Discourse and Communication for Sustainable Education

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This volume contains ten papers related to the diverse aspects of sustainability as well as papers presented at the international JTEFS and BBCC conference “Sustainable Development. Culture. Education: Innovations and Challenges of Teacher Education for Sustainable Development” which took place on May 12th–14th, 2016 in Konya, Turkey. The hosts of the 14th conference were Necmettin Erbakan University, Ahmet Keleşoğlu Faculty of Education of Konya, Turkey, in cooperation with Konya Governorship (Turkey), Daugavpils University’s UNESCO/UNITWIN Chair on Interplay of Tradition and Innovation for ESD, and BBCC virtual Institute of Sustainable Education (ISE) associated with Daugavpils University, Latvia and International Network of Teacher Education Institutions (INTEI) associated with York University, Canada.

The geographical region of the participants is quite wide, ranging from Latvia, Poland, Turkey, Sweden, Finland, the Netherlands to the United States.

The paper by Antonios Maragakis, Andy van den Dobbelsteen and Alexandros Maragakis discusses sustainability assessments in higher education that should include economic metrics. The article reviews the financial life cycle of higher education and highlights the fact that the costs for education are readily available to students but the financial returns are nebulous. The authors suggest that the inclusion of three postgraduate economic metrics will give a more holistic measure of an institution’s level of sustainability.

The paper by Desha L. Williams, Belinda Edwards, Karen A. Kuhel, and Woong Lim examines to what extent a program prepare teachers to effectively teach culturally and linguistically diverse students, and impact the cultural dispositions of prospective mathematics teachers. The authors discuss the imperative for the students to have consistency with effective teachers who have the skills, knowledge, and dispositions to impact student learning. The themes identified during the interviews provide a glimpse into the impact a program can have on creating a sustainable workforce to teach mathematics in culturally and linguistically diverse school settings. This study illustrates a case in which prospective teachers who demonstrate appropriate dispositions have decided to integrate theory into their practice.

John Valk and Aybiçe Tosun explore how one’s worldview requires a journey into one’s heart, soul and mind (Knowing Self). But knowing Self requires knowing Others which is an imperative in a global world. The authors raise the question to what extent schools prepare students for participation in a global world, especially when it comes to awareness of its diversity, and its religious diversity, as well. This paper presents the findings of two research projects highlighting knowledge, awareness and attitudes towards various worldviews. The findings of the first is rather discouraging as the results point to little or no attention given to teaching about religion in the schools. The second one is much more encouraging as the results show that worldview education explores both religious and secular worldviews and that their impacts on individuals and society are vivid. The paper gives a brief description of a worldview framework that deepens and broadens awareness and understanding of self and others, encourages questioning and openness, and develops critical thinking.

The paper by Elvan Sahin provides a closer look into the key dimensions of education for sustainable development, cited a strategy report (CEE, 1998) entitled ‘Education
for Sustainable Development in the Schools Sector' in Sustainable Development Education Panel (SDEP). The learning outcomes and the content of a Turkish middle school science textbook were analyzed in terms of the integration of the ESD related vision by considering the CEE framework. Reminding that the process of sustainable development is critical and crucial for geographically small regions due to the limited natural resources and high population density, the textbook analysis was conducted by paying special attention to the wise use of natural resources. It was suggested that the learning outcomes regarding recycling and waste management from a broader perspective qualify for ‘the sustainable use of natural resources’. In other words, middle school science education defining ‘sustainable development’ as mentioned above may use ‘sustainable use of natural resources’ as an umbrella term to raise an awareness, develop values, and skills as well as responsibility while focusing on the 4R model (reducing, reusing, repairing and recycling).

Tomasz Zygmunt in his paper initiates the discussion about the term “sustainability” and especially “sustainable development” that has become a living element of everyday language often used by politicians, economists, journalists, educators and many others. The author’s research, although scanty in scope, sufficiently demonstrates the knowledge of Polish school teachers. The author makes clear that their very understanding is directly related to the core meaning of the Polish words being the equivalent of the English term – “sustainable development”. Moreover, it also appears that the examined teachers’ attention was mainly concentrated on “development,” treating “sustainable” as a pure complement to the noun. Hence, sustainable development is viewed by Polish teachers as a holistic process characteristic of harmonious development of human features. The author’s way of thinking and conviction finds support in some philosophical ideas which can provoke and elicit a deeper treatment of sustainable development in order to work out a new system of beliefs such as, for example, philosophy of sustainable development. Although the signal embedded in the title of the article seems to be controversial, it deserves further discussion and consideration.

The paper by Marja Laine explores the definition of culturally sustainable education. Conceptions of cultural sustainability were collected through expert queries and focus group engagement that are introduced, and compared with scientific and especially pedagogical discourse on the matter. The study specifically broadens the view on culture as only having an instrumental value to sustainability. This is done from the perspectives of supporting the pupil’s identity processes and micro-level encounters. From a theoretical point of view, the study therefore adds depth to the examination of cultural sustainability.

The paper by Anita Pipere provides some conceptual insights into the research paradigm of complexity to deal with wicked problems. The main part of the paper starts with the analysis of complexity concept and the main principles of complex dynamic systems. The comparison of simple, complicated and complex systems in the field of sustainability education provides an example of using the complexity of thinking with regard to social systems. The complexity perceived as the research paradigm that could deal with the wicked problems of sustainability, education and sustainable education from the point of view of post-normal science, is described in a more detailed way. The concept of transdisciplinarity has been developed as a research framework starting from the general approaches to its application to sustainability, education and sustainable education. Towards the end of the paper the author elaborates specific types of collabo-
ration in educational research for sustainability and types of knowledge produced by transdisciplinary research in this field.

The paper by Stellan Sundh reflects upon the learners’ written production in English on issues related to sustainable development. In a project with universities and upper primary schools in Estonia, Latvia, Lithuania, Russia and Sweden, almost 500 12-year-olds’ writing samples in English were collected when the subjects were asked to write about six different topics on different occasions during a school year. One of these topics was to describe what life would be like for them in the future. These texts were analysed with a qualitative approach to identify words used to communicate ideas that can be related to a perspective of sustainable development. The results indicate that many of these young learners from five different countries had the ability to communicate their ideas in English as a foreign language and that different aspects of these ideas were emphasized by the young learners in the five countries.

The paper by Phra Nicholas Thanissaro examines the degree to which self-esteem can be considered as a sustainable objective in the education of religious minorities. The demographics and attitudes were compared in high self-esteem and low self-esteem groups of Buddhist teenagers growing up in Britain. The study found low self-esteem to correspond with less well-being, more worries in relationships, lower motivation in school, more supernatural beliefs, introversion, feeling that Buddhism was irrelevant and more reliance on the Internet. Self-esteem was found not to be linked with religious values or environmental concern. The paper proposed that narrow focus on self-esteem—merely affirming pupils so that they feel good about themselves—risks the known weaknesses of multiculturalism. Since inflated self-esteem was found to desensitize individuals to connectedness between themselves, others and the environment, the paper argues that localized wisdom native to particular minorities might contribute more to the sustainable education discourse than self-esteem per se.

The paper by Buket Aslandağ Soylu, Tuğba YanparYelken, and Mustafa Kemal Külekcı reflects on the research designed to develop and test an instrument that identifies the component of an academician’s life-wide learning habits. Considering the complex nature of the life-wide learning, considerable attempts were made to handle the process of classifying the cognitive, affective, social, technical and cultural domains related to academicians working in faculties of education. To facilitate the tradition of a life-wide learning of all people in the community, including students and teachers, this is essential to fortify the relationships between different instructions and facilities. The authors stress that the fundamental factor for consolidating sustainability and life-wide learning is renovation of the old system by changing it into a more effective one.

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Is Higher Education Economically Unsustainable?  
An Exploration of Factors that Undermine Sustainability Assessments of Higher Education

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Abstract
As students continue to review the sustainability of higher education institutions, there is a growing need to understand the economic returns of degrees as a function of a sustainable institution. This paper reviews a range of international research to summarize the economic drivers of higher education attainment. Although the cost inputs to higher education are fairly well understood, the economic return of a degree is not. Students’ misperception of economic returns coupled with a dynamic definition of employability create the framework for unsustainable debt loads for graduates. This paper proposes three metrics that can be used to assess the economic sustainability of students graduating higher education that can be used to supplement the broader definition of sustainability within higher education.

Keywords: sustainable development, higher education, economic return, sustainable education, sustainable assessment

Is the discussion surrounding sustainability within higher education missing a key parameter?
The general topic of sustainability assessment has been exhaustively studied, perhaps better studied than sustainability itself (Kates et al., 2001). With relation to higher education numerous scholars (e.g. Ryan, Tilbury, Corcoran, Abe, & Nomura, 2010; Glasser, 2009; Patrick, Murray, & Bowles, 2008; Perna, Carrier, & Chang, 2006, Salite, 2008) have investigated and analysed the various assessment systems and inventories of university initiatives currently available. Along with individual institution’s efforts, there is a growing number of external certifications gaining popularity, such as the Sustainability Tracking, Assessment & Rating System (STARS) and Campus Sustainability Assessment Framework (CSAF) (Maragakis & Dobbelsteen, 2015). These initiatives show willingness of institutions to become more sustainable, while also providing them with ‘sustainability’ marketing materials.
As institutions continue their sustainability efforts, there is evidence that suggests that sustainability in higher education is missing a key component sought by students. Maragakis and Dobbelsteen (2013) conducted a survey of sustainability assessment systems within higher education that provided empirical data that identified a gap in current assessment methodologies. The study showed that 92 percent of participants agreed that employability after graduation should be included as a measure of sustainability while the most prominent external assessments currently do not address this aspect (Maragakis & Dobbelsteen, 2013).

The unequivocal concern of students is not a new discovery as other research also supports these numbers (Becker, 1964; Anchor, Fiserova, Mariskova, & Urbanek, 2011; WU, 2011; Menon, Pashardes, Pashourtidou, & Polycarpou, 2012). It is, however, a fairly novel concept with regards to being identified as a metric for sustainability. This paper looks to review the existing literature regarding the economic returns of higher education and highlight gaps between students’ expectations and reality.

**Methodology**

This research focuses on a literature review assessing relevant economic parameters associated with higher education attainment. The literature available on the economic return of degrees is sizeable and has been well studied over the last decades. The scope of this research is to identify useable information that can be used within the current identified needs and perceptions of sustainability in higher education.

The research presented applies to all forms of higher education, both academic and applied science. The research looks to provide an international view of the subject that specifically addresses trends and realities within higher education after 2010.

One aspect that will not be reviewed in depth is the difference between science, technology, engineering or math (STEM) and non-technical (social science) degrees. The subject of STEM versus social degrees is a very relative topic and one being addressed by governments internationally, such the Ethiopian Ministry of Education’s 2008 policy whereby 70% of overall university enrolment is expected to be in a science field, with the remaining 30% in the social sciences (Egne, 2014). Although a very relative topic, these differences are not seen as being the root cause of capturing metrics and, as such, are not part of the scope of this study. This study looks to focus on the underlying expectations associated with the financial incentives of a degree. It is assumed that the correct metrics will be robust and flexible enough that they can be universally used and would automatically adjust for different types of degrees.

**Research Questions**

The research question underlying the study presented is: Should employability be considered as a parameter of sustainability assessments within higher education?

Outcome of this question will help to answer the main question: Can a set of factors be extrapolated to help guide the creation of a future metric for sustainability assessment of higher education?
Is Higher Education Economically Unsustainable? An Exploration of Factors...

Approach

A broad ranging literature review was conducted in order to explore the gaps between students’ financial expectations and post graduate metrics. Based on the results of the literature review, the author’s expert judgment was used to extract key information from peer reviewed research and used them to propose several new economic metrics for consideration.

In order to discuss this topic with relation to sustainability in higher education, it is first important to baseline the meaning of the term ‘sustainable’. The term sustainability is a highly debated word that still remains to be unanimously defined. However, the word sustainable is a more readily accepted word. Based on the World Commission on Environment and Development (1987) definition of ‘sustainable development’, a development that meets the needs of the present without compromising the needs of future generations, it means to be able to establish and maintain a balance between ecological and economic values, and equity across regions of the world. As Elkington (1997) proposed, the term can be divided into ecological, social and economic factors. Since Elkington, the first two factors have been investigated more extensively than the economic aspect of sustainability within higher education assessments.

To this extent, this research topic is novel and there are limited peer-reviewed studies that directly lend themselves to the sustainability aspects of economics of higher education. Thus, for this research to provide results, it will need to tie in various tangential fields associated with higher education. These include both government and academic lead research and, in some cases, well documented public responses.

Based on this approach there is the potential for promoting bias. This may stem from the amalgamation of various fields and there is a risk of inadvertently combining the literature in a way to support a specific belief. Although this bias cannot be measured this research aims to limit it by including various authors from other fields. It is expected that the varying views of authors and the necessary consensus required to achieve results will help limit any potential bias.

Literature Selection

It should be noted that the general topic of economic returns from higher education has been studied empirically and theoretically since the 1960s and has, arguably, produced tens of thousands of publications that could directly or indirectly support this paper. In order to encompass the most recent trends on this subject, literature selection was limited to peer-reviewed literature conducted post 2010. Literature selection was drawn from international sources to maintain the studies breadth and comprehensiveness. The literature identified to be presented reflects relevant literature that helps provide specific insight as to how to tie in economic parameters into sustainability assessments in higher education.
Review of Literature

Tuition fee

As a general starting point, there is a plethora of public exposure regarding the cost of higher education. Tuition costs are an often-debated topic internationally. From the tuition fees hike riots in the UK (Cammaerts, 2013) to the ‘skyrocketing’ tuition costs in America (State of the Union Address, 2012) higher education is a focal point in media and public policy.

Tuition is a discrete figure that is often the starting point of assessing a higher education institution, but it is also not appropriate as a universal measure of comparison. Tuition is a result of an institutions pricing relative to the economic environment. Economic drivers such as location, the country’s Gross Domestic Product (GDP), median salary, inflation, etc. help shape tuition numbers. Affordability is a term often used to normalize tuition relative to these economic parameters. Countries run their own statistic relative to higher education affordability, which helps guide policy. On a global level, affordability comparison is offered through various venues such as Education Policy Institute, which focuses on providing educational opportunities for all students, and the Higher Education Strategy Associates, which provide higher education decision makers with various metrics and strategic services.

As can be seen through various studies and national strategies, the price of tuition is often a barometer of social health and inclusiveness. Research spans the higher education lifecycle from secondary school through graduation. Cowan (2011) showed that a decrease in tuition also decreases risky health behaviours in youths as it increases their drive for a better future through higher education. Hübner (2012) looked at state-wide differences in Germany and found that a €1000 increase in tuition fees reduced enrolment by 2.7 percent. Hemelt and Marcotte (2011) looked at 4-year public universities in the US and found a $1000 decrease in tuition increased enrolment by about 2.5 percent. In the US, student debt greatly influences the graduation likelihood of students from the bottom 75 percent of the income distribution (Dwyer, McCloud, & Hodson, 2012), while in Ireland, tuition was abolished during the mid-nineties hoping to increase participation from students in low socio-economic status (Denny, 2014).

As research continues internationally, it is unclear if tuition levels are indeed a barrier limiting social equality. This is because there is an underlying expectation that higher education is an investment that will increase a graduate’s future wages. Various studies have generalized higher education attainment as a financially lucrative proposition (Walker & Zhu, 2011; Anchor et al., 2011 and others). Seeing education as an investment means that tuition may not act as a barrier if the returns outweigh the investment. But not all degrees are equal in providing a return on investment.

Employability

There is no doubt that the expansion of higher education has contributed fundamentally to the transformation of society through the development of human competencies (Organisation for Economic Cooperation and Development [OECD], 2011). However, human competencies are not necessarily synonymous with financial gains. Although this has been proposed since the 1960s (Becker, 1964) there is growing literature on the economic outcomes of different degrees. For example, there seems to be international
convergence that social sciences are less favourable for employment (Menon et al., 2012; Schomburg & Teichler, 2011). Tangentially, there is a growing sentiment amongst graduates and post-graduates that a Bachelor’s degree is not enough (Schomburg & Teichler, 2011).

Social science degrees, for example, often articulate a ‘pie-in-the-sky’ proposition that while low initial salaries are to be expected after graduation, the skills students have acquired in undergraduate studies (e.g. critical thinking) will be highly valued by employers over time and result in higher salaries later on during their career (Rajecki & Borden, 2011). However, after investigating salaries across 120 different undergraduate majors, Rajecki and Borden concluded that mid-career salaries are highly correlated with starting salaries, and that the salaries earned by those who completed a degree in social sciences are below average compared to other fields. Therefore, this ‘pie-in-the-sky’ proposal that value may be seen later may not be an accurate depiction of what future degree holders may expect to experience. It also leads to further discussion as to the importance of employability after graduation.

Although the definition of employability for graduates remains unclear it still persists to be a major motivation for students. The Bologne process in Europe, which aimed to create comparable, compatible and coherent systems of higher education in Europe (European Higher Education Area, 2014) also increases the mobility of high-level skills and labour and contribute to increased employment, productivity and growth (House of Commons Education and Skills Committee, 2007). With regards to students, Maragakis and Dobbelsteen (2013) found 92 percent students agree that employability should be included as a sustainability metric for higher education. This corresponds to academics also calling for employment to be a measure of sustainability (Ashford, Hall, & Ashford, 2012).

Increasing the complexity of measuring employability of graduates are the realities of ‘underemployment’ and ‘overeducation’. Underemployment is defined as those working part-time due to lack of full-time jobs, or those working part-time who would like to work more hours (Bell & Blanchflower, 2011). Underemployment has been a growing concern since the financial crisis of 2008 and remains persistent (Ashford et al., 2012).

Simultaneously, overeducation has been a growing phenomenon in the modern job market. Overeducation is defined as someone whose respective levels of education exceed the requisite levels needed to perform their jobs (Linsley, 2005). The research by Carroll and Tani (2013) points to the growing concern surrounding over education in Australia and throughout the world.

Financial Return

The literature review sheds light on the complexities surrounding the financial parameters surrounding higher education attainment. The commitment required to obtain a higher education degree will always involve some sort of cost to the student, whether it involves time, money and/or a combination of the two.

The literature review generally covers topics that, for the most part, are widely discussed both socially and academically. Tuition prices, financial and social returns of higher education are prevalent in every layer of modern society. However, there seems to be some contradictory information with regard to the economic returns of higher education.
There seems to be stark contradiction in assessing the financial returns of higher education. There are ample sources such as Walker and Zhu (2011), Anchor et al. (2011) and others which show that higher education will lead to greater financial returns. Although the framework of the research is sound, the generalization of the results needs to be questioned. It is clear that the economic returns of a social science are not equal to that of STEM degrees. And even within the STEM degrees there are differences in economic returns depending on the path selected and the educational attainment (Schomburg & Teichler, 2011).

These studies also have not taken into account the modern reality of underemployment and overeducation. Now more than ever it is important for students to understand their opportunities and economic returns after graduation in order to make correct life decisions. It can be inferred that the economic burden of higher education may outweigh the employment returns based on the level of employability of a graduate.

Discussion of the Literature Review with Relation to Sustainability in Higher Education

The literature does not present discrete tools that would allow for financial assessment of higher education within the context of sustainability assessments. In order to make a more accurate forecast of the economic returns of a higher education degree one needs to understand both the inputs and the outputs of the degree.

The inputs for students to make a decision are readily available. A basic calculation utilizing the tuition, duration and miscellaneous costs can easily be obtained to create a realistic projection of the cost of the degree.

The financial outputs of the educational attainment are nebulous at best. Peer reviewed studies exist arguing the general positive economic returns of higher education (Walker & Zhu, 2011; Anchor et al., 2011) while others indicate the inaccuracy of these claims (Borden & Rajecjki, 2011; Menon et al., 2012; Schomburg & Teichler, 2011). A proxy to financial return may be the employability of a graduate, but this is far from being a discrete metric considering the complexity of measuring underemployment or over education. Not knowing the expected return for an investment, or not being able to correctly forecast it, puts the student in an inopportunistic frame of making decisions. With regards to how sustainable higher education is, the literature review reveals a clear disconnect between student expectations and results.

These disconnects in the literature shows how students can get themselves into a financial unsustainable situation. Not knowing the returns of a higher education investment may lead to an unsustainable financial burden that may actually worsen an individual’s standing. These results also coincide with American student loans which are currently skyrocketing and are unsustainable (State of the Union Address, 2012).

Translation to Metrics for Sustainability Assessment

Based on the research above several key pieces of work have been extrapolated and made into self-containing questions. These questions look to provide a framework for integrating discrete economic metrics regarding with regards to the sustainability of a higher education degree.
Question 1: What is the average yearly salary of graduates with that specific degree within 12 months of graduation?

This question stems from the strong correlation that Rajacki and Borden (2011) identified between mid-career salaries and starting salaries. Rajacki and Borden (2011) also noted a notable difference between fields of studies so the question asks for the results of that specific degree to allow direct student comparison. A 12-month window is allowed so as to capture a suitable period of time after graduation.

Question 2: What is the ratio of full time / part time employed graduates with that specific degree within 12 months of graduation?

Underemployment is defined as those working part-time due to lack of full-time jobs, or those working part-time who would like to work more hours (Bell & Blanchflower, 2011). Since underemployment has been a growing concern since the financial crisis of 2008 and remains persistent (Ashford et al., 2012) this question looks to provide students with a more meaningful number than just ‘employability’. A 12-month window is allowed so as to capture a suitable period of time after graduation.

Question 3: What percent of graduates with that specific degree are employed in a position whose level of education exceeds the requisite levels needed to perform their job?

The research by Carroll and Tani (2013) points to the growing concern regarding over education and this question uses Linsley (2005) definition to capture the level of over education experienced by a graduate of a specific degree within the market place.

Conclusions and Discussions

Interpretation of Results

From its inception, the OECD has stressed the importance of human competencies for economic and social development (2011). This, in general, can be translated as a growth of an individual in a personal and/or professional context. This guidance could also be inferred to as general guidance for sustainability assessments in higher education.

Thus for a degree to be assessed as sustainable in the economic context there needs to be at least two discrete elements presented to students for their economic decision making. The first is the cost of the education. This is a relatively straightforward calculation in which the parameters are readily available (tuition, opportunity costs, etc.).

The second element is the financial return of investment from the degree. This element presents the students with the varying monetary returns from different types of degrees and institutions. This would allow the student to decide on which institution to enrol in and the type of degree they would like to pursue based on their needs to develop their personal competencies. This should also be incorporated in sustainability assessments of higher education institutions.

