and institutional authorities in promoting sustainable development, the Poles seem to be more aware of this dimension, especially when they evoke elements involving *cooperation* and the *European Union* and highlight the active character of international and European organizations. An analysis of the results concerning sustainable development actors confirms this hypothesis: according to the majority of the Poles (73%), global cooperation and the EU aid, introduce, create and make efforts, etc., EU aid is contributing to sustainable development in particular through its

assistance to poorer countries / regions (47%). In contrast, the Germans and French mainly respond that these two factors do not do enough for sustainable development. Finally, based on the analysis, no group of students is considering a form of political-civic action either in their social lives or in their future professional lives.

Finally, it seems important to note that there is a patent absence of debate and of a sense of the controversial nature of an issue that is as socially contentious as sustainable development, although this characteristic is well established in the reference knowledge and practices. Indeed, sustainable development is more a set of contested ideas than a stable concept (Legardez, Simonneaux 2011; Lundegård, Wickman 2007; Scott, Gough 2004) Thus, the students consider neither the critical dimensions, nor alternative models, nor the element of complexity. Moreover, the focus on the environmental sphere is centred on a very specific representation of the environment. The students' evocations of *resources* and *energy*, of potential candidates for being components of the central core of the social representation of sustainable development, indicate the reduction of the environment to a resource in the service of human beings. A critical approach to education should seek to challenge this utilitarian view, which is at risk of an ideological use of educational discourse to "support a certain view of the world" (Astolfi 2006, 9).

#### **4.1.2. Dealing with the Collective Organization of Society Versus Recourse to Individual Action? Differences Between the Groups**

However, there is a differentiation with the Polish group, for which the social representations are a less pronounced and more nuanced obstacle than in the case of the French and German students. Indeed, the elements of focus did not themselves even refer to the same dimensions. The foci of the social representations related to sustainable development in France and Germany refer to notions of eco-efficiency (waste sorting, cycling, buying organic products, saving energy, etc.) and to good habits. Reflection and education are on the margins of the student responses on the focused character of sustainable development, as is evidenced by other investigations too (Floro 2011; Freudiger 2010; Lebatteux 2011; Tutiaux-Guillon 2011). This kind of behaviourist approach in relation to sustainable development indicates a low reflective approach (Lebatteux, Legardez 2010). This element of behavioural focusing constitutes an additional obstacle, making it impossible to put the reality at a distance. The question thus arises as to whether, even at the university, education does not simply amount to a lesson in ethics that emphasizes the politically correct at the expense of knowledge (Legardez 2006). Indeed, the salience of individual action and individual responsibility (present in the second periphery) shows that education lacks a distancing from practice (Alpe 2006) and hence does not set the problem of the collective and systemic organization of society. A lack of social distancing from local social practices is a barrier to a critical educational perspective on sustainable development. Indeed, in a critical approach to education, it is necessary to go beyond the level of local and individual action. As emphasized for example by Freire (1974), social transformation cannot be achieved only at the individual level, but must also be a collective undertaking. The point here is not to condemn all subjective action, but from the dialectical perspective of critical education, "it is only in the combination of these two elements, when the subjective constitutes a dialectical unity with the objective, that authentic praxis becomes possible" (Freire 1974,

29). This perspective is emphasized more recently by Grunwald (2011) in the field of sustainable development.

This type of focusing-obstacle is not found in the Polish social representations, which are oriented more towards the collective organization of society, and towards at least one problem to be addressed (rich-poor).

Thus, the Master's programme results in a partial, though differentiated, social representation, obscuring the complexity of sustainable development, which could be an obstacle to a critical, albeit formally proclaimed, dimension, especially among the French and Germans. In addition to this finding, the societal challenges are important. To underscore the importance of our findings, consider the example of the Master's students in European Studies. Since the European Union proclaims sustainable development to be one of its fundamental transversal objectives, potentially the students will have to deal with this when they respond to a call for EU projects. Thus, to avoid the risk of simply training managers in the service of the governing bodies, and in accordance with the educational objectives of forming critical citizens, it seems crucial that education strives to broaden the students' representations, by taking on board complex elements, their mutual relationships and the challenges that they give rise to, particularly if one considers that the role of education in general and higher education institutions in particular is not only to provide a certain level of employability, but to go beyond that (Adomssent 2006).