The concepts presented in this paper are not new. In fact, the economic returns of degrees have been well studied in both an empirical and theoretical framework since the 1960’s. However well studied these concepts are it is interesting that they still remain out of sustainability assessment of higher education institutions. Sustainability assessment, it seems, have actively avoided this topic as they focus on an academic institutions ability to develop human competencies, knowledge and innovation. However, as Ilisko and Badjanova (2014) highlighted, many heads of schools stated that Schools should prepare the student for the requirements of a job market and to encourage them to live with a responsibility in everyday situations and in harmony with the environment.
Makrakis and Makrakis (2012) data showed that when addressing Sterling (2001) four-type typology of the roles and function if university (between socialization, liberal, vocational and transformative) 21% of students placed a focus on vocational training while 42% place an emphasis on the transformative function, which sees a university as an agent of change towards a fairer society and a better world. Considering the growing student debt burden, the university is not acting as an agent of change towards a fairer society. Including economic metrics would not only directly address the expectations of 21% of students that supported vocational training but also would support the transformative function by securing an economically sustainable graduate.

Based on the literature presented in this paper, it seems that sustainability assessments not including economic returns are missing a key parameter that may be contributing to the current unbalanced system.

Discussion of Method Used for Comparison

The research presented spans multiple fields in an attempt to capture a holistic review of current academic thought on the economic parameters surrounding the decision making of students that could be applied to sustainability assessments. The review covered qualitative and quantitative research and, in many cases, found potential contradictions, which made comparison of the research challenging. These challenges provide two valuable insights that may benefit future research.

The first insight is that apparent contradictions mainly stem from different point of views. For example, a broad analysis of higher education attainment may indeed find an increased rate of return while a more focused study may reveal a positive return for STEM fields and a negative return for social sciences. This means that the data needs to be carefully reviewed as it is not necessarily contradictory but rather biased towards a specific point of view. This makes the application into a sustainability assessment even more difficult as there will need to be some assumptions made by the assessment which may not necessarily achieve the desired results.

The other insight is that there is not yet a complete research surrounding the economic lifecycle of modern higher education. There is a general framework of understanding the inputs that go into accomplishing a degree, but the outputs are not discretely understood so as to provide guidance for sustainability assessments. Even some general metrics of post-graduate metrics may be incomplete or obsolete due to the changing market place and the drivers of employment that continuously affect the return of investment of a degree.

The research is subject to weakness as the amalgamation of all these topics can create distortion of facts. The economic inputs and outputs of higher education has produced a wealth of knowledge over the last several decades and the proper guidance needed for sustainability assessments may not be identified without the engagement of subject matter experts. Interpretations may lead to false assumptions which would increase omissions and limit critical review.

This weakness also led this research to set a very prescriptive description within the questions. Each question specified the results based upon the specific degree. This level of granularity is lacking from this literature reviewed but provides a clear assumption that aims to students making decisions as to which higher education path to follow.
Recommendations

This study has highlighted the importance of understanding the economic returns of higher education within the framework of sustainability assessment. A degree should not be marketed as sustainable unless it addresses the economic return of the future graduate. In order to do this, further research should be undertaken to address some general parameters to help students in decision making.

One of the critical pieces of this research was to propose a framework for assessing an institution’s ability to provide a degree that is economically sustainable within the framework of current student demands and sustainability assessments. This is a novel discussion in the context of sustainability assessments of higher education institutions, although not so novel in the general discussion of economic returns from higher education.

The research identified that economic returns must be more granular than just the institution; the metrics need to address the performance of the specific degree within the institution in order to provide a clear message to the students. This level of granulation would provide a robust method for assessing cross institutional performance of similar degrees.

With this in mind, further research needs to identify what are the most appropriate aspects to be measured as an economic output of a higher education degree within sustainability assessments. Traditional models that address rate of employability after graduation are not comprehensive enough. A framework should be researched that is robust and flexible enough to help students both now and in the future while keeping in mind that this is applying to the assessment of sustainability of an institution.

References


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Culturally Responsive Dispositions in Prospective Mathematics Teachers

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Abstract
Sustaining teachers in culturally and linguistically diverse schools has been a prominent issue for years. This qualitative study focused on the impact of an enhanced preparation program on the cultural dispositions of five pre-service mathematics teachers. It is postulated that if positive cultural dispositions are developed in teacher candidates, the possibility of them remaining in cultural school settings is likely. Themes emerged demonstrating that the enhanced program heightened the participants’ awareness of cultural and linguistic differences, as well as, their commitment to impacting academic achievement. Of the five participants, four teach in a culturally and linguistically school after five years in the profession, demonstrating sustainability after participating in the enhanced program.

Keywords: teacher preparation, teacher sustainability, teacher retention, cultural dispositions, mathematics teacher preparation

In many culturally and linguistically diverse (CLD) school settings, teachers’ retention and attrition is at an all-time high (Ingersoll, Merrill, & Stuckey, 2014; National Center for Education Statistics [NCES], 2016). The lack of teacher retention may have a negative impact of student achievement and learning efficacy (Gershenson, Holt, & Papageorge, 2016). Students are left with feelings of abandonment, impacting their academic potential (Martin, 2009). Creating a sustainable workforce prepared to teach CLD students is paramount, particularly in the STEM fields. The number of CLD diverse students pursuing STEM fields at colleges and universities fall extremely short when compared to their White counterparts (Nation Assessment of Educational Progress [NAEP], 2015). In preparing teachers for sustained employment in CLD schools, preparation programs must prepare them to be attentive to the needs of all students and create equitable, inclusive, and supportive environments, which include communicating high expectations for academic achievement.
Critical to becoming an effective mathematics teacher for diverse learners is a combination of content knowledge, dispositions, and pedagogical knowledge that will support students’ mathematical thinking and learning as well as their home culture and funds of knowledge (Gay, 2000; Lucas, Villegas, & Freedson-Gonzalez, 2008). However, prospective teachers are underprepared to teach mathematics effectively in diverse classrooms (Garcia, Arias, Harris Murri, & Serna, 2010; Jenks, Lee, & Kanpol, 2001). Teacher preparation programs have been found to be effective in ensuring perspective teachers are equipped with appropriate mathematical content knowledge and general pedagogical strategies. However, research suggests that teacher preparation programs have done little to prepare teachers to work with CLD children (Arias & Poynor, 2001; Darling-Hammond & Bransford, 2007; Garcia et al., 2010; Jenks et al., 2001). Studies have been published indicating that teachers are not adequately prepared to teach CLD students and have little knowledge of culturally responsive teaching (CRT) and learning strategies (Blanchett, 2006; Jones & Fuller, 2003; Lucas & Villegas, 2007). Hayes and Juárez (2012) claimed that White racial domination still occurs in teacher education and this impedes the preparation of teachers for CRT. Similarly, studies of prospective teachers’ cultural awareness have found that prospective teachers in both North America (Larke, 1990) and Hong Kong (Yeung, 2006) report feelings of discomfort when working with students from CLD backgrounds.

Gay (2000) cited a disparity between theory and practice, suggesting that teachers can indeed have the disposition to teach to diversity; however, dispositions of the teachers quite often do not align with the theories supporting CRT. In light of the need to examine prospective teachers’ ways to integrate theory and practice of CRT, we note that the current literature regarding the dispositions of prospective teachers is limited (Edwards, 2011). Extending the line of work regarding the dispositional issues of cultural responsiveness (Edwards, 2011), this case study aimed to consider the dispositions related to developing culturally responsive mathematics teachers. Findings from the study can add to the knowledge base with regard to how cultural dispositions impact the teaching and learning environment. The research question that guided this study was: To what extent does a program, designed to prepare teachers to effectively teach CLD students, impact the cultural dispositions of prospective mathematics teachers? It is the authors’ views that teachers who possess positive cultural dispositions will have the necessary dispositions to impact student learning and be sustained in CLD school settings (Banks & Banks, 2009).

Theoretical Framework

There have been numerous ways to conceptualize the characteristics of an effective classroom teacher, including how teachers develop those characteristics. Dewey (1933) found that effective teachers are open-minded, act responsibly, and take initiatives in creating engaging lessons. Later, Haberman (1995) claimed that effective urban teachers seek resources to meet the diverse needs of their students and are persistent and inventive in engaging students who may be resistant to academic engagement. Additionally, effective teachers are reflective in an effort to improve practice and draw upon student-teacher relationships to create relevant lessons.
In order to make sense of these ideas on a spectrum, we incorporated the theory of the functioning of teacher dispositions and the role of teacher education in developing awareness (Stookberry, Schussler, & Bercaw, 2009) with Dewey’s and Haberman’s views of the characteristics of effective teachers. Teacher candidates enter a teacher preparation program with a variety of life experiences and socializations in schools (Kabadayi, 2015). The theory of the functioning of teacher dispositions and the role of teacher education (Stooksberry, Schussler, & Bercaw, 2009) postulates that the teacher education program provides an awareness that either challenges or supports the candidates’ assumptions, inclinations, and dispositions, and that candidates ultimately emerge with various behaviors and thinking (see Figure 1). Examining the characteristics presented by Dewey and Haberman within the data through the lens of the theory of the functioning of teacher dispositions, along with the role of teacher education, provides a mosaic theoretical framework that takes into account the underlying qualities of effective teachers while recognizing the uniqueness of the urban environment, where many CLD learners reside. This enables the examination of developing dispositions of prospective teachers who are engaged in a teacher preparation program but do not actually have their own classroom to transform their dispositions into action.

![Figure 1. The Development of teacher dispositions and the role of teacher education in promoting awareness (adapted from Stooksberry, Schussler, & Bercaw, 2009, p. 722).](image)

**Relevant Literature**

This study examined the changes in dispositions of prospective teachers, in particular those who have made the conscious decision to teach CLD learners. We reviewed the research regarding teachers’ dispositions, affective experiences for meaningful change, affective issues with mathematics, and dispositions toward cultural diversity among prospective mathematics teachers.
Cultural Dispositions

Cultural dispositions are “teachers’ inclination to meet the needs of the diverse learners in the classroom” (Schussler, Bercaw, & Stooksberry, 2008b, p. 107). There is evidence that cultural dispositions play a significant role in ensuring that teacher culture and student culture co-construct opportunities for learning (Banks, Cochran-Smith, Richert, Zeichner, LePage, & McDonald, 2005; Schussler et al., 2008; Splitter, 2010; Gerretson, Iliško, & Fortino, 2010). However, in reality, teachers often enter school or classroom environments where the culture of their students does not align with their own and, in some cases, this can lead to a learning environment that lacks inclusiveness and relevance, and hinders students’ participation in classroom activities (Hertzig, 2005).

Affective Attributes

Teacher candidates should reflect on their thinking and actions to develop an awareness of their dispositions, we believe affective experiences have the potential to foster the development of appropriate dispositions. Research suggests that affective views could be stored in epistemic memory, rooted within one’s personal experiences, thus not allowing to access one’s affective qualities through questioning or logical analysis (Nespor, 1987). This gives more credence to the view that a thoughtful and purposeful approach to developing affective responses is necessary; and Harrison (2008) called for more research about ways to develop affective qualities in higher education. Grootenboer (2010) suggested that students be placed in a field experience with the intent to increase opportunities for authentic experiences unlike content learning in lecture halls on campus, and that the professional programs provide learning experiences carefully designed to develop affective attributes as important part of components in the coursework.

Affective Issues with Mathematics

Mathematics has not produced the same amount of research in affective issues as some other disciplines, such as social science, language, and literature studies (Allchin, 1999; Aplin & Saunders, 1996; Lee & Cockman, 1995). Even though mathematics has been viewed as a value-free and culture-free discipline (Bishop, FitzSimons, Seah & Clarkson, 1999), researchers (e.g., Bishop, 1998; D’Ambrosio, 2001) have found that culture plays a pivotal role in the teaching and learning of mathematics. Grootenboer (2010) claims that the rich tradition of beliefs and values about mathematics teaching and learning should be examined. The underlying dispositions towards mathematics and the professional practice of teaching should be part of active field research in order to attend to pedagogical approaches that develop students’ affective qualities.

Dispositions Toward Cultural Diversity

Giles & Sherman (1982) defined cultural diversity as related to the ways people perceive differences in skin color, language use, and socioeconomic status from the middle-class Anglos. Dee and Henkin (2002) reported that educator’s attitudes towards pluralism and diversity could be understood in a more systematic way. For example, Dee and Henkin found that some educators are more likely to include diversity in content,
value equity in the classroom, and feel comfortable interacting with those with different cultural backgrounds. Those educators recognize diversity as positive for society and understand how assimilation to the mainstream culture contributes to people’s success in society.

The field has recognized that knowledge of students is a critical component of teacher knowledge (Shulman, 1987); however, teachers are not adequately prepared to teach students with diverse backgrounds (National Center for Education Statistics, 1999). Multiple studies reported that teachers have cultural lenses that are significantly different from those of racial and ethnic minority students (Gillette & Boyle-Baise, 1995; Paige, 1993; Rios, 1996). Irvine (1990) argued that such a gap between the teacher and minority students could produce a variety of negative results such as inappropriate remediation, harsh discipline, and attributing minority students’ academic and classroom behaviors to their home environment.

Over time, there has been a growing body of literature that supports the view that teacher education should facilitate pre-service teachers’ learning to explore beyond the familiar boundaries of cultural norms and to overcome ambiguities and psychological risks associated with cultural dispositions. For example, one study (Villegas, 2007) reports a case in which a teacher preparation program facilitated pre-service teachers’ learning so that they become aware how they respond in the classroom to CLD children. Bennett (2008) examined pre-service secondary teacher development for teaching students who live in economically disadvantaged situations. The results found that after participating in a driving tour, reading literature, and writing a reflection paper the participants developed (a) an awareness of socioeconomic differences, (b) empathetic rapport and caring attitudes, and (c) a commitment to CRT. So will the immersion in a variety of cultural, linguistics, and content experiences have an increased impact?

**Methodology**

The participants of this study were enrolled in a traditional Master’s of Arts in Teaching degree program at a large state university with specific field placements in CLD schools. Additionally, participants attended monthly seminars and professional conferences that focused on various aspects of teaching in CLD schools.

Five students participated in this qualitative case study. The study of Danielle, Amber, Linda, Erin, and Janice is bounded by the preparation program and being recipients of a scholarship that focused on preparing teachers for CLD student populations (Merriam, 2001). The participants were Caucasian women ranging in ages from 24 to over 50. Danielle, Amber, Erin, and Janice are career changers. Linda began the program directly upon completion of her undergraduate degree.

**The Experiences**

The participants attended five workshops, each with a unique focus. The first workshop focused on teaching mathematics for ELs. The participants read literature on the subject prior to the workshop. Strategies along with potential challenges were shared in the two-hour workshop. The second workshop gave the participants the opportunity to interact with veteran teachers of ethnically and economically diverse students. The veteran teachers shared their experiences with race, culture, or gender in classrooms,
schools, and communities, and answered questions. The third workshop placed participants in a simulation in which some experienced being in a position of power and privilege while others in a marginalized position. The participants also read literature on the use of the tenets of social justice in mathematics instructions. The fourth workshop gave participants a glimpse into the lives of students who are homeless, the impact of homelessness on schooling, and legislation protect students who are homeless. The final workshop demonstrated various pedagogical strategies to meet the needs of various learners including the effective use of manipulatives in secondary mathematics classrooms and provided presentation on research-based practice to create differentiated environments.

In addition to the workshops, participants attended two of three conferences. All of the participants attended a regional conference with other mathematics and science scholars. This conference gave participants an opportunity to network with peers and other education professionals. Participants chose to either attend the state’s mathematics conference or attend a state-level EL conference. The state mathematics conference was a two-day conference of concurrent sessions on various topics of pedagogies and other issues impacting mathematics and mathematics education in the state. The EL conference was similar except the focus is on the pedagogies of effective lessons for teaching ELs.

Methods of Data Collection and Analysis

Multiple sources of data were used to allow for triangulation of findings. Data sources were entry and exit interviews, and five workshop questionnaires. Data were collected over a period of 4 semesters. Entry interviews were used to gather baseline data regarding participants’ dispositions for working with diverse populations, their openness to providing rigorous, equitable mathematics opportunities for ALL students. An example question is, “Standardized test scores of some ethnically and linguistically diverse student groups have fallen short. Provide one reason you believe this is occurring and can you offer a possible solution.” Another example is, “Do you believe today’s schools are equitable? If not, provide an example of how are they not equitable. If they are equitable, why do you believe this?” Each of the workshop questionnaires focused on the workshop’s topic. The questionnaires were designed to gather insight on participants’ views before and after the workshop. An example of a workshop question is, “Is there a difference in teaching students who are economically disadvantaged than those who are not?” Another example is “Should teachers use pedagogies of teaching for social justice in mathematics instruction? Why or why not?” A follow-up questions examined how the participates would describe a lesson from a social justice perspective. In exit interviews, similar questions explored in the entry interview and in questionnaires throughout the program were revisited. This was done to determine if participants’ dispositions in these areas had remained or were altered in any way.

Data were examined at various stages (beginning, middle, and end) of the program and reexamined collectively using open and axial coding (Strauss & Corbin, 1990). During the open coding stage of analysis, researchers carefully read, each response to the entry and exit interview questions, as well as, the workshop questionnaire responses. Our goal was to discover and categorize the data into specific ideas, concepts, and topics of discussion that were related to the research question and other related viewpoints. Each researcher independently coded the data, assisting with reliability of the data. A
team meeting was held to compare and develop a unified coding scheme. We examined participants’ knowledge prior to participating in various seminars and workshops and how that knowledge shaped their dispositions, paying particular attention to their awareness of cultural factors, including their openness and dispositions towards students’ culture in regards to teaching and learning. In summary, our analysis of data revealed three important components related to participants’ dispositions prior to entering, during, and at completion of the program.

Findings

The findings are presented in three components: Dispositions upon entrance into the program, during program, and at the completion of the program.

Dispositions Upon Entrance Into the Program

Two themes emerged in the analysis of the data upon entrance into the program: equity awareness and deficit awareness. Equity Awareness is defined as a desire for equity, recognition of inequitable practices, a desire to advocate for students, and the optimism in accomplishing their advocacy efforts. Deficit Awareness is described as critiquing the act of placing blame for failure in school on the child and/or family.

All participants were aware of equity differences in school for various reasons. Amber noted that the quality of education varies depending upon school location, “Good schooling depends on where you live. Best teachers go to school with better kids.” Danielle realized that tests were culture biased, “Test should not be design for the culture we are.” Amber noted that if the culture of a school was not responsive to the needs of CLD students that a teacher may have to stand up for that child, “If [the decision] was extreme, I would fight for [the student].”

With regard to deficit awareness, the data were more complex. While all participants indicated that deficit thinking about students was negative in their entrance interviews, the way they represented this thinking was on a continuum. For example, Janice and Linda focused on differences about students from minority heritages or lower socio-economic backgrounds. “Students’ backgrounds are the reason for shortcomings in achievement testing for minority students” (Janice). “Kids become self-fulfilling prophecy [in regards to why they struggle]” (Linda). Erin talked about how teachers do not make an impact in academic learning, “Teachers don’t differentiate enough. They need to change activities and help students want to learn math.”

Dispositions During Program

Data collected from questionnaires completed after each of the five workshops generated four themes: In it for the Students, Cultural/Linguistic Responsiveness, Recognition of Areas of Improvement, and Awareness of Differences. Participants showed evidence of empathy, adaption, culturally responsive support for students, a desire to be advocates, and an understanding of the importance of communication. Comments demonstrated participants’ passion for serving CLD students.

In it for the students. Participants showed a desire to make a difference in the lives of CLD students. They realized that they had responsibilities as teachers that went
beyond teaching mathematics. Amber spoke of being aware of school culture and being willing to reach out for assistance, “Be aware of behavior and conditions at school. Be prepared to help [students] and seek help from others [teachers] when appropriate.” Erin stated that she could only control her own classroom environment, “Provide security for students inside my classroom and offer to let them stay after school while I’m working.” Janice noted that she had learned the importance of communication, “Keep parent contact and communication open.” Amber expressed a dilemma and a need to know more about how to be an advocate, “How can I advocate for [homeless students] without making them feel embarrassed about their situation.”

Cultural/linguistic responsiveness. Participants understood the need to teach in a culturally and linguistically responsive manner. Linda stated, “Understand the background of my students in order to create culturally relevant math problems.” Janice said, “To empower our students, they need to see how math can help our students against social justice issues. I want my students to be successful citizens of the world.” Danielle wondered how she could help students see beyond their current context. “How do I get students to realize the importance of being life-long learners?”

Recognition of areas of improvement. There was an overall recognition by participants of being at the beginning of their journey as teachers of CLD learners. “I feel like I could use more exposure in this [economically disadvantaged] area...If I was placed in an inner city low-income majority students, I would probably feel overwhelmed” (Janice). “I need to learn activities [for ELs]” (Danielle). “Let go of pet peeves [to focus on student learning]” (Linda). “I feel that I could use more exposure and knowledge about different cultures. I feel more comfortable with certain ethnic students – Black, Hispanic – than maybe others” (Janice).

Awareness of differences. Participants understood that differences impacted the lives of their students and their lives as teachers. Danielle questioned decisions that she made, “As a White woman, who has a totally different concept of necessities, why should I judge? Do I have the right to judge?” Linda reflected on the need to keep the privacy of homeless students in her classroom, “I need to make myself aware of [the impact of homelessness on schooling] as soon as possible and immediately work to keep the privacy of students in my classroom.” Janice considered the need to make learning relevant to her students’ lives, “Differences in how and what can be used in the classroom with things that are applicable to their lives”.

Dispositions at the Completion of the Program

Three themes emerged at the completion of the program: Cultural/Linguistic Responsiveness, Discovering Differences, and Interpersonal Awareness. Additionally, each theme was analyzed to produce sub-themes.

Cultural/linguistic responsiveness. Participants exhibited positive change in their understanding of culture and how cultural responsiveness impacts teaching and learning. In particular, participant responses indicated two main sub-themes: high expectations and connections.

High expectations. Erin noted that it is important to, “get everybody on a common group to build them up, and to have them excel, beyond what’s required of them to help them meet expectations.” Linda reflected on the fact that she may not have assumed high expectations for all students when she entered the program, “I’ve used what I’ve
learned from the workshops to rethink my expectations and to differentiate instruction.” Danielle expressed surprise that her students only saw one path to college and that was through the military.

I have so many students who are seniors this year and [they say], “I have to go into the military because that’s the only way I can pay for college.” I’m like, oh my gosh, there’s so much money out there for you. I’ll help you investigate.

Connections. Participants realized the importance of making connections with their students. Erin noted that, “[I] modify and differentiate my lesson in ways that will not only allow me to increase their learning potential.” Amber found that:

I do a lot of getting to know my students, their personalities, their interests, their backgrounds, and their ability level both mathematically and with language. I use that information to modify and differentiate my lessons in ways that will not only allow me to increase their learning potential, but keep theirs.

In the final semester of the program, Amber had English learners (EL) in her classroom. Here is how she made connections with her students who did not want to speak English in class.

I think a lot of it comes from the insecurity to speak English, ‘well I am not going to speak a language because that’s not what I am, I am Hispanic so I am going to speak Spanish’ so I said ‘okay so you can’t do both.’ … okay math is the primary language that I am here to speak or to teach, maybe teaching language will be the secondary aspects. So ever since I start letting it be more of bilingual kind of atmosphere. It has been more relax.

Linda noted that teachers who are different from the children they teach need to reach out to better understand their students.

Statistics show that most of the teachers that come in [to teach in a Title I school] don’t come from that kind of environment so there is a certain disconnection, so they don’t really understand where those kids are really coming from, they don’t understand how to connect with them, so that makes it even harder.

Discovering differences. Participants noted differences in two areas: cultural and linguistic differences and differences in societal influences.

Cultural and linguistic differences. Participants became aware of the impact of differences in home culture and how these differences can impact the schooling environment. Erin noted that,

A lot of factors go into why students perform the way they do. I had a lot of students sleep in class or look tired…it opened my eyes to what students go through and how it impacts them in school. If a lot of things are going on at home, it’s hard for them to focus in school.

Danielle discovered that, “The hardest thing for me to realize is they’re [English learners] not being disrespectful. They’re not being rude it’s just who they are.”
Linguistics was another area where participants noted differences. As shown in an earlier quote, Amber realized that English learners were not going to automatically speak English in her class and that she had to come to terms with the situation. Amber also noted that she learned, “Some days, they [English learners] get fatigue really quickly dealing with all the language.”

**Differences in societal influences.** Danielle noted the differences between her son’s high school education and that of her students at the Title I school where she teaches,

... as a new teacher I try not to judge anything. So when teachers tell me they don’t have support at home, I am not going to be believe it until I know it to be true. All I know is that my son goes to a high school [in an affluent area, and they recommend that he [gets extra support outside of school]. I didn’t get a choice. I knew that my son has to have [that] or he would not be able to keep up in the classroom. Here there is no way you can ask students/parents to provide that and [my Title I high school] doesn’t have the resource to provide that for them.

**Interpersonal awareness.** Interpersonal awareness focused on three sub-areas: reflective, responsibility, and equity.

**Reflective.** Danielle found that her students are teaching her in a variety of ways, “They are teaching me to be patient, to be kind, to be generous.” She also found that she “...needs to be more cognoscente of vocabulary, and not just because of another language, but there is teenager language.”

**Responsibility.** Responsibility was part of each participant’s interpersonal awareness. Danielle realized that she needed to make connections, but it took a lot of time. “Oh I’m going to have to find a way you make that connect. And I just do research, it’s a lot of work (laugh). Yeah it’s a lot of work.” Linda came to realize that it is her responsibility to differentiate instruction. “A strong EL...he still wasn’t doing well on test. What I mean is this kid knows calculus in the eighth grade. He was doing integrals on the board. I said, ‘Obviously I have to make this accessible to him’.” Janice also came to the conclusion that she had to change her method of teaching for English learners. “my method to my goals changes...different ways to teach diverse students...use of manipulatives and visual aids, doing word walls and concentrating on vocabulary...” Additionally with regard to differentiation, Amber stated, “I try to make it [lesson] into a game whenever possible... [the mathematics] stays with them longer and it gives them something to reference”.

**Equity.** As with success, equity is difficult to tease out because it is embedded in many of the quotes already used as evidence. But it was evident that all participants agreed with the statement that all children can be successful in school with the right kind of assistance.

**Discussion and Conclusion**

The purpose of this study was to examine to what extent does a program, designed to prepare teachers to effectively teach cultural and linguistically diverse students, impact the cultural dispositions of prospective mathematics teachers. Understanding how a specialized program can impact cultural dispositions of pre-service teachers may provide a starting point for increasing sustainability in CLD schools. Overall, our findings were
similar to that of Bennett (2008) regarding teaching learners from lower socio-economic backgrounds. Findings indicated that critical experiences in teacher education impacted prospective teachers’ dispositions towards teaching CLD learners. Monthly seminars and professional conferences focused on cultural responsiveness, teaching for social justice, teaching students who are homeless, mathematical differentiation, and teaching mathematics to English learners positively impacted the participants’ cultural dispositions and diversity and interpersonal awareness. Furthermore, the field experience played an integral role in the participants’ development of cultural dispositions. It provided opportunities for the participants to make connections with their students that led to differentiation, and culturally responsive lessons.

Our findings also indicate that pre-service teachers whose cultural dispositions are developed tend to embrace diversity and are reflective in their practice as it relates to creating a learning environment that is equitable. According to Schussler et al. (2008a), teachers who have the inclination to reflect on cultural norms and those of their students tend to address the needs of their students. This supports the need to produce effective mathematics teachers for CLD learners by preparing prospective teachers who have dispositions that support students’ mathematical thinking and learning as well as their home culture and funds of knowledge (Gay, 2000).

Some critics say examining pre-service teachers’ dispositions may “detract from the real work of giving teachers-to-be the knowledge and skills needed to teach their future students” (Villegas, 2007, p. 370). However, beliefs and dispositions impact actions (Schussler et al., 2008; Splitter, 2010). As sustainability demands transformation, a new paradigm of thinking and acting promotes “a catalytic change for sustainability” where teachers are aware of their beliefs and practices (El-Deghaidy, 2012, p. 25). This study illustrates a case in which prospective teachers who demonstrate appropriate dispositions have decided to integrate theory into their practice. For example, the entrance interviews indicated participants exhibited initial acuity towards cultural dispositions and had a genuine desire to teach in a CLD school environment. Figure 2 provides a visual representation of our findings. Participants entered the program with experiences, preconceived notions and other environmental inputs. They also entered with an awareness of differences in themselves and the students they would be serving, an awareness of “the other”. As we engaged participants in various literatures, workshops and conferences, they had an increased awareness of their own differences and the power they had to impact change for their diverse students.

![Figure 2. Visual representation of findings](image-url)
The results of this study will benefit those engaged in teacher education. It will provide a venue for further discussions on the importance of integrating the development of culturally responsive pedagogy and dispositions into the teacher’s professional practice and fostering teacher education for sustainability (Strode, 2015). It is well documented that cultural relevance and responsiveness makes a difference (Ladson-Billings, 1994; Gay, 2000) and cultural dispositions are effective tools for sustainable development (Salomäki, Ruokonen, & Ruismäki, 2012). Preparing teachers who are culturally competent assists in ensuring that all students reach their full potential academically (Aceves & Orosco, 2014).

With regard specifically to the teaching of mathematics, culturally competent teachers have the dispositions, knowledge, and skills to support sustainable development by creating a mathematics learning environment where teacher planning and instructional practice draw on the diverse knowledge and experiences of the learners. This practice ensures cultural and linguistic inclusion, fosters pride among learners in their own cultural heritage, and improves academic learning (McKeown, 2011). When creating this type of mathematics learning environment, a culturally competent teacher understands that there are multiple perspectives on mathematical knowledge and challenges learners to think critically about these varying perspectives in order to address local and global issues (McKeown, 2013). Linguistic and cultural dispositions play an important role in sustainable development. If linguistically and culturally diverse students are to gain the confidence and skills they will need to move forward to a more advanced study of mathematics and throughout their lives, mathematics teachers must have the cultural dispositions that supports a high quality education for students from CLD backgrounds, while promoting and preserving their cultural heritage.

At the submission of this manuscript, four of the five participants are working in CLD settings, of which one teaches sheltered EL mathematics. These participants have taught in diverse environments for five years, thus demonstrating sustainability. The fifth participant has left the profession, stating lack of support from administration. She taught in a school that did not have a varied cultural or linguistics student population. As a result of the current status of our participants’ sustainability, we recommend future research to examine how these culturally dispositions are reflected in practice.

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Delving Into Key Dimensions of ESD Through Analyses of a Middle School Science Textbook

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Abstract
Uncertainties and debates regarding the term of sustainable development are still going on, and similarly, the notion of education for sustainable development (ESD) is open to debate. There has been an attempt to make the concept of ESD evident, which is quite challenging. Palmer (1998) stated the appropriateness of ESD within environmental education and presented ESD as a new trend for teaching and learning about the environment. In line with these interpretations, Sauvé (2002) pointed out that ESD seems to emerge as a current issue within environmental education. Contrary to these claims, some researchers do not interpret ESD as an evolution within environmental education. According to Sterling (2001), ESD can be recognized as sustainable education in which there is a movement toward the renewal of education systems and institutions ‘doing better things’ and ‘seeing things differently’. Apart from those qualitatively different interpretations of ESD, in 1998 the Council for Environmental Education published a strategy report (CEE, 1998) which is particularly significant for teachers. This report specified seven key dimensions regarding ESD, namely: interdependence; citizenship and stewardship; needs and rights of future generations; diversity; quality of life, equity and justice; sustainable change; and uncertainty and precaution in action. This study could provide an analysis of Turkish middle school science textbooks with respect to these key dimensions on ESD. Current evidences showed that these textbooks do not refer to the dimensions of sustainable development sufficiently.

Keywords: education for sustainable development, middle school science education, sustainable use of natural resources

The Vision of Sustainable Development

We have utilized human-centric approaches to understand our value, our place and role within the biological systems. Such an approach overemphasizing human beings has brought about depletion of natural resources, damage to natural environment and created a challenging issue to the long-term sustainability of our planet, the earth (Tilmanns, Holland, Lorenzi, and McDonagh, 2014).

The concept of sustainability was first introduced by a Western environmentalist in the World Council of Churches in 1974 (World Council of Churches, 1974). It was emerged as a result of feelings of concern toward the environment when human beings
in many parts of the world suffer from extreme poverty, lack of fresh water, or discrimination. Sustainability accompanied by sustainable development became a central issue when the United Nations’ World Commission on Environment and Development published its report called Our Common Future (World Commission on Environment and Development, 1987). The key point behind this report that was originated from competitive demands for environmental protection and economic development was actually a new approach: sustainable development. It was reported that sustainable development was dealing with both equity between generations and equity within generations.

The definition WCED suggested: “Sustainable development is development which meets the needs of the present without comprising the ability of future generations to meet their own needs” (WCED, 1987, p. 43). The brief definition of sustainable development by WCED implies that human needs are basic and essential. Furthermore, economic development accompanied by equity to share resources with poor nations should be maintained and the equity should be encouraged by effective citizen participation. Until the recent years, the literature review (e.g. Kates, Parris and Leiserowitz, 2005) has pointed out the unclear points of the standard definition of sustainable development.

Governments, non-governmental organizations, and international agencies quickly got used to the term “sustainable development”. Since United Nations Conference on Environment and Development (UNCED) which took place in Rio de Janeiro in 1992, the terms “sustainability” and “sustainable development” have been used interchangeably (UNCED, 1992).

To understand the core idea behind “sustainability”, every individual has to know why our world is truly unsustainable and what the indicators are which show that our world is unsustainable. Unsustainability has diverse affects on different aspects of our life. Thus, the need for active engagement of every individual towards sustainability is very urgent.

In 2004, Webster stressed that global or local unsustainability trends could not be considered just about environment or nature; but it also deals with social conditions, politics, and the economy as well. Increasing wealth has been accompanied by increasing inequality, both within nations and regions, and in the world as a whole. Thus, many serious health and welfare issues have been placed among the current issues worldwide. In rich nations, wealth has been accompanied by increasing crime, drug, and alcohol abuse, mental health problems. The 2030 Agenda for Sustainable Development (UN, 2015) has affirmed that billions of people continue to live in poverty and inequalities within and among countries are still rising. Gender inequality and youth unemployment has been regarded as great challenge. Depletion of natural resources, adverse consequences of environmental degradation covering the long list of challenges (e.g. loss of biodiversity, desertification, drought, global warming, fresh water scarcity) that we suffer are among the threats to the survival of many societies and of the biological support systems.

To overcome the problems emerging with unsustainability trends, education and educational cooperation has been viewed as an important factor in the resolution of the problems regarding these global and local trends. A worldwide action plan, namely Agenda 21 accepted at the Earth Summit in 1992 proposed that education is critical for promoting sustainable development and improving the capacity of the people to address sustainable development issues (UNCED, 1992). A later document, the World Summit on Sustainable Development in Johannesburg also points out the importance of education to meet the basic needs of all including the future generations (WSSD, 2002).
Education for Sustainable Development

Not only are uncertainties and confusions regarding the concept of sustainable development still going on, but also the notion of education for sustainable development (ESD) is similarly open to debate. Pertinent to sustainable development, the literature extensively reported what should be taught and learned in the context of knowledge, skills and values that could aid in attaining the major goals of sustainable development (Makrakis and Kostoulas-Makrakis, 2012). There has been an attempt to make the concept of education for sustainable development evident, which is quite challenging. According to some researchers (e.g. Sauvé, 2002), ESD seems to emerge as a current issue within environmental education. This idea was supported by Fien (1993) and Huckle (1993) who indicated an emphasis on issues of sustainability evolving through the prioritization of the understanding of social, political and economic influences on the environment and enhancement of children’s awareness, emotional bonding to nature, and responsible actions. In line with these interpretations, Palmer (1998) stated the appropriateness of ESD within environmental education and presented ESD as a new trend for teaching and learning about the environment.

On contrary to these suggestions, some researchers do not interpret ESD as an evolution within environmental education. This may be due to another point of view that gives priority to physical environment and issues such as human impact, preservation and conservation of the nature through environmental education. According to Sterling (2001), ESD can be recognized as sustainable education in which there is a movement toward the renewal of education systems and institutions ‘doing better things’ and ‘seeing things differently’. Apart from those qualitatively different interpretations of ESD, in 1998 the Council for Environmental Education published a strategy report (CEE, 1998) titled with ‘Education for Sustainable Development in the Schools Sector’ in Sustainable Development Education Panel (SDEP) that is particularly significant for teachers. ESD was defined in this report (p.3) in the following way:

“Education for sustainable development enables people to develop the knowledge, values, and skills to participate in decisions about the way we do things individually and collectively, both globally and locally, that will improve the quality of life now and without damaging the planet for the future”.

The report was written by some educators assigned by the government of England and Wales where sustainable development was placed in the revised National Curriculum for the year 2000. It also serves for learning outcomes reflecting each key spheres of ESD. Since there is little exemplification of teaching practices regarding ESD, the researchers (Summers and Kruger, 2003; Summers, Corney and Childs, 2003) which focused on English primary school teachers’ reflections on each dimensions of sustainable development into classroom teaching has a great contribution to our knowledge base. Not paying special attention to the complexities and ambiguities stated in the context of the definition of sustainable development, Summers and Kruger (2003) chose to develop a professional development programme considering ESD and the views expressed in the CEE report. The seven CEE key dimensions of sustainable development were presented as a framework in order to aid in developing an understanding of the sustainability of any human activity, and were depicted by demonstrating how they might apply to a particular issue (species loss). Thus, after a preparation period for teachers’ professional development on ESD, the participants of this program proposed some examples for
Their teaching practices on dimensions of sustainable development (see Table 1) (Summers and Kruger, 2003, p. 169). These authors inferred from the content and teaching strategies included in teachers’ classroom activities that they could interpret ESD in line with CEE framework. Furthermore, they evaluated the teachers’ views from the perspective of Sauvé (1996). Sauvé has considered the connection between the fundamental elements of ESD and conceptions of environmental education. The educator emphasized that ESD has evolved as a result of a need to update the environmental education discourse through the consideration of the needs and rights of human beings as an integral part of the ecosystem. Hopefully from this perspective, these teachers’ conceptions of ESD strongly depended on the citizenship and stewardship covering the importance of taking responsibility, human action, and making a difference. Furthermore, they viewed sustainable development holistically in terms of social, economic and environmental factors. They aimed to engage the pupils in both social and economical issues utilizing the perspectives of people from different communities. To make clear conceptualizations of sustainable development in the wider community of primary school teachers, case-study examples covered in CEE report for classroom practice may not be sufficient. For this reason, Summers and Kruger (2003) recommended that appropriate professional development programs may support in interpreting the dimensions of ESD reported in CEE.

Table 1
Exemplifications of ESD Generated by Primary School Teachers (Summers & Kruger, 2003; p. 169)

<table>
<thead>
<tr>
<th>CEE Framework Dimensions &amp; Selected examples from primary school teachers in teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Interdependence</strong> people, the environment and the economy are linked at all levels from local to global</td>
</tr>
<tr>
<td>• <strong>Brazilian rainforests are valuable sources used in western medicine</strong></td>
</tr>
<tr>
<td>• <strong>Global warming from our burning of fossil fuels may contribute to floods in Bangladesh</strong></td>
</tr>
<tr>
<td>• <strong>The common blue butterfly needs grassland grazed by sheep to survive</strong></td>
</tr>
<tr>
<td>2. <strong>Citizenship and stewardship</strong> the importance of taking individual responsibility and action to ensure the world is a better place</td>
</tr>
<tr>
<td>• <strong>Things can be done to make the school environment better for animals, plants and ourselves, e.g. creating a ‘wild’ area or planting ‘butterfly-friendly’ plants</strong></td>
</tr>
<tr>
<td>• <strong>Children can co-operate with others to take energy saving measures in school</strong></td>
</tr>
<tr>
<td>• <strong>Individuals can make a difference to the problem of waste by using the ‘4 Rs’ (reduce, reuse, repair, recycle)</strong></td>
</tr>
<tr>
<td>3. <strong>Needs and rights of future generations</strong> our own basic needs and the implications for the needs of future generations of actions taken today</td>
</tr>
<tr>
<td>• <strong>Utilizing more sustainable and less wasteful energy related actions and products conserves finite energy sources for use by those who come after us</strong></td>
</tr>
<tr>
<td>• <strong>Our children (and their children) have a right to see wild tigers in their natural habitat</strong></td>
</tr>
<tr>
<td>4. <strong>Diversity</strong> respecting and valuing both human diversity – cultural, social and economic – and biodiversity</td>
</tr>
<tr>
<td>• <strong>The variety of species of fish and insects in a river is a measure of water purity</strong></td>
</tr>
<tr>
<td>• <strong>The rainforest environment can sustain an enormous range of plants and animals, many of which have beneficial uses to humanity – what others remain undiscovered?</strong></td>
</tr>
</tbody>
</table>

Sequel to Table 1 see on the next page.
5. Quality of life, equity and justice

Global equity and justice are essential elements of sustainability and basic needs must be met universally.
- A home, water and energy are universal basic needs which are not equally available to all.
- People of more economically developed countries have an ecological footprint greater than the earth share only at the expense of other less fortunate people in less economically developed countries.

6. Sustainable change (development and carrying capacity)

Understanding that resources are finite and that this has implications for people’s lifestyles, and for commerce and industry.
- Burning fossil fuels releases carbon dioxide into the environment – this may exceed the amount which is removed by photosynthesis, leading to global warming.
- The need for landfill sites for waste disposal is not matched by the availability of suitable land.

7. Uncertainty and precaution in action

There are a range of possible approaches to sustainability and situations are constantly changing, indicating a need for flexibility and lifelong learning.
- Every species in an ecosystem, such as a rainforest, must be valued since we are unsure of the knock-on effects of a species’ removal on food chains in the system as a whole.
- People can have different views on sustainability issues to do with water which may be in conflict – such as the views of professional fishermen and scientists about catch quotas.

In recent years, the discussion about sustainability and education for sustainable development has shifted from search for a universal consensus to a position where there is an acceptance of varying definitions and approaches (Scott and Oulton, 1999). Furthermore, Sauvé (1996) supported this view with emphasizing the role of different paths resulting with the desired outcome that can also serve for the concept of sustainable development. According to Scott and Gough (2003), lifelong learning is the key element in sustainable development and it can be a process – not an end state. Sustainability can be thought as a paradigm for the sake of a future in which environmental, social and economic aspects are balanced in order to endeavor for improved quality of life. During this process, interaction with people from different point of view seems to work well in learning more about sustainability.

An Exemplification of ESD Applications
from a Currently Used Textbook in Turkey

ESD efforts undertaken to be able to create a more sustainable future have potential to yield more favorable outcomes when addressed at pupils and young people (Buttigiet and Pace, 2013). This may imply that we should not neglect the ESD efforts towards young people by integrating sustainability issues with appropriate pedagogies. Recently, in order to integrate sustainability issues into curriculum in various disciplines, the common approach followed in different settings has been using the concept as an extra topic; adding a lecture or module to the curriculum (Armstrong, LeHew, 2011). Following a similar trend, in 2013, a significant emphasis on integrating sustainability issues was placed within middle school science education program and relevant textbooks in Turkey. It was the first time that ‘sustainable development’ as terminology appeared within formal school education programs although it was previously aimed to integrate sustain-
Delving Into Key Dimensions of ESD Through Analyses of a Middle School Science...

ability issues within various programs in this country. Sustainable development has been viewed as ‘usage of natural resources by considering the needs of future generations from a perspective of personal and national benefits of using sparingly in terms of society and economy’ (MoNE, 2013). With this point of view, some scientific concepts and issues were introduced by constructing a linkage with societal and economic factors in the context of sustainable development. Within the middle school science education program (5-8 grades), the unit of ‘Properties of Matter’ in seventh grade covered some learning outcomes on the topic of household waste and recycling. The topic of household waste management and recycling could provide a significant opportunity to integrate ESD related vision by considering the CEE framework. Thus, the learning outcomes and the content of the textbook could be analyzed by conducting content analysis.

Some examplifications presented in the middle school science textbook (Ozoglu and Misirlioglu, 2014), in other words some examplifications that could be used in an ESD oriented science instruction in Turkey were presented in Table 2. These examplifications were compared and categorized under the main categories of CEE framework by using a qualitative approach. This part of the current study involved analyzing and synthesizing the information that was obtained from a document as a source into a coherent explanation of what was observed and discovered (Fraenkel and Wallen, 2006). Before the analysis was begun, the categories were determined based on the previous work. It was found that the provided examples covered in the relevant textbook fell into ‘interdependence’, ‘citizenship and stewardship’ dimesions of sustainable development. More specifically, the interdependency among people, the economy, and the environment were stressed in the context of recycling. However, some specific examples showing how recycling in a local setting may contribute to the resolution of a problem also experienced in another country on the planet were among neglected sides of sustainable development in the textbook. While considering the recommended teaching activities, a field trip designating the contribution of chemical industry to the national economy was undertaken. Such an activity modeling outdoor education could be empowered by also emphasizing the impacts of chemical industry on the underground water quality and the strategies to eliminate the negative impacts of these applications.