## **Conclusion**

In this article we have considered the obstacles to the implementation of education for sustainable development from a critical citizen-oriented perspective.

In light of the proposed approach and our results, two main conclusions can be drawn. First, one can hypothesize that there are different social representations of sustainable development based on the sociocultural and political context, and on educational background. In terms of differences between the research groups, we have identified a centring on the environmental aspects and the intergenerational dimension among the German and French students, on the one hand, and, on the other hand, an emphasis on the social aspects and the dimension of international cooperation among the Polish students. But in the three national groups, the social representation of sustainable development is highly focused, despite the method (open question) often lead to multiple answers (Abric 1994; Moliner 1986), and has a highly fragmented character. As a result, it blocks a comprehensive view of the subject and the systematization of the elements of representation, and thus a grasp of the complexity involved. In addition, and as an element of differentiation between the research groups, the centering of the French and German students on everyday individual action at the expense of collective action and political-civic activity is an additional obstacle, which does not appear in the Polish group.

These elements are important social and educational characteristics that should be taken into account whenever university courses seek to develop a critical citizen-oriented ESD, as set forth in the form of principles in the programmes studied. These have the objective, at least in theory, of promoting the acquisition of knowledge, analytical skills, and an ability to think and take a critical distance. Besides the impact of the stated objectives, it is important to clarify that a critical approach to education for sustainable development should make it possible to challenge the highly utilitarian and developmentalist view

that seems to have been adopted by current programmes, and at least by the Master's in European Studies and the Master's in Geography with a Globalization and Development option.

## References

- Abric, Jean-Claude. 1994. *Pratiques sociales et représentations*. Paris: PUF.
- Adomssent, Maik. 2006. *Higher Education for Sustainability. New Challenges from a global Perspective*, Frankfurt am Main: Verlag fuer Akadademische Schiften VAS.
- Adomßent, Maik; Godemann, Jasmin; Michelsen, Gerd. 2007. Transferability of approaches to sustainable development at universities as a challenge. In: *International Journal of Sustainability in Higher Education*, Vol. 8, No. 4, 385-402.
- Alpe, Yves. 2006. Quelle est la légitimité des savoirs scolaires? In: Legardez, Alain; Simmoneaux, Laurence (eds.). *L'école à l'épreuve de l'actualité, enseigner les questions socialement vives*, Paris: ESF éditeurs, 233-246.
- Alpe, Yves; Legardez, Alain. 2011. Le curriculum sournois de l'éducation au développement durable: l'exemple de l'usage de certains concepts économiques. Communication au colloque international francophone Le développement durable: débats et controverses, 15 et 16 décembre 2011, Université Blaise Pascal (<http://www.oeconomia.net/private/colloquediufm/30.colloquedd-alpe-legardez.pdf>).