Table 2
CEE Framework Dimensions & Examples from the Currently Used Science Textbook (Ozoglu & Misirlioglu, 2014)

<table>
<thead>
<tr>
<th>1. Interdependence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>people, the environment and the economy are linked at all levels from local to global</td>
<td></td>
</tr>
<tr>
<td>• Rapid growth in human population and consumption patterns contribute a rise in waste</td>
<td></td>
</tr>
<tr>
<td>• Recycling of 1 tone of paper prevent cutting down of 17 trees</td>
<td></td>
</tr>
<tr>
<td>• People working for recycling industry contribute to national economy and also raise family income</td>
<td></td>
</tr>
<tr>
<td>• Chemical industry field trip – the contribution of products to the national economy</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Citizenship and stewardship</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>the importance of taking individual responsibility and action to ensure the world is a better place</td>
<td></td>
</tr>
<tr>
<td>• Children co-operate with each other and other people around them to produce some measures to the problem of waste by using recycling and reusing</td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

Considering the challenge of sustainable development, education come across with a complex problem which requires a paradigmatic change of course to fortify principles and values coherent with the process of sustainable development. The global crisis we are currently suffering today has emerged as a consequence of the values that have been neglected or even forgotten, by the most developed countries (Cutanda and Murga-Menoyo, 2014). As emphasized by Mifsud (2012), sustainable development is required to be depicted as crucial for all countries and, even more so, in geographically small regions due to the limited natural resource and high population density. In this aspect, Turkey could be considered as a country needed to accelerate its attempts in order to attain sustainable development goals. Based on the current study, we could also consider attaining the learning outcomes regarding recycling and waste management from a broader perspective titling ‘sustainable use of natural resources’. In other words, middle school science education defining ‘sustainable development’ as mentioned above may use ‘sustainable use of natural resources’ as an umbrella term to raise an awareness, develop values, and skills as well as responsibility while focusing on 4R (reducing, reusing, repairing and recycling) model. However, the current situation forces teachers to centralize their teaching around recycling. More importantly, the limitations of recycling process including some restrictions and the need for energy were not covered in the textbook. The concerns orienting around the needs and rights of future generations, diversity, carrying capacity and development, and quality of life, social justice and equity could be handled in the context of ‘sustainable use of natural resources’ or even ‘recycling and waste management’. Reducing and repairing were not emphasized but these measures could be exemplified and examined from carrying capacity and developmental perspective. Lastly and the most importantly, the linkage between climate change perceived and experienced as a global issue and household waste management (Buttigieg and Pace, 2013) does not appear in these science textbooks and learning outcomes. However, such a case could be integrated by carefully considering seven key dimensions of sustainable development. At this point, it crucially important to note that professional development programs for teachers should be on-going in ESD process since in-service training of teachers is influential on sharing updated teaching experiences and provide medium of ESD teaching in formal education (Kabadayi, 2016).

The present study was conducted based on following a path that Summers and Kruger (2003) emphasized previously. On the one hand, it is was reported that the debates on various interpretations of ESD is still going on. On the other hand, Summers and Kruger (2003) evaluated the teaching practices of teachers participating in professional development programs by considering the key dimensions of sustainable development. These authors’ interpretations could shed light on developing educational programs on ESD, preparing textbooks, and educating teachers both professionally and personally.

References


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Philosophy of Sustainable Development, Polish Perspective

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Abstract

The aim of the present paper is to awake awareness of the term “sustainable development” and show that the very term is not understood in a unilateral way. A discrepancy of perception and thus understanding of the notion of sustainability blurs its meaning. Numerous scholars and researchers use the term sustainable or sustainability to refer to the area where abilities of using methods to prevent natural resources can be demonstrated. Besides, scholars and researchers, especially in Central Europe, approach sustainability in a holistic way, paying more attention to a doer (subject) than to the doer’s vicinity full of natural resources (objects). Also school teachers in Poland, when given a task to explain the meaning of sustainable development, tend to underscore personal, social and intellectuals’ abilities and skills of people. The teachers’ observations served as catalysts to develop the presented in the paper discussion and conclusions.

Keywords: sustainable development, philosophy of life, education, humanity, semantic field, social milieu

Introduction

Every human activity, being different from a non-human one, is marked by a conscious approach to a pre-planned task and full awareness of the process of implementing the task requirements, foreseeing, at the same time, its final results. Due to individual differences between human beings, it is quite probable that one and the same task given to two individuals can be substantiated in two different ways thus, resulting in two different outcomes. Not only are age, experience or skills responsible for the final image of substantial or insubstantial value of human activity. Before turning any idea, plan or intention into reality, it is strongly desirable for the doer to perceive and comprehend all those intricacies which he can come across on the way to the designed destination. Besides, it has to be remembered that ideas or plans become very demanding and perplexed when the final outcome of carefully designed and conscious actions is to be human development of any nature. Out of many developmental aspects, sustainable development of a single human being seems to be of paramount importance for a harmonious and safe functioning of humanity.
Whenever sustainable development becomes a subject matter of discussion, it gives rise to queries and controversies as the issue of sustainability is differently perceived by different social communities in different countries. This is so because the very term – sustainability – is manifested in an array of meanings and interpretations, depending on the needs of its application to reach goals either of social and practical, on the one hand, or purely academic nature, on the other. Therefore, the task of the present discussion is to attempt to penetrate and clarify the notion of sustainability as it is perceived and understood by some circles in Poland.

**Philosophy of Sustainability**

Generally speaking, the notion of sustainability, as it appears in the language of Polish academics, is not monolithic. First of all, it has to be stressed that scholars representing sciences, especially the earth sciences or the modern sciences of ecology, stress the practical aspect of sustainability and thus, understand it differently from those who represent the humanities and view sustainability through the prism of its non-material values. Moreover, the understanding of the very term has much to do with the influence of English from where the term was adopted to Polish via translation. But the Polish equivalents, to a certain extent, blur the true meaning of the term, and thus, cause controversies. To exemplify the present discussion, let us have a look at the semantic field composed by the equivalents of the verb sustain. In Polish, the verb sustain, as it appears in English – Polish dictionaries, directs our attention to the spheres of activities denoted by the following verbs: suspend – maintain – carry – hold – supply – withstand – experience – claim – affirm – suffer – perform – continue – extend (Bulas & Whitefield, 1967; Stanisławski, 1980). Very rarely, is “sustainability” explained shortly as related to support. As a matter of fact, a vast majority of dictionaries, including encyclopedic dictionaries, do not even give such an entry as “sustainability”. Instead, they only include “sustainable”, explaining it as capable of being sustained or maintained (Webster’s New Universal..., 1983). Finally, “sustained” is defined as “maintained at length without interruption, weakening or losing in power or quality” (Webster’s Third..., 1993, p. 2304).

The content of the presented above semantic field and its clash with the commonly used meaning of the word “sustainability” derived from the field, points to the quality of translation as responsible for the correct or incorrect use of any word, since translatability makes us sensitive to the understanding of the very thought or idea embedded in the translated word (cf. Zygmunt, 2016). Hence, the multitude of Polish equivalents to the English verb “sustain” must have resulted in multiple versions denoting sustainability, in many cases deviating from its core meaning. As mentioned earlier, representatives of exact sciences or natural science view sustainability as a factor applicable for practical reasons in the sphere of ecology or economics while the humanity minded academics pay more attention to spiritual or intellectual values to become elements of sustainable development of Man, perceived holistically (cf. Salite, 2015). At this point we witness two philosophical trends which can be applicable in the process of human development, in general.

One may object to the employment of philosophy and the philosophical approach to the very understanding of sustainability. Without a doubt and reservation it can be claimed that sustainability or sustainable development is directly related to social philosophy and the philosophy of life in its milder form, known in German as Labensphilosophie,
which in one way or the other forges a way to accomplishing the designed plans, and thus success in human life.

To understand the above mentioned relationship we have to understand and accept the role played in human life by philosophy, in general. The role assigned to philosophy becomes transparent when we only understand its true nature. The term “philosophy” is composed of two Greek words: *filein*, meaning to love, and *sofia* which means wisdom. Hence, philosophy means “the love for wisdom”. Undoubtedly, wisdom is the sense of human life which can be perfectly shaped due to the human strive for development of any nature, including sustainable. In this respect, philosophy of life in its pragmatic manifestation, especially this one represented by William James (1995) gives indications for human development.

According to James’s view, the world we create through our daily activities is a cluster of diverse experiences that can only be understood through a proper application of methods springing up from empiricism. Hence, this empiric view clearly shows that our knowledge derives from experience. Since the consequence of human development is both the development and deepening of knowledge, and since knowledge derives from experience, this sets a staged process of gaining experience which is responsible for harmonious and sustainable development. Nevertheless, it has to be taken into account that empiricism does not ignore the power of mind of the involved in human activity doer, and his acts of observation but considers them as vital for the final outcome of any empirical approach. Moreover, an active human being – doer – is not fostered in isolation but in a social milieu and in a given social situation. Hence, James stresses that people change and develop how they act. Thus the development of an active individual will be directly related to the role he actually plays in the social environment. At this point we can risk assuming that if you are “great”, the social environment will help you develop your greatness (James, 1956; 1995).

Far more influential in developing and shaping human personality is social philosophy and also, although lesser in scope and effect, philosophy of dialog represented by Buber (2002) and Ebner (in Green, 1980) who emphasize the role of relationship between human beings linked by a direct contact enabling them communication and thought exchange. Undoubtedly, such relationship greatly contributes to human development (see also Zygmunt, 2016).

Concentrating our attention on the role of social philosophy in the process of sustainable development of a person, first of all, we have to admit that this is the human being who is responsible for whatever happens in the social environment. Again, this is the human being who is responsible for birth control and thus, increase or decrease of birthrate. Moreover, urban or rural communities need to be adapted to the environment and therefore, consume a variety of survival resources such as, for example, useful lands and waters, oil or coal that can be used to facilitate the life of communities and increase their wealth. Inevitably, the process of making use of natural resources is directly related to consumption. In consequence, the consumed resources and resources-related by-products have to be dumped as consumption always results in the waste and necessity of its storage or wipeout. At this point we need human understanding of the problem of environmental protection directly related to human behavior and daily activities, often thoughtless, causing waste heat or water wastes. Paradoxically enough, environmental protection dwells in the human mind and the human ability to perceive the source of danger.
Viewing resources as a reserve supply that can be drawn upon when needed we often forget that resources can be also perceived as all the money, property or skills that you have available when you call for them. In this respect, we can talk about financial resources, technical resources or intellectual, inner resources pertaining to personal qualities. Undoubtedly, intellectual abilities of community members and their full understanding of the essence of sustainability is a guarantee of the world’s safety and human development. Ignorant and thoughtless communities are unaware of menace resulting from human improper behavior in environmental and economic spheres of sustainability. This is so because unawareness is a source of destruction which hampers sustainable development. In many cases people behave and react unintentionally but destructively as they have never been taught what is right and what is wrong. Therefore, \textit{conditio sine qua non} of sustainable development is the holistic development of a person regarded as the key element of the social sphere of sustainability. Only education with regard to the philosophy of life can give guidance to humanity pointing both to environmental threats and ways of their avoidance. The world can only be saved by conscious and thoughtful people understanding their role in its development and protection. This is the indication to what philosophy of sustainability should refer.

As mentioned earlier, sustainability and especially the notion of sustainable development is perceived in diverse ways in Poland, depending on the social and professional group of perceivers. What is important in this case, is the perception and understanding as demonstrated by school teachers as formal education for sustainable development usually starts there. For this reason a brief research was designed to examine teachers in selected schools of the Lublin School District.

**Interview**

In order to check the level of understanding of the term “sustainable development”, a brief research in the form of interview was carried out with 47 school teachers of random choice, representing 19 schools (ranging from elementary to high school level) of the Lublin School District. The teachers were given only one simple question: \textit{What do you understand by sustainable development?} (sustainable development means, in Polish, \textit{zrównoważony rozwój}), and asked to write in Polish an answer in one, maximum in two sentences.

A careful analysis of the received answers allows for categorization and arranging them into 6 classes, as follows:

- Development of mental qualities and communicative skills \((A = 16)\)
- Holistic development of a person \((B = 11)\)
- Harmonious deepening of knowledge, combining theory and practice \((C = 7)\)
- Development of cooperative abilities/social skills \((D = 6)\)
- Ability to function in a social/professional environment \((E = 4)\)
- Ability to be sensitive or protective to the environment \((F = 3)\).

The capitals and digits in the brackets show the number of answers assigned to each distinguished category.

A thorough analysis of the above mentioned categories permits to combine them thematically and logically in order to distinguish two groups – one characteristic of the dominance of intrinsic features of human development \((A, B, C)\), and the other one, where extrinsic features prevail \((D, E, F)\). None of the groups is purely extrinsic or
intrinsic. Anyway, the decision of forming such groups as above was made only on the basis of a sheer predominance of features found in the analyzed answers.

Therefore, as far as Category A is concerned (Development of mental qualities and communicative skills – 16 answers), the subjects stressed the importance of intellectual development and ability to gain and share knowledge in a formal and informal way. Besides, the knowledge of foreign languages and ability to gain and share knowledge due to international contacts (for example, exchange programs) was mentioned, as well.

Category B (Holistic development of a person – 11 answers) was hard to decide as the answers were very general, pointing to nomen omen general or holistic development. In two cases, the ability to demonstrate general knowledge for functional purposes was underscored.

Category C (Harmonious deepening of knowledge, combining theory and practice – 7 cases), to some extent, is close to Category B as the reference to functional purposes can be found in both categories. However, the focus on combining theory with practice is seen in all the respondents’ answers; they also emphasize the value of harmonious development of the whole person.

With reference to Category D (Development of cooperative abilities – 6 cases), it is quite evident that social skills are in focus. In all the answers, the ability to cooperate with partners and function in a social milieu was viewed as priority.

A certain resemblance can be found between Categories D and E (Ability to function in a social/professional group – 4 answers) where the respondents always put stress on functioning either in a social or professional group. No doubt, such functioning can be considered as both social and cooperative in character.

Finally, Category F (Ability to be sensitive or protective to the environment – 3 answers, only) is a clear manifestation of interest in extrinsic matters related to sustainable development.

The table below gives a pure illustration of the examined teachers’ understanding of sustainable development and presents their visions in the frequency of occurrence and percentage.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>16</td>
<td>34.04</td>
<td>47</td>
</tr>
<tr>
<td>B</td>
<td>11</td>
<td>23.41</td>
<td>47</td>
</tr>
<tr>
<td>C</td>
<td>7</td>
<td>14.89</td>
<td>47</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
<td>12.77</td>
<td>47</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>8.51</td>
<td>47</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
<td>6.38</td>
<td>47</td>
</tr>
</tbody>
</table>

It is quite significant that a vast majority of the examined teachers pointed to intrinsic factors as responsible for the process of human development. Although, as mentioned earlier, a clear division into answers either intrinsically or extrinsically inclined is difficult to determine, there is a great resemblance between the answers under Category
A, B, and C in comparison to another resemblance between the answers classified as Category D, E, and F. If we only accept that the answers under A, B and C are of the intrinsic nature while the responses classify as D, E and F are extrinsically related, we can easily observe that the image of sustainable development as created by the selected Polish school teachers strongly relies on intrinsic elements attributed to Man. Out of 47 responses, the answers considered as intrinsic in nature amount to 34 (72.34%), which in comparison to 13 answers (27.66%) characteristic of extrinsic inclination, puts up a hallmark pointing to the examined teachers’ understanding of sustainable development. The obtained results show that a vast majority of the subjects associate sustainable development with intrinsically related factors and consider it as the very essence of human being.

As comes out from the above presented discussion, development in general is attributed to human development inseparable from the development of mental qualities and communicative skills and therefore, holistic development of a person (27 subjects = 57.45%). Social and functional qualities are stressed by those subjects who underscore cooperation and the development of those skills and abilities which allow for professional functioning in a social milieu (10 opinions = 21.28%). Quite naturally, overconcentration on the development of human being must have resulted in a marginal treatment of sustainable development in relation to the environment (3 responses only = 6.38%).

Discussion

The above-presented results resemble, at least to some extent, the observations by Świtała (2015), who also points to the fact that the understanding of the concept of sustainable development varies among Polish teachers, being “intuitive rather than based on scientific or theoretical knowledge” (p. 129). The interview results clearly show that the examined teachers usually viewed sustainable development through the prism of intrinsic values directly related to the development of knowledge and mental qualities, and therefore – to the holistic development of Man (c.f. Category A, B and C). Therefore, intrinsic in nature values “which form the foundations of moral education and help us to get to know both ourselves and others better”, as Świtała (2015, p. 125) notices, could influence the teachers’ image and perception of sustainable development. Although in minority (c.f. Category D and E = 21.28%), they also find cooperative abilities and the functioning in a social or professional environment as a great asset enabling human development. Totally, an overwhelming number of responses (44 = 93.62%) underscores the need for holistic development and thus, the examined teachers identify sustainable development with the development of such features as behavioral, temperamental, emotional and especially mental that characterize a unique individual. In this respect, reflections and indications which can be worked out on the basis of the obtained during the interview data parallel the observations and opinions expressed by Salóte (2015), Świtała (2015), Badjanova & Iliško (2015) who also perceive the holistic approach to education and intrinsic values, in general, as attributes en route to sustainable development.

Yet, extrinsic matters directly related to sustainable development focused on environmental protection were present in the research results, although in a scanty count (6.38%). It can be expected that a relatively low count may result from the lack of environmental literacy and sensitivity to environmental care and protection, which is a deficit in teachers’
competence found not only in Poland but in Central Europe, in general (c.f. Šimonova and Činčera, 2016).

Nevertheless, it can also be expected that not only the lack of environmental literacy and sensitivity to environmental protection might have influenced the teachers’ point of view and understanding of sustainability. It is very probable that the main reason of perceiving and identifying sustainable development with the development of human being was the translation of the very phrase from English into Polish. Hence, the term “sustainable development” appears in the Polish writing devoted to sustainability as “zrównoważony rozwój” where “rozwój” means development, and the meaning does not cause any problem in understanding the word’s usage. The problem is caused by the used in Polish word “zrównoważony” which, as an adjective, defines the sphere of harmony and balance. In consequence, sustainable development is, first of all, understood as harmonious or balanced development. No wonder then, that bearing in mind the term “zrównoważony”, the examined teachers concentrated their attention on harmonious and balanced development of a person.

Although the term development (in Polish “rozwój”) seems to be clear, yet it deserves deeper consideration. Fundamentally, development is understood as irreversible, harmonious, and well-balanced sequence of structural and functional changes dependent on both internal and external factors responsible for achieving the acme in the case of the individual or a social group. Moreover, the very term such as “life span development” as used in pedagogy, directly points to the core element of attainment and development, that is the human being. Even though there is some divergence in defining development, resulting in sub-categories such as linear development, socio-dynamic, or transformational development, all of them concentrate on Man as the subject. Hence, this is the subject WHO develops and WHOSE development exerts a powerful influence upon the development of the subject’s vicinity. Yet, this is the subject whose sustainable development is directly related to the sustainable development of the Universe. What counts here is the intellectual development of a person and his understanding and sensitivity to the environmental threats. This is how the internal development, through the external functioning of the developed subject, causes that the objects which compose the environment can be protected and saved for generations.

Of great significance and value for the understanding of the notion of sustainable development is Urie Bronfenbrenner’s ecological systems theory also known as the Human Ecology Theory (Bronfenbrenner, 1979). According to the theory, human development is influenced by the different types of environmental systems. These systems are composed of the micro system (that is the direct environment we live in), the mesosystem (relationships between the micro systems in the individual’s life), the exosystem (social relationship evoked by human activity or the lack of activity), the macro system (cultural setting), and finally, the chronosystem (transitions and shifts in the individual’s lifespan). This theory helps us understand how strongly we are related to the environment by shaping it, thus shaping simultaneously our behavior, too. Through the shaping of our behavior, we develop. This is the point which Urie Bronfenbrenner raises in his further studies where he discusses the ecology of human development (Bronfenbrenner, 2005). Human balanced development attained in the environmental setting guarantees our sensitivity to the environmental systems. This is so because the whole process of human development is shaped by the interaction between an individual and the environment. Hence, this is the essence of sustainable development.
As a matter of fact, the presented by Bronfenbrenner point of view finds resemblance in the examined teachers’ perception of sustainable development. They also stress the human aspect of sustainable development by viewing a human being as a *spiritus movens* of sustainability.

**Conclusions**

First of all, sustainable development viewed from the Polish perspective refers to the development of a person. If the intention is to develop the contemporary world, in general or the environment we live in, in particular, the starting point is the development of humankind – all people who create the environment and foster it.

It could not be risky to say that in the eyes of the examined Polish teachers’ sustainable development is viewed as a holistic process that effects a single human being, which, in turn, seems to be of paramount importance for a harmonious and safe functioning of humanity. Moreover, balanced and harmonious development of human features indispensable for functioning in the environment of any nature is essential for attaining high social status. It can be expected that with this indication in mind, the majority of the subjects tried to characterize sustainable development, stressing unintentionally the validity of the holistic approach.

It cannot be denied that the development of humanity relies on the development of each individual composing it. It cannot be also denied that a fully developed individual becomes the subject who controls and exerts influence upon the objects found in the vicinity. Only then, can we say that the environment is safe and protected when it remains under maintenance and surveillance of the fully developed subject.

According to philosophy of life (Lebensphilosophie), human activity determines the level of human knowledge and perception of the outer world. Life is dynamic because human activity is dynamic but an active individual is required to be aware of the results of his or her specific behavior and actions (c.f. James, 1995). Also social philosophy and philosophy of right concentrate both on human activity within a social community and a human being as an active element of the Universe. Hence, every social group is perceived as a structured institution which serves its members to develop (c.f. Murphy, 1994).

Unfortunately, we often ignore the human being in the discussion on sustainable development turning our attention to non-human spheres of sustainability, especially economic and environmental. No sphere can develop without the development of a human being. It is strongly believed that philosophy of sustainable development can change the perspective with regard to real-sense development, showing clearly the role of a person in it. This is philosophy of sustainable development which puts the human being into the center of attention and esteem. Therefore, a person becomes the subject while the environment is treated as the object of the Universe. This is a person who evolves through the process of changes while functioning in the environment thus, effecting it and protecting due to his developed awareness and understanding of the need for saving the world.
References


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Culture in Sustainability –
Defining Cultural Sustainability in Education

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Abstract

The definition of cultural sustainability in education is explored in this article by looking into conceptions of cultural sustainability collected through expert queries and focus group engagement. These conceptions are compared with the scientific and especially pedagogical discourse on the matter as well as Soini and Birkeland’s theory of story lines of cultural sustainability and Barth’s theory of micro-, median- and macro-levels of culture. The analysis shows that the viewpoint of education brings a new dimension to the discussion on cultural sustainability. It specifically broadens the “culture in” definition from the perspectives of supporting children’s and youth’s identity process and micro-level encounters. From a theoretical point of view, the study therefore adds depth to the examination of cultural sustainability.

Keywords: cultural sustainability, sustainability education, cultural heritage, cultural rights, cultural identity, basic education

Introduction

In this article conceptions of cultural sustainability (CS) collected through expert queries and focus group engagement are introduced. Second, these conceptions are compared with scientific and especially pedagogical discourse on the matter. The aim of this study is to create an overview of what the Finnish curriculum requirement (NBE, 2014) on the promotion of CS means in basic education. The wide interest towards the learning outcomes of Finnish schools (Niemi, Toom & Kallioniemi, 2012; Sahlberg, 2015) makes Finland an especially appealing case study in planning and developing culturally sustainable education.

In 2011–2015 the collaborative work on CS by a European research network of approximately one hundred researchers is a prime example of increasing interest in the field. The network, COST Action IS1007 Investigating Cultural Sustainability, carried out transdisciplinary work on the concept and practices of CS. As one result of this collaboration, a three-role approach to defining CS was developed: culture as, in and for sustainable development. The “culture as sustainable development” approach defines culture as the basis or core of sustainability, an approach which generates sustainability. Culture is utilized in finding a new understanding of the human place in the world and
highlighting one’s human role as a potential initiator of change (Dessein, Soini, Fairclough, Horlings, 2015). Based on the previous analysis of the author, change towards a culturally sustainable way of living is achieved through familiar educational themes with various titles such as environmental and consumer education (see Laine, 2013a). The “culture for sustainable development” approach sees culture as the “glue” which combines ecological, social and economic pillars. The downside is that this definition has not been widely used (Dessein, Soini, Fairclough, Horlings, 2015).

The “culture in sustainable development” approach views culture as having a separate, independent role as part of sustainable development, as a so-called fourth pillar in addition to ecological, economic and social sustainability. In the author’s previous analysis, this approach was called cultural specifics (Laine, 2013a). The author sees the “culture in” approach as appealing from the point of view of educational sciences and education as practice, because it highlights such themes as multiculturality, cultural rights, local culture and cultural identity, and other themes that are strongly present in the Finnish national core curriculum. From this point of view, the “culture in” approach expands our way of seeing CS by taking into account the contents of the pillar model approach, which can be utilized in authenticating implications for the individual pupil. In this article, after presenting the data from the “culture in” perspective, I will expand the definition of CS in education by comparing the found conceptions with Soini and Birkeland’s theory of story lines of cultural sustainability and Barth’s theory of micro-, median- and macro-levels of culture so that a pedagogically relevant definition of cultural sustainability can be achieved.

**Research Question, Method and Data**

Because there is no existing definition of education-related contents in the field of CS, the following research question was formulated: What are the experts’ conceptions of outlining CS in education? This study is a qualitative study with a multifaceted and detail-oriented approach to the research data. Qualitative research relies on an inductive analysis based on the comprehensive gathering and collection of data in the surrounding environment (Hirsjärvi, Remes & Sajavaara, 2009). However, including a particular theme or subtheme under the umbrella of culturally sustainable education should not be viewed as the main aspect of this study, but rather the increase in the understanding of the multi-faceted nature of sustainable education. Therefore, after reducing and grouping the research data, the analysis is continued by making deductions based on the subthemes and themes. An additional research question therefore was formulated: How can one supplement experts’ conceptions so that a definition of culturally sustainable education would be coherent not only with the data of this study but with the current discussion concerning cultural sustainability and be supplemented with pedagogical aspects from the viewpoint of the Finnish educational system? The latter research question was answered by utilizing Soini and Birkeland’s theory of the story lines of cultural sustainability and Barth’s theory of the micro-, median- and macro-levels of culture.

The Association of Cultural Heritage Education in Finland was responsible for the collection of the data in 2011 (see Laine, 2013b). The author, employed by the association, collected the research data, which consists of two surveys and memorandums of six focus group meetings. Participants who answered the surveys or attended the group meetings share an interest in CS and work in an expert position and/or in an expert
leadership position. Their professions include scholars, adjunct professors, teachers and coordinators, and so on. The fact that all the participants are experts is crucial, as the aim of this study is the generation of new information by studying conceptions, not statistical generalizations. Thus, it is pivotal that the participants know the phenomenon under investigation as well as possible. Because no established group of CS experts was available for this study, so-called snowball sampling was used in the data collection phase.

Information on possible participants was searched by looking for Finnish studies and articles where cultural sustainability is mentioned. This led to the creation of a mailing list, which was then used to invite people to answer two surveys and take part in focus groups. The experts that were found were also asked to name other experts or researchers or studies, which contributed to finding more experts on cultural sustainability as they were added to the mailing list. In addition to this, the experts on the mailing list were given the opportunity to forward invitations to people they preferred (Tuomi & Sarajärvi, 2009). None of the participants wished to remain anonymous. The invitations were sent to the cultural sustainability mailing list of the Association of Cultural Heritage Education (466 persons) and were also distributed to other mailing lists by the Finnish Museums Association, the Finnish Association for Environmental Education and the OKKA Foundation (the Foundation’s aim is to develop education, and be in responsible for the certification of sustainable development in educational institutions).

The study started by defining CS (electronic survey 1, 23 responses). The respondents were asked to reflect on open questions about cultural sustainability, for example why a particular theme should be considered culturally sustainable. Answers were from one to three pages. Starting the study by defining cultural sustainability was necessary, for no established definition existed in the material collection phase. Outlining education that promotes cultural sustainability therefore also required outlining cultural sustainability. The study then continued with questions on the contents of education (electronic survey 2, 59 responses). This survey was used to outline measures, models, practices and educational needs to achieve cultural sustainability. In addition, values connected to cultural sustainability were outlined. Answers were approximately one page long.

Discussion on the themes of the surveys was expanded in the focus groups (see e.g. Liamputtong, 2011). There were three groups, which each met twice. The invitation was an open one and was sent by e-mail. Groups met in 2011, weeks 43 and 47. Meetings were approximately four hours long. The content of these six meetings were written down as memos, 4-6 pages long, by a secretary and were approved by the participants. The memos are named 1.1-1.3 (week 43) and 2.1-2.3 (week 47). A total of 25 people participated in the groups. The people attending the groups were sent an invitation in advance, which included the agenda and a list of topics to be covered. The first meeting dealt with outlining cultural sustainability in the context of education and related educational values, goals and skills. The second meeting was concerned with culturally sustainable practices, pedagogics and educational needs in the field of education.

The research data was analysed via the method of qualitative data-oriented content analysis to find conceptions which defined CS in education. The units of the analysis were not predefined and theory was generated from within the research material. A typical challenge with data-oriented content analysis that observations are saturated with theory was avoided by proceeding with a systematic and data-oriented approach without comparison to theoretical frameworks. Recurring expressions that describe definitions of education promoting culturally sustainable development were sought after
in the data. Expressions that were found were grouped into groups of similar expressions, and these groups were then formed into themes (Tuomi & Sarajärvi, 2009).

Because of fluctuation in the expressions and terms used, the starting point of the analysis was not the maximum recurrence of conceptions in the data. Instead, recurrence of content was looked for, and themes that connected these contents into clusters were created. For example, a subtheme “locality” consists of concepts such as the local environment, local heritage, and local museums. So that the subthemes would describe the participants’ connotations as accurate as possible, a description of each subtheme was attached in the results of the study (Figure 1). This was also necessary because the participants did not hold definitions of for example culture, cultural heritage or tradition in common. This study is not therefore bound by any predefined conception of these terms. To take into account the terminological challenges in the analysis, a description of the subthemes’ contents has been included with the subthemes. This is to help the reader take note of the complexity of the connotations embedded within a subtheme and also to add reliability. Descriptions of the subthemes paint a more detailed picture of how the subtheme is formulated. The descriptions also help in recognizing the education-related contents of each subtheme.

If an expression only appeared once in the data, this was not considered to be an obstacle for it being incorporated into the analysis. An expression was included in the results if, for example, it had a synonym connection with other expressions or it added information. The expression “international cooperation”, for instance, was only mentioned once but because as a term it connects closely to internationality and global education, which were mentioned more often, it was added in the description of the “internationality” theme. This was justified by the fact that “international cooperation” is an explanatory expression used widely in the field of education and is therefore easily approached and understood. The term “sound environments” only mentioned once, brought new information, and was thus included in the description of the subtheme “cultural environment”, but not as its own subtheme. The choice to include expressions mentioned only once is based on the tradition of qualitative research and the starting point of the study was to generate new information through experts (Tuomi & Sarajärvi, 2009).

**Concepts Defining Culturally Sustainable Education**

Conceptions defining CS in education were searched for in the surveys and memorandums of focus group meetings. The conceptions were twofold in defining CS. On one hand, the conceptions dealt with the change in school culture towards sustainability (“culture as”), and on the other hand, they were about the intrinsic values of culture (“culture in”). This data analysis focuses on conceptions of CS according to the “culture in” approach, that is to say, on themes which can be seen as representing the view of culture as one of the four pillars of sustainability or, on the other hand, the intrinsic value of culture-related specifics. The deductive analysis presented in the end takes the “culture as” approach into account.

To achieve an overall picture of culturally sustainable education, contents coherent with the “culture in” approach have been looked for in the experts’ conceptions in this study. Thus, the earlier study (Laine, 2013a) of the “culture as” approach is supplemented by an attention to the role of culture as a separate, independent part of sustainable development. Grouping and describing the contents offers a more specific view of, for example,
the content of instruction in culturally sustainable education, and therefore helps the organizers of education such as schools, municipalities and the governmental level take sustainability into account in a more comprehensive way. Eight subthemes, introduced along with their descriptions in Figure 1, were found from the research data: creativity, cultural customs, cultural heritage and awareness of history, cultural landscapes, interaction between generations, internationality, and locality as well as multiculturalism and diversity.

<table>
<thead>
<tr>
<th>Example from the original expression (source in brackets, translation by author)</th>
<th>Subtheme and the description of the subtheme</th>
<th>Themes</th>
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</table>
| “Culturally sustainable education appreciates individual creativity, insight and differences.” (Memo 1.3) | CREATIVITY:  
- different forms of art, such as architecture, music, design, handicrafts, literature and language  
- creativity in day-to-day life (e.g. dressing)  
- memory organizations preserving creative content such as libraries  
- the right to participate in culture and visit culture organizations | LOCAL CULTURE: Local environment and culture as well as local traditions  
GLOBAL CULTURE: National culture and cultural heritage  
NATIONAL CULTURE: Local environment and culture as well as local traditions |
| “A person acting according to cultural sustainability masters cultural customs and knows how to get along with people who represent different cultures.” (Memo 1.3) | CULTURAL CUSTOMS:  
- knowledge of customs  
- school festivities  
- celebrations (e.g. Kalevala Day) | LOCAL CULTURE: Local environment and culture as well as local traditions  
GLOBAL CULTURE: National culture and cultural heritage  
NATIONAL CULTURE: Local environment and culture as well as local traditions |
| “Appreciation of one’s own culture and heritage, cherishing and maintaining them. This doesn’t need to mean becoming stuck in the past, but learning from it: adapting one’s heritage to modern life.” (Survey I) | CULTURAL HERITAGE AND AWARENESS OF HISTORY  
- preservation and transmission of cultural heritage and traditions  
- sense of time perspective and awareness of history  
- adapting and transforming one’s cultural heritage (e.g. food and celebrations culture, built heritage, profession cultures, spoken tradition, religion heritage)  
- storage of heritage, heritage organizations such as museums and art institutions  
- plant heritage | LOCAL CULTURE: Local environment and culture as well as local traditions  
GLOBAL CULTURE: National culture and cultural heritage  
NATIONAL CULTURE: Local environment and culture as well as local traditions |
| “Cultural landscapes and natural heritage are very suitable viewpoints for pre and basic education, also for day-to-day sustainable functions in early childhood education as part of environmental education.” (Survey II) | CULTURAL LANDSCAPES:  
- architecture  
- contextual architecture and development works  
- developing infrastructure anthropocentrically  
- history appearing in the environment  
- natural heritage  
- landscapes  
- ecosystem services  
- the sound environment  
- plants and gardens  
- living off nature: picking berries and mushrooms, hunting, working with natural materials | LOCAL CULTURE: Local environment and culture as well as local traditions  
GLOBAL CULTURE: National culture and cultural heritage  
NATIONAL CULTURE: Local environment and culture as well as local traditions |

**Figure 1.** Examples of original expressions, subthemes with their descriptions and themes derived from the data

*Sequel to Figure 1 see on the next page.*
### Sequel to Figure 1. Examples of original expressions, subthemes with their descriptions and themes derived from the data

The example of an original expression found under the subtheme “cultural customs” (see Figure 1) describes the nature of the research data and the steps of the analysis well. The expression describes the contents of two subthemes (“multiculturality” and “cultural customs”) and shows the overlapping nature of the themes. Cultural customs is part of multiculturality but cultural customs are not necessarily multicultural. So, the data reflects respecting and transmitting local and national culture and at the same time the data reflects the multiculturality approach. No preference for either of the two approaches is, however, present in the research data. Neither was there any explicit expression of national or local culture not being viewed as diverse in itself – a need, for example, to define Finnish cultural heritage as consisting of particular, invariable content was not found in the data. The lack of expressions, however, does not exclude the existence of such thinking as an implicit supposition.

In addition to the subthemes, three main themes can be distinguished from the research data: local culture, national culture, and global culture. As the previous example of the subtheme “cultural customs” indicates, the main themes have not been generated based on the contents of one or a few subthemes, but instead reflect the contents of the whole data. It should be noted, that the themes are not used to outline culture as either local, national or global. Culture crosses boundaries and is ever-changing. The themes

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</table>
| “Culturally sustainable development takes different generations into account.” (Memo 1.3) | INTERACTION BETWEEN GENERATIONS:  
  - learning from and appreciating one’s family  
  - transmission of knowledge and skills  
  - dealing with issues from the past (difficult heritage)  
  - bringing together different generations and times | LOCAL CULTURE: Local environment and culture as well as local traditions  
GLOBAL CULTURE: Internationality and multiculturalism |
| “From the standpoint of sustainable development, one should see examples from different cultures alongside with ones identity and surroundings so that development could be globally sustainable.” (Memo 1.2) | INTERNATIONALITY:  
  - global education  
  - international collaboration  
  - the world as a learning environment |  |
| “Co-operation with the surrounding community and local actors provides a working ground for cultural education.” (Survey II) | LOCALITY:  
  - working with local culture (e.g. local museums)  
  - close by nature  
  - local heritage |  |
| “Multiculturalism and growing to be part of it is culturally sustainable.” (Survey II) | MULTICULTURALISM AND DIVERSTY  
  - cultures, traditions, different cultural heritages, religions  
  - consideration of pupils with immigrant backgrounds  
  - dialogue between cultures |  |
are used to explicate the educational approach evident in the research data: education should take into account the expression of culture on a local, national and global level. In addition to this, it is important to acknowledge the previous or still ongoing critical discourse on many of the terms being used, and that the participants are not committed to using just one definition of any of the terms. The term “multiculturality”, for instance, has been criticized for not reflecting the diversity on the micro-level and that using the term even falsely creates many cultures (e.g. Saukkonen, 2013). I now continue the analysis and interpretation of the results by using Soini and Birkeland’s theory of story lines of cultural sustainability and Barth’s theory of micro-, median- and macro-levels of culture.

**Culturally Sustainable Education and the Scientific/Political Discourse on Cultural Sustainability**

In this section, the way in which descriptions of culturally sustainable education relate to the scientific discourse on CS is explored. This is done by using Soini and Birkeland’s theory of story lines of cultural sustainability. It is important to see whether the results of this study resonate with the broader scientific discourse — to see whether this study adds to the scientific discourse and to see what kind of themes that are missing from the research data of this study can be found in the scientific discourse.

Soini and Birkeland have organized the scientific discourse on CS around seven story lines that are partly interlinked and overlapping but differ in terms of how the contextualized aspects are grouped. From these story lines they created a summary of the political contexts of CS (Soini & Birkeland, 2014). It should be noted, however, that the results of Soini and Birkeland’s discourse analysis are tied to political discourse and its established concepts and not to scientific theories, so the definition of CS and terms connected to it are disconnected from their original context in the articles they examined, nor are they analysed on a meta-level. This does not diminish the usability of the results of Soini and Birkeland’s analysis, although it is important to continue the analysis of their data by comparing the results with scientific theories so that the definition of CS can be examined on levels other than normative discussion and the terms used in it. Moreover, discussion on education and its goals should also take into account the underlying pedagogical decisions. These themes will be discussed later in this article.

Cultural heritage and the use of heritage and culture are common themes in the scholarly discourse on CS. Soini and Birkeland’s analysis of the cultural heritage story line describes cultural heritage (tangible and intangible) as a stock of cultural capital that has been inherited from previous generations and can be transmitted to future generations. The use of cultural heritage and cultural services form the base of the cultural vitality story line. This second story line is concerned with how cultural services, events and heritage meet the changing needs of their users and how cultural heritage is made accessible in a sustainable way. This story line sees cultural change driven by globalization and technology as mainly positive, but at the same time it raises the question how the change can take place without damaging cultural continuity or identity or cultural capital (Soini & Birkeland, 2014). These two story lines represent the conservative context of the political aspects of CS. The conservative political context is also present in the research data of this study: cultural heritage and cultural vitality are both seen as part of culturally sustainable education (see Figure 1). The conservative political context
also represents the pillar model of sustainability, the “culture in” approach to sustainability.

The third story line, economic viability, adopts heritage as a resource for economic vitality and emphasizes a dynamic approach to culture and the reproduction of culture. This story line represents the neoliberal context of the political aspects of CS (Soini & Birkeland, 2014). Although the data of this study does not explicitly mention culture from the viewpoint of economic viability, the themes of the conservation of cultural vitality by applying traditions to modern day, maintaining different skill sets, development, and media visibility are present. In addition, the significance of architecture, land use and construction are well presented. These mentions can be seen as having links with the story line of economic viability, although economic viability in itself does not come up as a theme in defining culturally sustainable education.

The cultural diversity story line refers to the recognition of the diversity of values, perceptions, attitudes and material cultural manifestations. The story line, however, presents an instrumental conception of culture. Cultural acceptance is seen as important in promoting the implementation of development schemes designed to reach environmental goals or to improve the quality of life of local people. The fifth story line, locality, is linked to cultural diversity as it emphasizes the perceptions and cultural rights of ethnic minorities, indigenous people and other marginalized people whose capabilities to participate in or defend their rights are threatened. This story line prefers locally based development to global development. New livelihoods and activities are often seen as a threat. Involvement of locals in planning and decision-making, as well as a deeper understanding of local cultural practices, is emphasized. These two story lines represent the communitarian context of the political aspects of CS, but are partly contradictory in their approach to globalization. The cultural diversity story line represents a globalization approach whereas the locality story line is anti-globalist. All in all, with the exception of the economic viability story line, the majority of the story lines see CS as threatened by globalization (Soini & Birkeland, 2014). This rejecting attitude towards globalization is partly present in the research data of this study, but does not play a central role. The data of this research seems to be more in line with the Finnish National Core Curriculum, which instructs students to operate in a global world and encourages international interaction as well as consideration of the local environment (NBE, 2014). The themes these two story lines represent are present in the research data of this study but contrast with the viewpoint of Soini and Birkeland’s study on scientific discourse, where culture was seen as having an instrumental value. Whereas these story lines view culture as a means to an end (sustainability e.g. culture having an instrumental value as an instrument to achieving sustainable future), the research data of this study consists of two separate perspectives with respect to the themes of these two story lines: the first representing the instrumental “culture as” approach as introduced in the author’s previous research and the second representing the “culture in” approach as introduced in the analysis of this article (culture having an independent role in sustainability).

The two remaining story lines, eco-cultural resilience and eco-cultural civilization, represent the environmental context of the political aspects of CS (Soini & Birkeland, 2014). Eco-cultural resilience seeks a balance between humans and nature. Nature conservation therefore cannot be carried out without taking local livelihood development into consideration. Eco-cultural civilization on the other hand refers to an ecological turn in the values and behaviour of people (Soini & Birkeland, 2014). These narratives, along
with the three previously mentioned narratives, are linked to the instrumental values of culture and cultural change as presented in the “culture as” perspective of CS. Because the “culture as” approach is present in the data of this research (for the need for cultural change towards sustainability, see also Laine, 2013a), it is therefore inevitable to combine both perspectives, the “culture as” approach and the “culture in” approach, in the final description of culturally sustainable education.

To summarize: the data of this study matches Soini and Birkeland’s conservative, communitarian and environmental aspects on CS. It remains open whether the definition of education which promotes CS should in this regard be broadened with a stronger neoliberal approach. In addition, the data of this study differs from Soini and Birkeland’s analysis from the viewpoint of cultural diversity and locality: the rejection of globalization and culture’s instrumental value do not play a similar prominent role. There is also a call for culture’s intrinsic value emerging from the data of this research as presented in the previous chapter when comparing it to Soini and Birkeland’s analysis. Next the possibility of supplementing Soini and Birkeland’s analysis from the perspective of the educational sciences will be discussed so that a definition of culturally sustainable education would be coherent with not only the data of this study and the current discussion concerning cultural sustainability (e.g. Soini and Birkeland’s analysis of the scientific discourse) but supplemented with pedagogical aspects from the viewpoint of the Finnish educational system.

**Pedagogical Perspectives on Culturally Sustainable Education**

It is important to broaden the examination of CS education beyond normative conceptions and the political context and examine its definition in connection with pedagogical discourses, so that the definition of culturally sustainable education would be coherent with the current discussion on education practice and policies. Therefore in this section the definition of culturally sustainable education in relation to pedagogics will be examined, utilizing anthropologist Fredrik Barth’s (1928-2016) theory of the micro-, median- and macro-levels of culture. The way in which Finnish educational politics, the national core curriculum of basic education and the organization of education and educational practices take into account CS and thus participate in its definition will also be discussed. Through these approaches, a pedagogical level of CS is presented and a definition of culturally sustainable education is reached.

Even though Barth’s model of analysis, which is used in understanding the relations between power, organizational activity and everyday human life, has been created to study ethnicity, the model has been broadly applied in the study of culture (e.g. Siivonen, 2008). In this study, Barth’s theory is used in formulating the visibility and operations of CS on different levels. The micro-level represents the level of individual people, the median-level represents the level of local organization and institutions, and the macro-level represents the level of states, international organizations and institutions. Everyday life happens on the micro-level, in interaction with one’s own environment and the level of symbols, with variation accounted for. Culture on the micro-level is therefore not unified. On the median-level, simplified images of culture are generated. This enables simplifications to be used in the promotion of culture. On the macro-level the conditions for operation, and the possibility of micro- and median level operations, are created. On the macro-level power over the micro- and median-levels are exercised. The median-
level also includes the exercise of power in relation to the micro-level (Barth, 1994; Siivonen, 2008). The exercise of power on the macro- and median-levels does not, however, imply that the relations between different levels are only one-way. In education the requirements of the micro-level guide the decisions on the macro-level and the operations on the median-level. The curriculum, for example, is modified and legislation reformed on the basis of encounters on the micro-level and the requirements arising from them. Also, the organizations and institutions operating on the median-level aim at meeting the requirements of the micro-level. The manifestation of the different levels in culturally sustainable education is described in Figure 1.