- Ashford N. A. 2004. Major Challenges to Engineering Education for Sustainable Development: What Has to Change to Make It Creative, Effective, and Acceptable to the Established Disciplines? In: *International Journal of Sustainability in Higher Education*, Vol. 5, No. 3, 239-250.
- Association of University Leaders for a Sustainable Future (1990). *The Talloires Declaration* (<http://www.ulsf.org/pdf/TD.pdf>).
- Astolfi, Jean-Pierre. 2006. Les questions vives en question? Préface. In: Legardez, Alain Simmoneaux, Laurence (eds.). *L'école à l'épreuve de l'actualité, enseigner les questions socialement vives*. Paris: ESF éditeurs, 9-12.
- Audigier, François. 2005. Les enseignements d'histoire et de géographie aux prises avec la forme scolaire. In: Maulini, Olivier; Montandon, Cléopâtre (eds.). *Les formes de l'éducation: variété et variations*. Bruxelles: De Boeck, 103-122.
- Bader, Barbara. 2005. Rapprochement interdisciplinaire entre éducation aux sciences, citoyenne et l'éducation relative à l'environnement: points de vue de chercheurs et formation des enseignants. In: Sauvé, Lucie; Orellana, Isabel; van Steenberghe, Étienne (eds.). *Éducation et Environnement – Un croisement de savoirs*. Collection Les Cahiers scientifiques de l'Acfas (Association francophone pour le savoir) Montréal, Vol. 104, 109-119.
- Bader, Barbara. 2011. Education à l'environnement dans une société du risque: la conception des sciences privilégiée de l'éducation au développement durable. In: Bader, Barbara; Sauvé, Lucie (eds.). *Éducation, environnement et développement durable: vers une écocitoyenneté critique*. Québec/Canada: Presse de l'université de Laval, 223-250.
- Barthes, Angela, 2011. Comment réintroduire les savoirs face à l'éducation au développement durable? Exemple des filières professionnelles d'aménagement des territoires. In: Alpe, Yves; Girault, Yves (eds.). *Éducation au développement durable et à la biodiversité: concepts, questions vives, outils et pratiques*, Refere, Uqam: Montreal. ([http://www.refere.uqam.ca/FR/publications\\_mono.php](http://www.refere.uqam.ca/FR/publications_mono.php)).
- Barthes, Angela; Legardez, Alain. 2011. Objectiver l'enseignement des questions socialement vives? Un exemple en éducation au développement durable à l'université. In: Legardez, Alain; Simmoneaux, Laurence (eds.). *Développement durable et autres questions d'actualité. Les Questions Socialement Vives dans l'enseignement et la formation*. Dijon: Educagri, 195-215.
- Barthes, Angela; Alpe Yves; Bader, Barbara. 2012. Questions and positions on education for sustainable development at university in France: Example of short professional cycles. In: *Environmental Education Research. Volume 0, Issue 0*, 1-13.
- Beringer, Almut; Adomßent, Maik; Scott, William. 2008. Editorial. In: *Environmental Education Research*, Vol. 14, No. 6, 603-606.
- Bonardi, Christine; Roussiau, Nicolas. 1999. *Les représentations sociales*. Paris: Dunod.
- Caillaud, Sabine. 2010. *Représentations sociales de l'écologie et pratiques individuelles. Une étude comparative France – Allemagne*. Thèse de doctorat en psychologie sociale, Université de Lyon 2.

- Considère, Sylvie; Tutiaux-Guillon, Nicole. 2012 (à paraître). L'éducation au développement durable : entre « éducation à » et disciplines scolaires. In: Recherches en Didactiques, Vol. 14.
- Ferrer-Balas, Didac; Adachi, Joe; Banas, Sarah; Davidson, Cliff ; Hoshikoshi, Asuka; Mishra, Arabinda; Motodoa, Y.; Onga, M.; Ostwald, Madelene. 2008. An international comparative analysis of sustainability transformation across seven universities. In: International Journal of Sustainability in Higher Education, Vol. 9, No. 3, 295-316.
- Fien, John. 1993. Education for the environment: Critical Curriculum theorizing and environmental education. Geelong/Australia: Deakin University Press.
- Floro, Michel. 2011. Développement durable et questions socialement vives. Une approche territorialisée du discours enseignant. In: Legardez, Alain; Simonneaux, Laurence (eds.). Développement durable et autres questions d'actualité. Les Questions Socialement Vives dans l'enseignement et la formation. Dijon : Educagri, 163-180.
- Fortin-Debart, Cécile; Girault Yves. 2009. De l'analyse des pratiques de participation citoyenne à des propositions pour une Éducation à l'environnement. In: Éducation Relative à l'Environnement: Regards-Recherches-Réflexions. Vol. 8. 129-145.
- Freire, Paulo. 1974. Pédagogie des opprimés: suivi de conscientisation et révolution. Paris: Maspero.
- Freudiger, Nathalie. 2010. Comparaison de représentations d'élèves suisses et indiens sur le développement durable et le réchauffement climatique. In: Actes du congrès de l'Actualité de la recherche en éducation et en formation (AREF). Genève. (<https://plone2.unige.ch/aref2010>)
- Girault, Yves; Sauvé, Lucie. 2008. L'éducation scientifique, l'éducation à l'environnement et l'éducation pour le développement durable. Croisements, enjeux et mouvances, Aster, 46, 7-30. ([http://documents.irevues.inist.fr/bitstream/handle/2042/20028/ASTER\\_2008\\_46\\_7.pdf](http://documents.irevues.inist.fr/bitstream/handle/2042/20028/ASTER_2008_46_7.pdf)).
- Gough, Annette. 1997. Education and the Environment – Policy, trends and the problems of marginalization, Melbourne, Victoria: The Australian Council for Education Research. Victoria: Deakin University Press.
- Grunwald, Armin. 2011. On the Roles of Individuals as Social Drivers for Eco-innovation. Journal of Industrial Ecology, Vol. 15, No. 5, 675-677.
- Jeziorski, Agnieszka; Ludwig-Legardez, Annie 2011. Éducation au développement durable: la difficulté de concevoir une action éducative interdisciplinaire. Communication au colloque international francophone Le développement durable: débat et controverses, 15 et 16 décembre 2011, Université Blaise Pascal, Clermont-Ferrand. (<http://www.oeconomia.net/private/colloqueddiufm/38.colloquedd-jeziorski-legardez.pdf>).
- Jickling, Bob. 1992. Why I don't want my children to be educated for sustainable development. In: The journal of environmental education, Vol. 23, No. 4, 5-8.
- Jickling, Bob. 1998-1999. De la nécessité d'une analyse conceptuelle en éducation relative à l'environnement. Réflexions sur le langage de la durabilité. In: Éducation Relative À l'environnement, Vol. 1, 79-95.
- Jodelet, Denise. 1989. Représentations sociales: un domaine en expansion. In: Jodelet, Denise (eds.). Les représentations sociales. Paris: PUF, 31-61.
- Læssøe, Jeppe. 2008. Participation and sustainable development: The role and challenges of mediating agents. In: Reid, Alan; Bruun Jensen, Bjarne; Nikel, Jutta; Simovska, Venka (eds.). Participation and Learning Perspectives on Education and the Environment, Health and Sustainability. Dordrecht: Springer, 144-158.
- Lebatteux, Nicole. 2011. Penser global et agir local? - Des obstacles à la mise en œuvre d'un Agenda 21 scolaire. In: Legardez, Alain; Simonneaux, Laurence (eds.). Développement durable et autres questions d'actualité. Les Questions Socialement Vives dans l'enseignement et la formation. Dijon: Educagri, 181-194.
- Legardez, Alain. 2006. Enseigner les questions socialement vives, quelques points de repères? In: Legardez, Alain; Simonneaux, Laurence (eds.). L'école à l'épreuve de l'actualité, enseigner les questions socialement vives. Paris: ESF éditeurs, 19-31.
- Legardez, Alain; Simonneaux, Laurence. 2006. L'école à l'épreuve de l'actualité. Enseigner les questions socialement vives. Paris: ESF éditeurs.
- Legardez, Alain; Simonneaux, Laurence. 2011. Développement durable et autres questions d'actualité. Questions socialement vives dans l'enseignement et la formation. Dijon: Educagri.
- Lundegård, Iann; Wickman, Per-Olof. 2007. Conflicts of interest: an indispensable element of education for sustainable development. In: Environmental Education Research, Vol. 13, No. 1, 1-15.
- Marquis, Geneviève. 2001. Les représentations sociales de l'environnement: une comparaison des jeunes du Québec et du Sénégal. In: Canadian Journal of Environmental Education, Vol. 6, 158-177.