Barth’s view of the encounters on the micro-level is especially interesting from the viewpoint of educational sciences, for it adds a level where CS is alive and develops in everyday situations and encounters into a discussion of CS alongside of the normative definition. On the level of schools this means turning attention to pupil-pupil, pupil-teacher and teacher-teacher encounters. From Barth’s model it can be noticed that CS is defined on the macro- and median-levels, but definitions arising in the micro-level contacts have not yet been studied in education. Topics broadly discussed in educational sciences, such as identity processes (e.g. Benjamin, 2014), pupil encounters (e.g. Talvio, 2014) and other pedagogic decisions, such as the critical pedagogy view of the pupil as an active, world-reforming actor (e.g. Apple, Au & Gandin, 2009) can, on the other hand, be seen as studies of micro-level encounters.

The levels of manifestation of CS on the macro- and median-level, visible in Figure 1, include the perspectives of educational politics, educational administration and organizing education. These viewpoints are utilized in showing what kinds of CS themes have been given specific attention in developing and guiding education. On the macro-level, sustainable development education is mentioned in several normative documents guiding education. The Finnish Government along with the Ministry of Education and Culture are responsible for the planning and execution of educational politics. The Finnish National Board of Education is a department for developing education, which, among other things, decides on the curriculum (NBE).

The memorandum on the reform of Finnish basic education by the Ministry of Education and Culture in Finland states that the future skill requirements are, among other things, understanding the challenges of sustainable development and taking care of the future. From the perspective of the “culture in” approach, the following skill requirements are mentioned: understanding different customs, languages and cultures in a globalizing world, readiness regarding creativity, skills related to self-expression, hand and body skills and being conscious of one’s own identity. The Ministry memorandum pays particular attention to multiculturality – it notes that the increase in the diversity of languages, cultures and religions requires that schoolwork should be supportive of both the construction of a pupil’s own cultural identity and his/her participation in Finnish society and a globalizing world. Several statements and expert resolutions in the Ministry memorandum also highlight the increasing importance of cultural and life stance education in the future (MEC, 2010). A presentation on the goals and distribution of lesson hours in basic education, which followed the 2012 memorandum, mention the promotion of sustainable development as a goal of basic education. Socio-cultural sustainability is mentioned, although the confirmed national core curriculum (2014) mentions CS in its own right (MEC, 2012).
In the national core curriculum of basic education 2014, a sustainable way of living is viewed as a necessity. A sustainable future and way of living is shown as a cross-sectional theme in the document. CS is specified as one of the dimensions of a sustainable way of living, and is mentioned in the value base of basic education and the transversal competence goals (NBE, 2014). The “culture in sustainability” approach is present in, for example, the cultural objective of basic education, which defines the objective of basic education as promoting diverse cultural competence and appreciation of one’s cultural heritage, and as supporting pupils in the construction of their own cultural identity and cultural capital. The transversal competence goals mention the construction of one’s cultural identity, too, and cultural competence is selected as one of the seven competence goals. School culture is described as utilizing and appreciating the nation’s cultural heritage and national languages, and one’s own and the surrounding cultural, linguistic, religious and life stance diversity. In the discussion on cultural diversity, the right to one’s own language and culture is noted as being a fundamental right (NBE, 2014). The CS and the “culture in sustainability” perspective are also visible in subjects and the general goals of school grades (for a more specific analysis, see Laine, 2016).

In light of what has been said above, the themes of CS from the viewpoint of educational politics are connected to the learning goals and rights of the individual arising from the societal situation (e.g. globalization, multiculturality) and values (sustainable ways of living, appreciation of cultural diversity and traditions), and to the societal level as enabling the actualization of rights and the achievement of learning goals. The contents do not contradict the previously introduced results or the scientific-political discourse, but it is noteworthy that the themes of cultural identity, cultural competence and cultural rights particularly stand out. Educational politics is therefore utilized in bringing the individual’s learning requirements, in relation to both personal and societal requirements, into the discussion on CS, so that an attempt is made at meeting the requirements of the micro-level encounters.

Organizing education to promote a sustainable way of living has in Finland been supported by both organizations and the Government (Kestävän kehityksen toimikunnan koulutusjaosto, 2006; ME 2006; see also: Pathan et al., 2012). On the median-level, in 2007 the National Board of Education published a manual on promoting sustainable development in educational institutions. In the manual, the “culture in” approach is visible in taking into account cultural identity, cultural heritage, multiculturality and local culture (Loukola, 2007). Organizations have also provided concrete tools for promoting culturally sustainable development in education. The OKKA Foundation, which aims at developing education, is in charge of the certification of sustainable development in educational institutions and one of its themes is CS (see www.koulujaymparisto.fi). The Association of Cultural Heritage Education in Finland has published a website, www.kulttuurinvuosikello.fi, promoting culturally sustainable education. The Helsinki Metropolitan Area Reuse Centre has, as part of the 4V project, produced sustainability guides including CS to day care centres, schools and playgrounds (see www.4v.fi). On the median-level, activity that furthers culturally sustainable education includes the culture education provided by municipalities and schools and specifically all activity that is based on the cultural education plans and reaches all pupils equally (see www.kulttuurikasvatussuunnitelma.fi).
### The Definition of Culturally Sustainable Education

In order that, for example, programmes, certificates, websites and publications aimed at promoting sustainability education – and used by both the teachers and the pupils – cover sustainability from a broad perspective (including cultural sustainability) a definition of culturally sustainable education must be generated. To meet the curriculum requirements for culturally sustainable education, education should take into account, for instance, the diversification of society and the pupil’s individual cultural identity. Education is, however, linked to the information at hand and to existing practices and services. In the research data of this study, the strengthening of one’s own identity and one’s own roots was considered a central development target in educational practices, along with appreciating, treasuring, upholding and maintaining one’s own culture and traditions, while applying them to the present time (e.g. memorandum 2.3). On a societal level, the UN Declaration of Human Rights and the right to one’s own language and culture were mentioned. The societal changes and the significance of an individual’s cultural identity highlighted by educational politics and the educational administration are in line with expressions in the research data concerning the support of the individual’s identity process and societal diversification, which are clearly shown in the subthemes as well. The analysis of the definition of culturally sustainable development therefore

![Figure 2](image-url)
expands the significance of the “culture in” aspect, especially from the perspective of the individual’s development and micro-level encounters. Micro-level encounters raise such questions “Do I enable cultural changes?” or “Whose creativity is accepted and valued?” and “Do I accept critical interpretations of culture?” (see more specifically Laine, 2013a).

By combining the environmental approach that takes into consideration the instrumental value of culture (cultural change) and the CS approach that is in accordance with the pillar model that recognizes the intrinsic value of culture, a definition of culturally sustainable education is arrived at. This definition also resonates with the scientific discourse on CS and with earlier definitions of education that promote CS (Laine, 2013a). To take into consideration pedagogical viewpoints, a definition of culturally sustainable education must also acknowledge the significance of culture in the learner’s identity process. In supporting the identity process, cultural rights and their identification and acknowledgement hold a central role. It is important to note that neither the research data nor the national core curriculum mention cultural identity or cultural heritage as being tied to one specific nationality or, for instance, ethnic background, but is seen as a right of all people.

Taking into consideration the results of the analysis of the research data presented, the comparison of results with the scientific and political discourse presented and the pedagogical factors, the results of the analysis can be summarized thus:

Culturally sustainable education
  • is made possible and developed through micro-, median- and macro-level contacts
  • takes into account culture on the local, national and global levels
  • includes creativity, cultural customs, cultural heritage and an awareness of history, cultural landscapes, interaction between generations, internationality, locality as well as multiculturalism and diversity in education
  • supports the identity process of the pupil
  • protects and enables the realization of cultural rights
  • utilizes the instrumental value of culture and recognizes the value of culture in the cultural change toward sustainability.

This study shows that expert conceptions of culturally sustainable education do not conflict with scientific or pedagogical discourse. This in itself shows the generalizability of the results of this study. It is also interesting to note that the experts’ conceptions did not include the neoliberal dimension, as in the notion that culture is an economic asset (for the commercial use of culture and benefits from tourism and travel, see Siivonen, 2009, and for sustainable design, see Ruokonen, Sepp, Moilanen, Autio & Ruismäki, 2014). It would be possible to apply the commercial aspects of culture in schools with entrepreneurship education and practical subjects. Additionally, there was no specific interest present in the research data to categorize certain contents as preserving and transmitting Finnish culture. This resonates with the idea that is present in the research data, namely that culture is multi-faceted and changing but it is also a local phenomenon. Even though the results do not conflict with scientific and pedagogic discourse, they do show that the educational viewpoint introduces a new dimension into the discussion on CS. It specifically broadens the “culture in” definition from the perspectives of supporting the pupil’s identity processes and micro-level encounters. From a theoretical point of view, the study therefore adds depth to the examination of CS. At the same time, the
results of this study should be exposed to critical review of what the terms used in defining culturally sustainable education, as in multiculturality and communality, mean from the perspectives of the pupil’s identity process, welfare and positive societal development (e.g. for indigenous perspectives, see Chandra, 2014).

Conclusions

The objective of the study, to find a definition for culturally sustainable education, was answered by creating a synthesis of experts’ conceptions, earlier research, scientific discourse and pedagogic viewpoints. Through this study, the expectations for education from the viewpoint of CS can be defined more explicitly and in an approachable way. Moreover, Soini and Birkeland’s theory of story lines regarding CS is supplemented to take into account micro-level encounters and pedagogics and on the other hand Soini and Birkeland’s theory shows that the data from this study could be supplemented with an approach that also considers the commercial possibilities of culture.

Pursuing a sustainable way of living is about broadening the whole educational system’s way of thinking, about a new school culture. Without acknowledging the cultural perspective, the pursuit of sustainability fails. Culturally sustainable education considers culture in a broad and diverse way. Thus, an educational institution cannot achieve a good level of CS by taking into consideration only one aspect of CS and disregarding others. Nor can a school achieve a good level of sustainability by only acknowledging one aspect of sustainability. Defining cultural sustainability is pivotal so that education can reach a future-orientated vision of CS that supports the wellbeing of the pupil and society.

References


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Envisioning Complexity: Towards a New Conceptualization of Educational Research for Sustainability

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Abstract

This paper aims to present some conceptual insights into the research paradigm of complexity that deals with such problems like sustainability, education, and, more specifically – sustainability education. The transdisciplinary perspective and cognitive approaches of a hermeneutical cycle and semantic waves used in argumentation assist in grasping the essence of complexity and the main principles of complex dynamic systems. The comparison of simple, complicated and complex systems in a field of sustainability education provides an example of using complexity thinking with social systems. Then the complexity in an epistemological context, as the research paradigm, could be used for dealing with the challenging problems of sustainability, education and sustainability education from the point of view of post-normal science. The concept of transdisciplinarity has been developed as a research framework starting from the general approaches to its application for sustainability, education and sustainability education. The specific types of collaboration in educational research for sustainability and the modes of knowledge produced by transdisciplinary research in this field will be described, ending with reflections and suggestions for further analysis.

Keywords: complexity, sustainability, educational research, sustainability education, transdisciplinarity.

Introduction

The recently emerged idea of viewing sustainability and related issues within the discourse of complexity has been examined in different contexts and appears to be the promising course of action in terms of transforming the research in these fields (Cameron & Swilling, 2014; Espinosa & Walker, 2011; Guillaume, 2014; Harris, 2007; Norberg & Cumming, 2008; Swilling & Annecke, 2011; Tainter, 2006; Valentinov, 2014; Wells, 2013, etc.). The author’s analysis aims to stimulate feedback and creative collective reflections on this new approach to inquiry that is ultimately oriented toward more sustainable existence, relationships and meaning making. This paper proffers some conceptual insights into the research paradigm of complexity to deal with such life-world problems like sustainability, education, and, more specifically – sustainability education.
At the outset it is worth reminding one that every theory, in order to be useful, relevant and entitled for further development, should be grounded on properly defined concepts that are described both using flexible approaches and attitudes of comprehensiveness and penetration (Knight, 2008). Especially, the research on sustainability, since its inception, has already been criticized for the lack of conceptual clarity and precision. Education per se and sustainability education have been recognized for having several biases and ambiguous research objects as well as an incapacity to deal with the most intractable problems of public education (see more in Fleener, 2016; Pipere, Veisson, & Salóte, 2015). On the one hand, this can be interpreted as assuming that sustainability and related problems can be grasped and dealt with only using the complexity paradigm that asks for more intricate and comprehensive views and is not easily simplified and described (Wells, 2013). By trying to explain and model complex phenomena in a uniform and exact way, we loose their complex nature. On the other hand, these efforts could have failed because during the previous decades scholars from different disciplines and contexts frequently attempted to define the concepts according to their compartmental understanding and approach, that, in the majority, was based on classical positivist/post-positivist paradigm and expressed via normative, standardized, “top-down” or even purely ideological discourse. These rarely looked for joint research, common and unified knowledge or collaborative implementation of the results with the practitioners in the field.

This paper is conceived as an attempt at conceptual analysis, allowing for more flexibility and less rigour than theoretical analysis while involving speculations about connections that have to be elaborated and confirmed in empirical studies. The relations between certain concepts and the necessary and sufficient conditions of the application of given concepts will be demonstrated in brief (Bunnin & Yu, 2004). The structure of the paper bears the features of a spiral approach to knowledge (Bruner, 1960) and qualities of the hermeneutical circle (Mantzavinos, 2016), while the content-related aspects will be elaborated from the transdisciplinary perspective integrating the discourses from the philosophy of science, educational sciences, psychology, sustainability science, etc.

In respect to Sartori’s classic rules of concept formation and his so-called ladder of abstraction (Sartori, 1984), the low, medium and high levels of abstraction are related to the range of covered cases – the more abstract the concept is, the wider the range of cases. In this paper the sustainability and related issues are conceived from the highest degree of abstraction that allows one to have ‘a bird’s-eye view’ and coverage of wide range of cases, situations and contexts. Also, some semantic waves (Maton, 2014) will be employed as to strengthen and weaken context dependence and to concentrate on the meaning as it is more natural for the scientific discourse of social sciences and education to bring forth specific examples from real life. Concept of complexity allows us to climb up and reach the higher level of abstraction than the narrow concepts used in different academic disciplines to explain sustainability, education and sustainable education. In this paper the conceptual analysis will be applied not only to the content of these issues, but also to the research paradigm that is used in exploration of these matters.

In order to improve the comprehension of sustainability as well as to understand and conquer unsustainability, both natural and social sciences as well as humanities need to detail not only the novel world outlook and interpretation of the world, but also the brand-new approaches to the solution of local and global issues. The comprehension of these issues within a scope of the old paradigms apparently was not consistent
with the multidimensional and transdisciplinary nature of these issues. This situation imminently leads to some ethical dilemma, which is especially relevant in contemporary social and educational sciences. What would be more important for the humanity: 1) to strive toward logically grounded, explicit, objective, namely, “scientific” view of the world, that reflects important relationships between the single elements of individual and systems of social milieu in any specific scientific discipline, so as to vindicate the traditional particularity of science as some elitist field or 2) to emphasize the utilitarian (not egoistic) or instrumental aspect of science, focusing on urgent individual and social issues and aiming for creative involvement of all possible resources (both in terms of scientific and other forms of comprehending the world) as to reduce the present and potential issues of individual, society and the Earth (Pipere, 2016)? This paper aims to review and discuss some theoretical ideas that essentially could help researchers in dealing with such dilemmas now and in the future.

The main part of the paper consists of two chapters aiming to define the complexity and suggesting the application of its’ principles to the research of intertwined problems. The both chapters are significant for the presentation since the audience of educational researchers and practitioners might still have rather fragmented perspective on the phenomena of complexity introduced in scientific discourse only for the last two decades (Heilighen, 2008). So, as to provide the outlook of complexity based research paradigm regarding sustainability, education and sustainability education, the author will start with the definitions of complexity and the main principles of complex dynamic systems. Than, the deeper implications of complexity for the research in a field of sustainability, education and sustainability education will be provided based on the concepts of post-normal science, wicked problems, transdisciplinarity, etc. The paper will end with some reflections, conclusions and suggestions for the further analysis.

**Complexity and Main Principles of Complex Dynamic Systems**

Let’s start with the challenge of complexity definition, followed by sets of selected complexity principles and illustration of difference between simple, complicated and complex systems. To make this discourse more relevant to sustainability and education as the main areas of interest for the journal audience, the examples of complexity principles and systems will be borrowed both from the general field of education and sustainability education.

**Comprehending Complexity**

Currently the term of complexity has been interpreted very differently and used in growing number of studies related to various disciplines in both the US and Europe (Dann & Barclay, 2006). In a general way complexity usually has been defined using some principles of composition (structure) or existence (functioning) of complex systems. For instance, the science of complexity can be defined as a science exploring the phenomena emerging in a totality of interacting objects or as “the dynamic interactions of multiple elements engaged in self-organizing processes” (Wells, 2013, p. 35) Example of complexity is a crowd, as it is a phenomenon emerging in interacting body of human beings (Johnson, 2009). Other scientists (e.g., Gershenson, 2013) acknowledge that it is hard to separate the elements of complex system since they are interdepent and exist in
Envisioning Complexity: Towards a New Conceptualization of Educational Research...

respective interaction. Many scholars admit that the exact definition of complexity is impossible (Heilighen, 2008; Wells, 2013), it only can be placed in between the order and chaos. The theory of complexity has grown from and still builds on the systems theory and chaos theory, striving to demonstrate, why the whole is larger than the sum of its’ parts and how the components of the whole merge and interact in order to create higher level models through the systems’ learning, evolution and adaptation.

To date, the complexity vision has been promoted largely in a very piecemeal fashion, with each theorist mentioning a few of the core principles and focusing on one or two of the major frameworks within complex theories (Wells, 2013). In her book “Complexity and sustainability” Wells (2013) suggests a set of six complex dynamic systems principles: nonlinearity, feedback, networks, hierarchy, emergence and self-organization that could be found both in natural and social systems. Than she elaborates two sets of 50 principles each applicable for sustainability studies and explicitly related to sustainability. Before advancing with further analysis, we need to consider short definitions of the six foundational principles mentioned above, based on the suggestions from Wells (2013) and other authors:

1) **Nonlinearity** is a principle behind chaos theory designating the disproportionality between causes and effects and showing that small initial changes can lead to large outcomes.

2) **Feedback** can be explained as a process of circular causality by which the output of the system is fed back to the input.

3) **Networks** are dynamical systems consisting of nodes with links of interactions between them.

4) **Hierarchy** refers to the interrelated nested systems where each of the subsystems is subordinated to the system to which it belongs.

5) **Emergence** is “a process by which relatively simple rules lead to complex pattern formation” (Holland, 1998, p. 3).

6) **Self-organization** can be viewed as the central feature of life and “spontaneous emergence of global structure out of local interactions” (Heilighen, 2008, p. 6).

However, in assistance of researchers and practitioners in sustainability and related issues, a more extensive set of complex dynamic system features could be created using the principles proposed and defined by several authors (Checkland, 1991; Garnett, 1997; Johnson, 2009; Holman, 2010; Von Bertalanffy, 1968). Table 1 includes 10 qualities of complex systems with short descriptions and illustrations. In this table these qualities are related to socio-cultural systems and presented starting from the structure and components of the system, than moving to the behaviour and development of system and concluding with the context from which to approach the system. Two illustrative examples from the field of education in terms of class of pupils at school and system of teacher’s beliefs could serve as an introductory thinking exercise using semantic waves (transition from more abstract to more specific meaning) to prepare for more intricate relationships between complexity and sustainability issues. These two examples are obvious manifestations of two important aspects of education as social system (Fleener, 2016), namely, social interaction (class at school) and meaning making (teacher’s beliefs). Accordingly, in the example of class the individual pupils could be perceived as the elements or agents of the system, while in the system of teachers’ beliefs, individual beliefs can behave as elements or agents connected within a holistic system of teacher’s beliefs.
Table 1

*Main Principles of Complex Dynamic Systems*

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
<th>Example: class at school</th>
<th>Example: system of teacher’s beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holism</td>
<td>The system is an integrated whole and its’ features cannot be reduced to the sum of elements of this system.</td>
<td>Class as an integrated whole cannot be reduced to the simple sum of individual students and have some integral features appearing due to interaction of pupils on different levels.</td>
<td>System of beliefs is an integrated and unique wholeness, though consisting of numerous beliefs, feeding the practice of every individual teacher.</td>
</tr>
<tr>
<td>Hierarchy</td>
<td>Every system contains the set of many interacting, similar but at the same time independent agents/elements. These agents sustain the subsystems that can be merged into larger systems, therefore creating the hierarchy of systems (e.g., nested structure).</td>
<td>Hierarchy of pupils in class in terms of their academic performance, e.g., considering the number of disciplines with good/average/poor academic achievement.</td>
<td>The belief system can sustain the several sets of nested beliefs, starting from general philosophical beliefs related to the aims of education to the very specific beliefs, e.g., about proper non-verbal behavior communicating with pupils’ parents.</td>
</tr>
<tr>
<td>Rules</td>
<td>Each agent/element accepts the local common rules of the system.</td>
<td>Every pupil should accept the common rules of conduct set within the class.</td>
<td>All beliefs within the belief system are subjected to the same rules of occurrence, development, transformation, ageing and suspension.</td>
</tr>
<tr>
<td>Feedback</td>
<td>The behaviour of system’s agents/elements is determined by memory or feedback that can be both positive (increasing the benefits of the system) and negative (destroying the system) (e.g., non-linear behaviour of system).</td>
<td>The class provides feedback to external influence, e.g., in form of improved academic achievements responding to more appropriate teaching methods.</td>
<td>The teacher’s beliefs are tested in teaching practice and the further destiny of each belief depends from the feedback in form of students’ performance outcomes.</td>
</tr>
<tr>
<td>Adaptation</td>
<td>To survive, the agents/elements have to adapt their behaviour to the new situation according to their experience (history).</td>
<td>Pupils in class adapt their behaviour to the new curricular demands in line with their previous learning experience.</td>
<td>The novice teacher’s beliefs about the most effective teaching methods can be modified starting his/her teaching practice at school.</td>
</tr>
<tr>
<td>Openness</td>
<td>Usually such systems are open systems that behave like living organisms.</td>
<td>Class at school can be viewed as a living organism that learns, adapts to external influences and engage in evolutionary processes (e.g., stages of group dynamics).</td>
<td>The system of teacher’s beliefs is open to constant re-evaluation, changes and development, e.g., out-dated beliefs are replaced by new more adequate beliefs.</td>
</tr>
</tbody>
</table>

*Sequel to Table 1 see on the next page.*
In fact, both the definitions of principles and their examples should be viewed as ultimate simplification, since, as it was mentioned before, complex systems can not be grasped with strict, simple and unambiguous language and they are inherently multidimensional. Suggested examples should be viewed just as one from the numerous alternatives of possible interpretations in relation to the principles of complex dynamic system. The system of teacher’s beliefs as a complex system has been described also in several other papers (e.g., Šapkova, 2014; Zheng, 2015), while classrooms as complex adaptive systems already were elaborated mostly in language learning context (see Burns & Knox, 2011; Logan & Schumann, 2005; Newell, 2008; Young, 2016).