- Moliner, Pascal. 1996. Images et représentations sociales. De la théorie des représentations à l'étude des images sociales. Grenoble: PUG
- Moscovici, Serge. 1961. La psychanalyse, son image et son public. Paris: PUF.
- Pouliot, Chantal; Bader, Barbara; Therriault, Geneviève. 2010. The notion of the relationship to knowledge: A theoretical tool for research in science education. In: International Journal of Environmental and Science Education, Vol. 5, No. 3, 239-264.
- Richter, Torsten; Schumacher, Kim Philip. 2011. Who really cares about higher education for sustainable development? In: Journal of Social Sciences, Vol. 7, No. 1, 24-32.
- Robottom, Ian; Hart, Peter. 1993. Research in Environmental Education. Engaging the Debate. Victoria: Deakin University Press.
- Sauvé, Lucie; Berryman, Tom; Brunelle, Renée. 2003. Environnement et développement: la culture de la filière ONU. In: Sauvé, Lucie; Berryman, Tom; Brunelle, Renée (eds.). Environnements, Cultures et développements. Éducation relative à l'environnement – Regards, Recherches, Réflexions, Vol. 4, 33-55.
- Sauvé, Lucie. 2006. L'organisation et la structuration du secteur de l'Éducation en réponse au programme onusien du développement durable. In: Former et éduquer pour changer nos modes de vie, Liaison Énergie-Francophonie, No. 72, Décembre 2006, 33-41.
- Scott, William; Gough, Steven. 2004. Key issues in sustainable development and learning. A critical review. London: Routledge Falmer.
- Simonneaux, Jean. 2011. Les controverses sur le développement durable à l'épreuve d'une perspective éducative. In: Bader, Barbara; Sauvé, Lucie. Education, environnement et développement durable: vers une écocitoyenneté critique. Presses de l'université Laval, 251-292.
- Simonneaux, Laurence. 2006. Quel enjeu éducatif pour les questions biotechnologiques. In: Legardez, Alain; Simonneaux, Laurenc (eds.). L'école à l'épreuve de l'actualité. Enseigner les questions socialement vives. Paris: ESF éditeurs, 33-60.
- Simonneaux, Jean; Simonneaux, Laurence. 2009. Student socio-scientific reasoning on controversies from the viewpoint of education for sustainable development. In: European Journal of Engineering Education, Vol. 34, No. 1, 657-687.
- Steiner, Gerald; Posch, Alfred. 2006. Higher education for sustainability by means of transdisciplinary case studies: an innovative approach for solving complex, real-world problems. In: Journal of Cleaner Production Vol.14, No. 9-11, 877-890.
- Sterling, Scott; Scott, William. 2008. Higher education and ESD in England: a critical commentary on recent initiative. In: Environmental Education Research, Vol 14, No. 4, 386-398.
- Summers, Mike; Corney, Graham; Childs, Ann. 2004. Students teachers' conceptions of sustainable development: the starting- points of geographers and scientists. In: Educational Research, Vol. 46, No. 2, 163-182.
- Tutiaux-Guillon, Nicole. 2011. Le développement durable en France. Suffit-il de prescrire une question vive pour qu'elle existe à l'école? In: Legardez, Alain; Simonneaux, Laurence (eds.). Développement durable et autres questions d'actualité. Questions socialement vives dans l'enseignement et la formation. Dijon: Educagri, 215-228.
- UNESCO. 2005 United Nations Decade of Education for Sustainable Development (2005-2014): International Implementation Scheme (<http://unesdoc.unesco.org/images/0014/001486/148654e.pdf>).
- Urgelli, Benoit. 2009. Logiques d'engagement d'enseignants face à une question socioscientifique médiatisée: le cas du réchauffement climatique. PhD. Diss., Ecole normale supérieure de Lettres et sciences humaines, Lyon. (<http://benoit.urgelli.free.fr/Recherches/These-2009/index.html>).
- Verges, Pierre. 1992. L'évocation de l'argent: une méthode pour la définition du noyau central d'une représentation. In: Bulletin de psychologie, Vol. 450, No. 14, 23-29.
- Verges, Pierre. 1994. Approche du noyau central: propriétés quantitatives et structurales, In: Guimelli, Christian (ed.), Structures et transformations des représentations sociales, Lausanne, 233-253.
- Verges, Pierre. 2001. L'analyse des représentations sociales par questionnaires. In: Revue Française de sociologie, Vol. 42, No. 3, 537-561.
- Vygotski, Lev. 1997. Pensée et langage, Paris: Editions La Dispute.
- Wagner, Wolfgang. 1994. Fields of research and socio-genesis of social representations: a discussion of criteria and diagnostics. In: Social Science Information, Vol. 33, No. 2, 199-228.
- Wals, Arien; Blewitt, John. 2010. Third wave sustainability in higher education: Some (inter)national trends and developments. In: Jones, Paula; Selby, David; Sterling, Stephen (eds.). Sustainability Education: Perspectives and Practice Across Higher Education. London: Earthscan, 55-74.