<table>
<thead>
<tr>
<th>Emergence</th>
<th>Higher-order complexity arising out of chaos in which novel, coherent structures coalesce through interactions among the diverse entities of a system. These phenomena usually appear naturally with no help from some “invisible hand” or central management.</th>
<th>Even in a class of very low ability pupils the high achievements in certain topics can emerge without any specific impact from teacher.</th>
<th>In a system of beliefs, new complex beliefs can emerge unexpectedly, integrating several simpler beliefs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-organization</td>
<td>The system demonstrates the intricated combination of orderly and chaotic behaviour.</td>
<td>The same class of pupils can show the orderly behaviour during the high stake examination and very chaotic behaviour during the break after the test.</td>
<td>Initially chaotic set of beliefs obtained during the teacher training can be restructured and shaped into more orderly structures and deliberate interrelationships with the gradual evolvement of teaching practice.</td>
</tr>
<tr>
<td>Complexification</td>
<td>The system shows the progress of complexity, e.g., with time the system becomes larger and more complex (increases the number of elements and interactions).</td>
<td>Learning together (e.g., from grade one to grade nine), pupils gradually establish growing number of interactions between their cognitive, affective and behavioural patterns.</td>
<td>Growing experience of teacher determines the growing limits of teacher’s belief system: the number of single beliefs and interactions between them.</td>
</tr>
<tr>
<td>Observer</td>
<td>The boundaries of system or, in other words, what are included in or excluded from the system, is determined by the observer.</td>
<td>Comparing class teacher, school principal and school inspector as the observers of class, each of them will see different elements and aspects to be included or excluded in the given class as a system.</td>
<td>From the point of view of pupils’ parents, the teacher’s system of beliefs should include the specific subsystem of beliefs regarding their offspring.</td>
</tr>
</tbody>
</table>
Simple, Complicated and Complex Systems

Many authors, describing complexity, stress the necessity to distinguish between complicated and complex systems. Though, trying to grasp the growing complexity of the systems, the nature of the systems can be better demonstrated ordering them on the range from simple to complex systems. Adapted from the original table by Glouberman and Zimmerman (2002) to the specific content in connection to sustainability and education, Table 2 shows three types of problems related to sustainability education that can be treated as simple, complicated and complex systems.

Table 2
Simple, Complicated and Complex Systems (adapted and modified from Glouberman & Zimmerman, 2002, p. 2)

<table>
<thead>
<tr>
<th>Simple problem</th>
<th>Complicated problem</th>
<th>Complex problem</th>
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<tbody>
<tr>
<td>Delivering a lesson using teaching tools and materials for ESD</td>
<td>Integrating sustainability into all academic programs of certain university</td>
<td>Educating youth oriented toward sustainability values</td>
</tr>
<tr>
<td>Strict following of the teaching materials is essential</td>
<td>Guidelines are critical and necessary</td>
<td>Guidelines and teaching materials have a limited application</td>
</tr>
<tr>
<td>Some activities from the teaching materials can be pre-tested in different learning situations</td>
<td>Successful introduction of sustainability in one academic program increases assurance that the introduction in other programmes also will be successful</td>
<td>Educating one person or even one class of pupils/group of students provides experience, but no assurance of success with the next</td>
</tr>
<tr>
<td>No particular expertise in ESD is needed, but pedagogical expertise of teacher increases success rate</td>
<td>High level of expertise in a variety of fields as well as the teamwork are necessary for success</td>
<td>Expertise (in sustainability and/or education) can contribute but is neither necessary nor sufficient to assure success</td>
</tr>
<tr>
<td>Application of same materials by same teacher in same class usually will determine similar learning outcomes</td>
<td>The structure of different universities and academic programmes in one specific university are similar in many ways</td>
<td>Every case is unique and must be understood as individual and extraordinary</td>
</tr>
<tr>
<td>The best approved activities from the teaching materials give good results most of the time</td>
<td>There is a high degree of certainty of outcome</td>
<td>Uncertainty of outcome remains</td>
</tr>
<tr>
<td>Optimistic approach to problem possible</td>
<td>Optimistic approach to problem possible</td>
<td>Optimistic approach to problem possible</td>
</tr>
</tbody>
</table>

As seen in Table 2, simple problems in a field of education like delivering lesson using ready-made ESD teaching materials can comprise significant issues of educational technology or terminology, but as soon as these issues are mastered, there is a large possibility, that following teaching materials will ensure success. The nature of complicated problems frequently is linked not only to the extent of the problem, but also to larger requirements regarding the expertise and coordination of different branches related to given issue. Since the study programmes in a framework of one university usually are more or less similar (at least in terms of structure and curricular approach), also in this
case we can be rather sure about the possibility to repeat the successful integration of sustainability principles in several programs. In contrast, complex systems are essentially based on relationships and, among others, such features of relationships as self-organisation, interaction and evolution. Complex systems cannot be grasped as simple or complicated systems, using evidence, politics, planning and management. Treating the issue of educating youth toward sustainability values as a complex system and analysing its peculiarities, one can conclude that the most useful solutions usually emerge in a dialogue, discussions, interaction and networking between all stakeholders involved in education, self-organization of hierarchical systems participating in value education, etc.

Besides, complexity is not an inherent material property or substance of some kind; rather it is relevant relative to systems, interactions, observers, and particular inquiries (Wells, 2013). Depending on the relationships of the observer to the system and the nature of the inquiry, what one see as simple in one moment, can be perceived as complex the next. Returning to the Table 1, putting the observer inside the all three problems/systems (in classroom, university, community/society), it appears that actually every mentioned problem can be also viewed as a complex problem, at least in a way that delivering any lesson implies learning that can be grasped as a complex problem, while introducing novel guiding principles in organization (i.e., university) is obviously related to certain networking, hierarchy and self-organization. Ultimately, in terms of complexity as a paradigm, it undergirds all endeavours connected with human being and society, besides, in these systems the complexity is more evident than in any physical or biological system.

It is interesting that, in accordance with Poli, the distinctive and extraordinary features of complex systems are related to their creative nature:

Being creative includes the capacity to change, learn, and over time become different from what one was before. But it is more than this. Everything changes, but not everything is creative. To mention but one component of creativity, the capacity to (either implicitly or explicitly) reframe is one of the defining features of creativity. Creativity also includes some capacity to see values and disvalues, and to accept and reject them. Therefore, it is also the source of hope and despair. None of these properties are possessed by complicated systems. (Poli, 2013, p. 145)

Complexity as a Research Paradigm for Wicked Problems

According to Wells (2013), complexity operates in physical, biological and social systems. In its turn, education is also a significant social system determining the vitality of any society (Fleener, 2016).

Presently the increasing number authors explore the links between complexity and education (e.g., Davis & Sumara, 2006, 2008; Doll, Fleener, Trueit, & Julien, 2006; Mason, 2008; Osberg & Biesta, 2010, etc.), however, the deep and systematical analysis of the whole array of complexity principles as well as the empirical verification of these principles in a broad field of education not to mention ESD is still ahead. The next part of the paper will focus on the complexity in epistemological context, as the research paradigm that could be used dealing with the demanding problems – issues in sustainability, education and sustainability education.
Complexity as a Research Paradigm for Sustainability

As it has already become clear, complexity is not just a phenomenon or a set of phenomena, not even a method, but rather an epistemological paradigm, an approach to inquiry and practice. Wells (2013) suggests using the term “complex thinking” that means applying the set of ideas, principles, models to investigate the properties of any systems. Sustainability and related issues represent the highly complex situation and subjects that ask for the conceptualization of new research paradigm. Such conceptualization might be possible introducing post-normal science (Riccucci, 2008). The term ‘post-normal’ science, introduced by Jerome Ravetz, designates the management of complex science-related issues focusing on previously neglected aspects like uncertainty, value loading and a plurality of legitimate perspectives. The phenomena of environment and society cannot be grasped or managed as simple systems, these phenomena will always present anomalies and surprises. Although the principles of post-normal science has been developed, redeveloped and even strongly criticized, the main assumptions still can be stated as 1) the scientific management of uncertainty and of quality, 2) the multiplicity of perspectives and commitments, and 3) the intellectual and social structures that reflect problem-solving activities (Funtowicz & Ravetz, 1993). Post-normal science is looking for the answers on questions “What-about?” and “What-if?” and deals with high risks, uncertainty and divergent values, situations where objectivity is not always achievable. Another very important feature of post-normal science, highly relevant to this paper, is a new method for creation of scientific knowledge – an extended peer community. In such community a dialogue is created among all stakeholders, regardless of their position or qualification (Riccucci, 2008).

Another concept, interrelated with sustainability, post-normal science and inquiry in complex systems, is the concept of wicked problems – challenging problems because of their complexity that usually do not yield to the simple solutions. Many authors have recognized that complexity is a tool to deal with such a wicked problem like sustainability. Authors like Wells (2013), Peterson (2014), Conklin, (2005), Valentinov (2014) summarize the description of wicked problems by the following four criteria: 1) no definitive formulation of the problem exists, 2) its solution is not true or false, but rather better or worse, 3) stakeholders have radically different frames of reference concerning the problem, 4) the underlying cause and effect relationships related to the problem are complex, systemic and either unknown or highly uncertain. Wicked problems are not solvable, just manageable (Peterson, 2014). If the wicked problems can be explicitly correlated with the features of complex problems (in Table 2 – complex problem of value orientation for youth), when in tame problems (e.g., algebraic equation with unknown values) traditional linear approach is enough (in Table 2 – simple problem of delivering lesson using teaching materials) – it has a clear problem statement, we know when the solution is reached, solution can be objectively evaluated as right or wrong, it belongs to the type of problems that can be dealt with in similar way, has solutions that can be easily tried and abandoned and has a limited set of alternative solutions. According to Conklin (2005), “it may be convenient to describe a problem as wicked or tame, but it’s not binary – most problems have degrees of wickedness” (p. 19). Therefore, the complicated problem of integrating sustainability into curricula of higher education although a seemingly tame problem is both technically difficult and may contain several wicked subproblems.
One of the significant features of post-normal science is transdisciplinarity. It refers to all that interweaves several disciplines, moves across them, is situated in between them or outside the limits of these disciplines to include physical, living, and social systems, with their infinite implications. Transdisciplinary study suggests the synergistic collaboration between two or more disciplines, as to create theoretical and methodological integrated innovations providing such solution to common problem that reaches far behind the specific approaches of involved disciplines. Representatives of each single discipline actually operate outside the boundaries of his/her field trying to grasp the addressed problem as a whole, instead of focusing on one peculiar aspect of the problem relevant to his/her discipline. Unlike interdisciplinarity and multidisciplinarity, transdisciplinarity requires that researchers from different fields cooperate in creating new science while studying issues common for these disciplines, engaging in common research projects and developing methodology permitting the reintegration of knowledge (Sommerville & Rapport, 2002). Speaking about the expertise of each member of the research team, the transdisciplinary approach is also possible if one researcher, having an expertise in several fields, explores the relevant problem, or if several researchers working together each have an expertise in several fields. Transdisciplinarity can be viewed both as the type of interdisciplinary research applying scientific and non-scientific sources or practices, and also, the novel form of learning and problem solving grounded on cooperation among different scientific disciplines and fields of social life so as to cope with different challenges of contemporary life (McGregor, 2004). Today it is already clear that transdisciplinary research has moved “beyond the bridging of divides within academia to engaging directly with the production and use of knowledge outside of the academy” (Toomey, Markusson, Adams, & Brockett, 2015, p.1). For instance, dealing with the issue of social inequality, interdisciplinary teams of researchers, possibly, would consider wisdom of local community and try to elaborate an integrated and innovative perspective, rising above the specific approaches and methodologies of each discipline (sociology, economics, psychology, etc.). Transdisciplinary research practices are responsible for real life needs and prioritize the problem at the focus of research over the specific concerns, theories or methods of disciplines (Leavy, 2011). Whereas transdisciplinarity is oriented toward the real life problems, it should not design its own terminology and specific methods but try to use a language shared by many disciplines and present the results in a form understandable by civil society (Brandt et al., 2013).

Methodologically, transdisciplinary research follows responsive or iterative methodologies and requires innovation, creativity, and flexibility and often employs participatory research design strategies (Leavy, 2011). While interdisciplinary research may unite data from two or more disciplines, usually employing one epistemological method such as quantitative modeling, in contrast, transdisciplinary research includes all of the necessary epistemologies and methodologies, spanning the physical, living and social realms, usually employing both quantitative data and qualitative theory (Wells, 2013). Transdisciplinary research is often action-oriented entailing linkages not only across disciplinary boundaries, but also between methods and practices (Lawrence & Despres, 2004). However, as the literature shows, contemporary science encounters many subjective and objective hindrances to the successful performance of such (Grey, 2008; Young, 2000). Since this paper does not allow for the more extensive description of transdisciplinary research in general, follow-up for the interested parties could be found in 15 propositions conceived by the editors of the “Handbook of Transdisciplinary Research”.
(Wiesmann et al., 2008) who describe the essence, scope and process of transdisciplinary research, suggest hints of how to deal with problems of this approach, and define resources needed to face the scientific, institutional and societal challenge.

R. Lawrence and C. Despres have linked transdisciplinarity and complexity invoking that transdisciplinarity relates to complexity in a strive to overcome the fragmentation of knowledge and such features as hybridity, non-linearity and reflexivity transcending the structures of academic disciplines (Lawrence & Despres, 2004). E. Morin advanced complexity as method through an exposition of complexity as transdisciplinary (see in Wells, 2013). Complexity is intertwined with the processes of emergence that are omnipresent in real life, so transdisciplinarity is the best approach to deal with such processes (Kline, 1995).

Over the last few decades transdisciplinarity has grown rapidly in several fields, such as medical and health research, environmental research, sustainability research, educational research, policy research and social research (Leavy, 2011). Complexity theories can be viewed as a holistic transdisciplinary framework and provide an integral view of sustainability issues, which may contribute to the comprehension and guidance for problem solutions in economics, science, technology, ethics, politics, and policy. Complexity for sustainability calls for an articulation of both disciplinary, interdisciplinary and transdisciplinary approaches. Transdisciplinarity is necessary to sustainability in assessing not just the scientific aspects of global change, but also the social aspects – politics, ethics, economics, and social theories (Wells, 2013). So to summarise, we can state that an integral view on the contemporary mission for science, institutions and community looking for the research paradigm for sustainability asks for post-normal science able to deal with a wicked problem of sustainability within a transdisciplinary framework of complexity paradigm.

Complexity as a Research Paradigm for Education

Coming back to the idea that complexity thinking should work with any system, we can not deny the potential of this paradigm in social sciences, humanities and education. In fact, the principle of self-organization, essential for complexity, is self-evident in these systems thus showing that applications of merely natural science methods to these fields that deal with wicked problems (e.g., poverty, equality, political instability, health care, transforming education, etc.) are destined for failure. Central qualities of the social systems like subjectivity and the ability for radical changes in ideas, attitudes, worldviews, behaviors ask for other relevant methods and research strategies.

Fleener (2016) has proposed the definition of educational research as a research asking “why”, “what” and “how” regarding the preparation of students as a next generation of thinkers and doers. Currently educational research is searching for the answers on these questions through the positivist, postpositivist and postmodernist paradigm envisaging the usage of qualitative, quantitative and mixed method research (Pipere, Veisson, & Salite, 2015). Such an approach illustrates the striving of researchers to accommodate both the need for complexity thinking and rising demand to inform the educational practice and policy in their effort toward normative aims. Paradoxically, it is complexity thinking that allows for different discourses to be used simultaneously in educational studies. The analysis of complexity paradigm and several complexity principles in relation to education and educational research is already presented by several authors
(see more in Davis & Sumara, 2006; Mason, 2008; Radford, 2006; Reigeluth, 2008, etc.). To focus just on a few aspects that can be important in a context of this paper, the author will cover the complexity of educational situations, the research paradigm, methods and forms as well as the aims of educational research and connection between the research and practice.

Educational researchers study nested, evolving and intertwining phenomena (Davis & Sumara, 2008) or, to put it simply, all principles of complex dynamic systems depicted in Table 1 should be considered in some way informing educational research from the perspective of complexity. All educational discourse containing human cultural frameworks, institutions and constructions can be seen as “consisting of multiple interconnecting elements, continuously evolving in an unpredictable environment that itself consists of a multiplicity of further elements“ (Radford, 2006, p. 184). These interconnecting elements or variables are connected in non-linear and dynamic way so that the relationships between the effect and cause are non-symmetrical and disproportional. According to Kuhn (2008), both individuals (learners, educators, educational administrators and policy-makers), associations of individuals (classes, schools, universities, educational associations) and human endeavour like educational research itself are multi-dimensional, non-linear, interconnected, far from equilibrium and unpredictable. Thereby the problems in educational endeavour could be reasonably identified as wicked problems that need to be approached by the perspective of post-normal science.

As it was implicated before, the educational research from the complexity point of view is necessarily connected with theoretical, paradigmatic and methodological pluralism. Complexity paradigm asks for the qualitative research complementing the quantitative studies and establishment of hermeneutic social science that would describe and explain the dynamics of social systems as complex adaptive systems mainly in terms of communication and information flow and their constitutive impact on clusters of possible causes and effects (Horn, 2008; Radford, 2008).

In regard to the research methodology, the authors who examine complexity of educational research, mainly focus on qualitative research, including the case studies, based on interpretative and interactionist epistemology, and participatory, multi-perspective and collaborative (self-organized), partnership-based forms of research implicating the equal dialogue between the initiators and participants of the process (Morrison, 2008). Thus the changes in educational research designate the move away from causal models toward modelling local connections between actors, practices and events on all levels of organization. Again, the simplistic solutions and single interventions that are frequently suggested by “normal science” should be replaced or at least complemented by “the recognition of the need for coordinated changes throughout the system and to its constraining and enabling contexts and resources” (Lemke & Sabel, 2008, p. 122). Davis (2008) argues that complexity oriented educational research should strive to integrate previously disintegrated phenomena like knower and knowledge, representation and presentation, different phenomenal levels of explanation (transphenomenality), multiple discursive perspectives (interdiscursivity) and various disciplinary viewpoints (transdisciplinarity). Let’s reveal some deeper connections of the last three concepts with educational research.

Transphenomenality involves sort of a level jumping from direct appearance of phenomena to some explanation beyond this appearance, for instance, in education it could be found trying to explain the learning simultaneously from the perspective of
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genetics, personal experience of learner, social interactions, cultural context, interaction between person and the world, etc.

Although the interdiscursivity itself comes from the post-structuralist theory and initially has been related to linguistic analysis showing how discourses intersect, overlap, and interlace in a framework of text, in given context of educational research interdiscursivity could be interpreted as “the use of elements in one discourse and social practice which carry institutional and social meanings from other discourses and social practices” (Candlin & Maley, 1997, p. 212). Following the example of learning, the aforementioned perspectives could be viewed upon from the intermingled discourses of analytic science, phenomenology, symbolic interactionism, cultural studies and philosophy (Davis, 2008).

Transdisciplinarity in educational research is justified both from the perspective of education as a field endowed with questions closely related to real life problems concerning each individual and involving multidimensional discourses across a large number of diverse disciplines, for instance, cybernetics, biology, neurosciences, philosophy, linguistics, psychology, sociology, etc. Transdisciplinary approaches to educational research allow one to maintain the disciplinary openness that is so important for such complex social system as education. Cronin (2008) proposes four core characteristics of transdisciplinary research from which the first two have gained wider recognition: 1) a focus on lifeworld problems, 2) transcending and integrating disciplinary paradigms, 3) participatory research and 4) the search for the unity of knowledge beyond the disciplines. Educational research today can be, possibly, appropriated through the first three criteria as they focus on socially recognized problems, integrate paradigms from different disciplines and, lately, as it was already mentioned, they have been associated with participatory approaches to inquiry in educational domain. Participatory educational research in terms of specific research methodology as participatory action research (Camarota & Fine, 2008; McTaggart, 1997; Kemmis, 2006) has been popularized through journals, books, projects, academic courses and workshops. However, consilience as coined by biologist Wilson (1998), explaining the search for the unity of knowledge beyond the disciplines, in educational research is probably at its initial stage (e.g., Lim, 2016).

So, to conclude, the educational research in terms of complexity is descriptive and explanatory research within a range of interpretive possibilities and broad perspective on development with primarily situation-specific decisions (Horn, 2008; Radford, 2006, 2008). In line with Radford (2008), the complexity of social reality as well as rendered explanatory frameworks mean that these are invariably fragile and open to continuous reinterpretation. This indicates that post-normal science can not clearly predict the success of educational interventions toward one or another objective thus disappointing many practitioners and decision-makers working towards the normative aims of education in the current era of effectivity, productivity and accountability (Hursh, 2005). The infinite number of variables and relative significance of them all is hard to measure from a knowledge of initial conditions therefore blurring the clear links between intervention and result (Radford, 2008). At the same time, one could eventually agree with suggestion by Davis (2008) about the urgent necessity to join the descriptive and pragmatic goals of educational research moving beyond description of complex phenomena toward deliberate attempts to prompt the emergence and affect the character of phenomenon.
Complexity as a Research Paradigm for Sustainability Education

Before delving into the nuances of the research, let’s have a short critical view into the essence of sustainability education. Following Sterling (2004), the term ‘sustainability education’ (SE) will be used as a unifying term including environmental education (EE), education for sustainable development (ESD), education for sustainability (EFS) and education for a sustainable future (ESF). To begin with, the main characteristics of SE relevant to educational and philosophical discourse will be highlighted, then educational research for sustainability will be detailed in some degree. Finally, the complexity perspective on SE research will be outlined emphasizing its transdisciplinary nature.

SE is essential for students to appreciate, understand and think critically about complex environmental, social and economic problems (Huckle & Sterling, 1996). According to Huckle (1996), it is an alternative general educational paradigm, that enables the fundamental reorientation of educational aims and education as a whole toward reaching more sustainable world. He notes that it is “both critical and transformative education, allowing learners to consider the merits of a wide range of alternative technologies, forms of social organization, models of development and ideas and values, and to form their own opinions regarding the meaning of sustainability and its implications for their lives and their relations with the rest of human and non-human nature” (p. xxii).

Oriented toward the change of educational paradigm, current SE still holds a lot of contradictions and dichotomies like one between realism and idealism in worldview, behaviorism and constructivism in learning theory and content/process as well as transmission/transformation in terms of methodology (Sterling, 2004). The integrated and theoretically sound description of SE key points suggests that SE is based on realist/idealist (relational) ontology, participatory epistemology and participative/systemic theory of learning. Based on intrinsic and transformative values, SE stresses the transformative learning experiences and pedagogy focusing on meaning making according to context while seeking wholeness and sustainability. SE serves as remedial, developmental and transformative agency looking for the change towards contextually appropriate balance between autonomy and integration in and between different levels of systems (Sterling, 2004). In SE the term sustainability is seen as a feature describing the entire learning process. According to Sterling (2004), this is not so much education for specific outcomes of sustainable development or even less – the education about sustainability, it is education as sustainability advancing critical, systemic and reflective thinking, creativity, self-organization and adaptive management.

The integral part of educational research – research in SE can not be viewed as a fully established yet or extensively discussed in literature, although the last years have designated the move toward more sophisticated approaches and appropriate perspectives. In terms of SE research on different levels of formal education, it seems that the most extensive development recently has been noticed in educational research for sustainability in higher education, than – in elementary and secondary stages of education, less activity has been observed in preschool education research (more common in US and Finland). Also, research in SE can be conducted in non-formal and informal educational settings. One of the few documents containing the programmatic review of research in ESD – The UNESCO Guidelines for creating a national ESD research agenda and plan (UNESCO, 2012) suggest several research directions (rather than research themes in the classical sense) that had been invoked during the early years of UNESCO Decade of Education
for Sustainable Development. The research should start with the theoretical background of ESD, than track the progress of ESD, identifying and analysing contribution of ESD to society and educational system while keeping in sight supporting and inhibiting factors as well as documenting success and failures. Usage of research-derived data on ESD to inform decisions was also considered an important direction (UNESCO, 2012). In a view of surveyed researchers (Pipere, Reunamo, & Jones, 2010), the research topics for ESD research should be focused at the monitoring and examination of the current situation, transformation of human awareness and actions towards more sustainable life and responsibility towards the world aiming to develop models for personal and a societal future life. Some researchers admit that their research considers sustainability as a sign allowing to see education in a new light (awareness, self-regulation, world views, etc.), recognize the need for the requisite evaluation of ESD (Kopnina & Meijers, 2014) and development of contextualized educational models (Stephens, Hernandez, Roman, Graham, & Scholz, 2008).

Speaking about the methodology of educational research for sustainability, it is widely recognized that similarly as in educational research in general both qualitative and quantitative approaches can be used as well as the mixed methods designs. Also, the action research and various types of participatory research become more and more common. Drawing from the Reunamo’s model of agentic perspective (Reunamo & Pipere, 2011) adapted for the ESD research it can be said that

in the ESD research qualitative studies should be aimed for the understanding of the motifs and discourse of sustainable development, quantitative research evidently will help to obtain a valid and generalized picture of sustainable development and its mechanisms, theoretic research will try to create tools to connect past and future, while participative inquiry will deepen the researchers’ awareness of their role as the producers of cultural content and ingredients of sustainable development. (Pipere, Veisson, & Salóte, 2015, pp. 12–13)

In terms of research methods, qualitative research in this field traditionally uses interviews (Corney, 2006) and focus groups (Barth, Godemann, Rickmann, & Stoltenberg, 2007), quantitative studies uses scales and quantitative surveys (Kopnina, 2013), theoretic research analyses the theoretical underpinnings and critical discourse of ESD (Kopnina & Meijers, 2014; Tillmanns, Holland, Lorenzi, & McDonagh, 2014), while participative studies commonly include the educational action research (Gedžüne & Gedžüne, 2011; Salite, 2008) and other forms of participatory inquiry (Gayford, 2003). Mixed method studies integrate the typical quantitative and qualitative methods applied in SE research (McNamara, 2010). In terms of case studies as a specific research design, initially they were criticised for their incapability to transform the practice, especially in higher education (Corcoran, Walker, & Wals, 2004; Kyburz-Graber, 2004), later also more practice oriented studies was commenced (e.g., Higgs & McMillan, 2006; Holmberg et al., 2008).

Recently several attempts to develop a complexity perspective on SE were initiated more in terms of aims, structure, processes, outcomes, etc. of SE, not so much in relation to research on SE. Already in the discourse on SE used by Sterling (2004) and other scholars one can notice a repertoire and specific vocabulary matching the main principles of complex dynamic systems (see in Table 1). Also, for example, complexity discourse in ESD has been extended lately employing the concept of rhizome or rhizomatic network structure (notion developed by G. Deleuze and F. Guattari (1987)), that shows us the
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ideal way of systems development. Rhizomatic structures (such as tubers or moss) can make connections between any two points on their surface thus resembling kind of transcontextuality at work. The principles of the rhizome (connection, heterogeneity, multiplicity, signifying rupture, cartography and decalcomania) have been examined in the context of six processes necessary for effective ESD (Tilbury, 2011), namely, collaboration, dialogue, ‘whole system’ engagement, innovation within curricula, teaching and learning and active and participatory learning (Tillmanns, Holland, Lorenzi, & McDonagh, 2014). This reconceptualisation of ESD as rhizomes enables us to perceive the reality of education as complex interconnected multiplicities.

Coming to this point in the paper, it already might be apparent that educational research for sustainability similarly as educational research per se and all research dealing with social systems and sustainability is inevitably connected to complexity as a research paradigm. As stated above, sustainability as a wicked problem should be viewed through the lens of post-normal science and all social systems and institutions dealing with sustainability in any form also should follow this way. Since the transformation of education in any direction, not to mention transformation of education toward sustainability, can also be regarded as a wicked problem, educational researchers exploring this transformation in an ultimate sense are eligible to approach education striving for sustainability as a complex dynamic system and hence to perform their studies based on the principles of these systems and features of complexity paradigm like transdisciplinarity, transphenomena and interdiscursivity. Following this line we could also say that wicked problems ask for transcontextual thinking – connecting things that usually are not associated in given context or thinking creatively and unconventionally.

Ultimately, it seems that educational research for sustainability can successfully use main principles of complex dynamic systems (in Table 1) as well as other principles and perspectives of complexity paradigm. All that was said above regarding the educational research from the complexity point of view, can be applied also to the educational research for sustainability. Next, one of the most promising and functional ways to describe complexity as a research paradigm for SE – using the discourse of transdisciplinarity, will be in focus.

Educational research for sustainability matches at least three core elements of transdisciplinary research (Cronin, 2008), namely, it focuses on lifeworld problems since education is both the most individual and global lived experience of humanity reproduced every minute in every part of the world, it is searching for transcendence and integration of disciplinary paradigms and it actively uses the approaches and methods of participatory inquiry as seen above. The research in SE as transdisciplinary research can be organized using Stokols’ (2006) programmatic directions for the scientific study of transdisciplinary research and community action that suggests three types of collaboration. These three types can be detailed and complemented with two other types of collaboration thus distinguishing two groups of collaboration:

1) Cross-disciplinary collaboration for SE research:
   - Disciplines dealing with sustainability and its physical, biological, and ecological context;
   - Disciplines dealing with social systems in general: sociology, politology, communication, community psychology, social work, social psychology, health psychology, etc.;
Disciplines dealing with education as social system: educational science, educational philosophy, environmental education, educational psychology, cognitive psychology, social (community) pedagogy, etc.

2) Cross-institutional collaboration for SE research:
- Collaboration among researchers from multiple fields and community practitioners representing diverse professional and lay perspectives (e.g., researchers in environmental education, social psychology, community workers and representatives of community and national media);
- Collaboration among research organizations and institutions across local, regional, national and international levels;
- Collaboration among educational institutions across local, regional, national and international levels;
- Collaboration among community organizations across local, regional, national, and international levels.

It should be noticed that also the combination of several types of cross-collaboration is possible, besides, as mentioned earlier, in some cases even a single researcher, having expertise in several disciplines can conduct transdisciplinary research.

In terms of research outcomes, educational research for sustainability should strive for three types of knowledge peculiar for transdisciplinary research (Hadorn et al., 2008):

1) **System knowledge** could bring the knowledge about the current system of SE, frame the most significant issues in this field and systemic interpretation of this knowledge in accordance with various goals of researchers and other involved groups;
2) **Target knowledge** designates the desired future status of SE recognizing the multiple norms and values that will depend on researchers and other participants’ perceptions of SE as complex system, their understanding about the systems relations and options for change;
3) **Transformation knowledge** in this field would help practitioners to make the transition to the target status of SE that will ask for social, political, legal, cultural, institutional and other changes.

The integration between the transdisciplinarity, research methodology and practice has brought the approach of transdisciplinary case study that could be viewed as a combination of research, learning and application. Some attempts to apply this approach to the research for sustainability and related issues are already made by several authors (Stauffacher, Walter, Lang, Wiek, & Scholz, 2006; Stauffacher, Flieler, Krüttl, & Scholz; 2008; Wiek, 2007).

**Concluding Reflections**

Like the most issues in environmental sustainability, also the “educational” sustainability can be portrayed by high decision stakes and high systems uncertainties. The future of the world depends on the competences of young generation to think and live sustainably, make sustainable choices and difficult decisions in the context of rising uncertainty, insecurity and ambiguity. Moreover, the arena of education has always been fraught with miriades of factors, networks, contexts associated with unpredict-
ability, adaptation, self-organization, etc. depending on large number of stakeholders and their relationships.

Diamond (2003, p. 23) lists four reasons for the collapse of societies: these are failures to 1) anticipate problems, 2) perceive problems, 3) engage in problem-solving and 4) solve problems despite engaging with them. Unsustainability of ecological, political, social, cultural and educational systems which is clearly revealed in our contemporary relationships with these problems shows that we need new paradigms and innovative approaches to the traditional and long time established dimensions of human life. However, as it might be inferred from the analysis above, it would also lead to unsustainability if we unanimously declare every problem encountered as a wicked problem and deal with it only as complex system within a framework of transdisciplinarity desperately looking for required collaborators in other disciplines, institutions or community. Complexity, wickedness, transdisciplinarity and the like should be always viewed on a certain scale or range according to the real world context, common sense and sometimes even intuitive grasping of situation.

This paper has presented the conceptual analysis aimed toward the justification of complexity thinking to explore SE. To build the solid argumentation, the paper started with the definitions of complexity and main principles of complex dynamic systems followed by implications of complexity thinking for sustainability, education, and SE. The research paradigm as looked through the concepts of post-normal science, wicked problems and transdisciplinarity in sustainability and related issues inevitably pointed to the necessity of complexity thinking. Educational research for sustainability could benefit by the complexity paradigm based on transdisciplinarity, transphenomenality, transcontextuality, interdiscursivity and principles of complex dynamic systems. Finally, the transdisciplinary nature of educational research for sustainability has been elaborated in a more detailed way. This paper itself can be perceived as an example of transdisciplinary exercise connecting different disciplines that happen to be integrated in the research interests, research and teaching practice of the author.

The idea about this paper emerged after finishing the chapter on complexity for the book “Research: Theory and Practice” (Pipere, 2016). The intention to bridge the innovative ideas on complexity and educational research on sustainability seemed very reasonable, logical and clear. However, finishing this work it is evident that this has been just the beginning of a large work that sometimes may seem not reasonable at all, too complex, uncertain, unpredictable and asking for inexhaustible creativity. Considering if only the pressing necessity to merge the description of complex phenomena in SE and urge from the practitioners and politics to provide the normative knowledge for effective and swift changes in human behaviour, it looks like the complexity paradigm applied to educational research in its essence is very taxing on researchers and practitioners. It asks from them the extention of expertise in other fields, assuming larger responsibility for practitioner-based inquiry and applying contextual theories and models. The educational research and educational practice could be an aspects of the same project – “expanding the space of human possibility by exploring the space of the existing possible” (Davis, 2008, p. 168). Hopefully, the ideas of this paper might facilitate also the solution of the ethical dilemma presented in the introduction of this paper.

One of the limitations of given approach used in the paper relates to the lack of larger emphasis and more detailed elaboration on the complexity principles for the educational research for sustainability. However, this can not be attained without proper
preparation of mindset and gradual transformation of traditional discourse currently used in a majority of research papers in this field. The present situation bears indications that the researchers and practitioners need a certain period of adaptation to the new ideas and approaches making the acceptance of innovations and mental transformations more easy. However, it can be also viewed as our collective cognitive responsibility (Scardamalia, 2002) to make such an adaptation in our views and ideas on research.

Further avenues of development in respect to the reasoning presented in this paper point to the detailed analysis and justification of research paradigm of complexity in educational studies as well as in a field of SE per se and educational research for sustainability. The thorough and systematic theoretical analysis of the principles of complex dynamic systems as a potential context for the future development of educational research for sustainability for the time being should be complemented with the relevant empirical inquiry. Since sustainability, education and research can all be viewed as the complex problems, they are also open systems. And so this paper probably also could be viewed as a wicked problem leaving many important questions open for feedback, further investigation and collaborative endeavours. Besides, all complex systems are creative in their nature, but if we have creativity, we also have a hope – for the world and all of us.

References


Envisioning Complexity: Towards a New Conceptualization of Educational Research...


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A Corpus of Young Learners’ English in the Baltic Region – Texts for Studies on Sustainable Development

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Abstract

In order to reach far in the work for sustainable development, communication in foreign languages prior to strategic decisions is required from international partners. In this communication English has become the lingua franca. Even though the use of EFL (English as a foreign language) is widely spread, it is clear that in some geographical regions English has quite recently taken the role as the language of international communication. It is therefore relevant carry out studies in order to identify possible causes for misunderstandings when communicating in EFL. With the aim of providing material for research on EFL by 12-year-olds, the creation of a language corpus on the use of English in the Baltic region is in process. The first part of the data collection was completed in August 2016 and the data comprises some 2,200 texts written in 2015–2016 by Estonian, Latvian, Lithuanian, Russian and Swedish learners. The aim of the present study is to investigate young learners’ written communication on issues related to sustainable development.

A qualitative method was used on a limited sample of to identify key words in the production by young learners of five different nationalities. Abstract nouns related to topics which can be regarded to refer to sustainable development were collected and analyzed.

The results show that 12-year-olds are able to communicate in English for discussions on issues related to sustainable development. This indicates that successful international communication in English on these matters is within reach with a continued process of English language learning at schools in the Baltic region.

Key words: young learners, English, Baltic Region, corpus, written production, discussions of sustainable development

The English Language and International Communication

The English language has become the means of communication to bring people together internationally. In order to cooperate and find solutions for mutual benefit and understanding it is essential that communication works. Misunderstandings and communication breakdowns can lead to unwanted conflicts and thereby be obstacles
for finding solutions that need collaboration from several regions and countries. In the
discussions of education for sustainable development, environmental, educational and
socio-cultural aspects are considered. Within the last one, certain fields of interest seem
to be given more and more attention and the focus is thereby on issues such as tolerance,
respect and foreign language education (Zygmunt, 2016).

It is thus essential that people in different countries and with different mother
tongues in a region both are willing to and have the capacity to use a foreign language
in communication with each other to be aware of the complexities of sustainable develop-
ment at a global level such as climate change and consumption patterns. On an everyday
life level, decisions should be taken that are to be based on ideas of sustainable develop-
ment on the future road to responsible life styles with questions which concern what we
do, how we do it and what we use to do it. This can be seen in the light of striving for
worldview education for global citizenship (Miedema & Bertraam-Troost, 2015). It is
therefore of significance for the future if we want to find solutions to common environ-
mental, social and economic challenges that we can work and thus communicate inter-
nationally to find strategies and methods together. Effective communication in a common
foreign language is thus a crucial factor for spreading ideas about a sustainable life style.
In this way new meanings of central concepts are negotiated in order to make the indi-
vidual think about preferred futures. In this way education not only in a foreign language
but in general becomes a future-facing activity (Iliško, Skrinda, & Mičule, 2014).

We sometimes take it for granted that decision-makers and policymakers have the
ability to communicate efficiently in international contexts in English at international
summits to discuss how to tackle major strategic issues at a global level. Probably the
demands will increase in this respect when rapid communication in international settings
becomes an even more common and natural part of working life. Efficient communication
is the way to enable a paradigm shift to affect consumer behavior, political structures
and global production networks.

The present study is about a project that involves five countries in the Baltic Region:
Estonia, Latvia, Lithuania, Russia and Sweden. For historical and political reasons, com-
munication between some of these countries could be very limited just 30 years ago. At
that time the Russian language played an important role as a means of communication
between some of them and can still be used today. However, in order both to spread
your own ideas and to show good examples, and in addition be informed about current
findings, ideas and trends from distant cultures and economies, there is a need for a
lingua franca working worldwide – and the English language has more and more taken
that role in contacts in business, trade, and academic life (Jenkins, 2007).

As a consequence of this development we can see that foreign language learning
starts at primary schools and not later that at the age of nine in almost all European
countries. In Europe, English is the first foreign language at elementary levels and it is
the case that young learners in most European countries approach the A1-level in their
oral and aural skills during the first four years of instruction (British Council, 2011).

Working with Values and Beliefs in Foreign Language Learning

Content plays a major role in foreign language teaching and learning, particularly
with the English language which is widely spread in society and media (Snow, 2001).
As a consequence, it is natural to include language learning as a part of education for
sustainable development and in this way work for fostering critical and independent citizens who question current behavior and patterns of life style. The work with these matters, such as intercultural learning to learn about the benefits of a culturally heterogeneous society, can be carried out at an early age such as with 5 to 7 year-olds (Zake, 2010). Including a relevant content in language learning often becomes evident when authentic material and interactive and international communication are used as ingredients in the planned teaching and learning. This approach is in line with the action-oriented view on language learning found in the Common European Framework of Reference for Languages (CEFR) which describes the language learner as “in the process of becoming a language user”. So even though form-focused instruction also is present, it is clear that content-based language instruction with relevant and engaging topics is here to stay (Council of Europe 2001, 43). The foreign language is the tool to discuss international matters of the future at all levels, since the fact is that if global problems are to be solved, international cooperation needs to be involved at an early stage. The learning of relevant vocabulary in the foreign language could for instance be the first step in order to be able to communicate and thereby reach these goals of democratic, environmental and sustainable values and ideas. According to Switala (2015), value is a central notion across the curriculum, a key for sustainable development and depends on the teachers’ understanding of it.

Learning about values and cultures as well as becoming intercultural aware are prerequisites for successful international communication. In the process of learning a foreign language, the learner comes to realize cultural differences which become evident. A foreign language and its culture hang together in the learning process and the fact that the learner becomes aware of the differences between his/her own country and culture and the foreign one is a must for successful communication and collaboration with international partners.

Communication about strategies and long-lasting changes in society, with in some cases controversial issues for change and development, demands a rich and advanced vocabulary and an awareness of challenges on the global scene. Participating in negotiations in a foreign language with partners from different language and cultural backgrounds requires certain skills that need to be learnt and practiced in order for the interlocutor to reach his/her goals. It is thus essential to work with the integration of values and intercultural learning in the foreign language classroom.

School practices more and more tend to leave the traditional classroom procedures thanks to ICT and do not only rely on traditional schoolbook material when learning English. The use of authentic or authentic-like communication in learning processes motivates and engages learners for communication on sustainable development and phenomena such as social media, entertainment and computer games play a significant role both in and outside school in foreign language learning (Salóte, Gedźune, Gedźune, 2009). The influence of English from activities in children’s spare time on their knowledge and learning of English is nowadays a recognized phenomenon (see for instance Sundqvist, 2009). By coming across new ideas and views, learners can hopefully reconceptualize concepts and reframe their mindsets (Tillmanns, Holland, Lorenzi & McDonagh, 2014, Skrinda, 2010). In a project when 12-year-olds in Russia and Sweden communicated in English at common blogs the results clearly showed that the children in the study became aware of cultural differences and similarities and could gradually start to question and reflect on central issues, such as recycling and gender roles, which are part
The Procedures in the Collection of the Data in the Baltic Young Learners of English Corpus (BYLEC)

Since future discussions in international contexts on changes in society for sustainable living conditions will be in English it is of importance to find out more about the characteristics of the linguistic varieties of English used in this communication. Scandinavian and Russian speakers generally have their own specific difficulties when speaking and writing in English that can be identified (Swan & Smith, 1987). By learning more about these interlanguages and language development among young learners in their progress when learning English, and not only structural difficulties but also choices of vocabulary and the use of collocations, it is possible to identify linguistic features that are different due to language background and which can lead to misunderstandings in complex issues such as sustainable development. These findings evidently lead to pedagogical implications for the classrooms. Collecting learner English in a corpus as a resource for research is a recognized approach to the understanding of learner language (see for instance Granger, 2003).

The data in the BYLEC project is collected in two parts. The first part (Part 1) was completed in the academic year 2015/2016 and the second part (Part 2) is for the academic year 2016/2017. Six universities in the Baltic Region cooperate on the one hand by recruiting school teachers who teach English to 12-year-olds and on the other hand by being in charge of analyses on the data.

The first step in Part 1 was the organization of workshops for the school teachers in Sweden, Estonia, Latvia, Lithuania and Russia. The purpose of these workshops was to inform the teachers about the research project and to discuss the construction of the six tasks for the writing of the texts as well as the instructions for the pupils. These five workshops were organized at the university in each country and together with the participation of the Swedish project leader and lecturers from the home university. In Estonia an additional Swedish lecturer participated at the workshop with a special interest in how to encourage children with learning difficulties and in Lithuania a Skype-conference was organized with the lecturer at Stockholm University. At these five workshops the teachers’ experiences and reflections were taken into account in the final revision of the instructions and tasks in order to secure that the tasks would be appropriate for all 12-year-olds no matter their mother tongue or cultural background.

The second step in Part 1 was the collection of the extra-linguistic variables of the 12-year-olds. A questionnaire on the learners’ profiles was constructed and distributed to the school teachers. This questionnaire covered the following variables: gender, age, mother tongue, other languages used outside school, years of English studied at school, time spent abroad, extra lessons of English taken in their spare time, experiences and habits of using English in computer games and on the Internet, and the use of English of sustainable development (Andersson & Sundh, 2014). Values and ideas for change, such as consumption patterns and gender roles in families spread rapidly in their international encounters in these children’s communication in their spare time. Since change requires contacts with new ideas and people, knowing the foreign language becomes the necessity for this change to occur. To learn a foreign language is thus to learn for a sustainable future.
outside and after school. The profiles were sent to the project team and all learners were given a code to guarantee them being anonymous in the whole project. The school teachers were asked to inform the children and their parents about the following conditions: In the collection of the profiles and texts the children were anonymous, the texts were collected for research purposes and the participants’ identities would not be disclosed in any way (Vetenskapsrådet, 2016). The learners were then organized in the data with their codes as in the following example: SE-A-1 (country, school, student), and then using this system when the six texts written by the learners were organized (SE-A-1-1; SE-A-1-2, SE-A-1-3 and so forth).

In the third step of Part 1 of the project, the instructions for writing the six texts were distributed to the school teachers with the deadlines for three first texts in October, November and December in 2015 and the three last texts in February, March and April 2016. The topics of the six texts were (1) My best friend, (2) My pet, (3) A place I like, (4) An adventure/a journey of my dreams, (5) My favorite website/computer game/app, and (6) Me in the world in the future. The topics are descriptive in character but the last one (Text 6) provides the opportunity to discuss issues of the future and a sustainable life style.

A research workshop was organized in November 2015 when the following issues were clarified: the program used for the linguistic analyses, principles in the transcribing of the learners’ production, and the storing of the data in a secure way. In August 2016, researchers and school teachers who participated in the project were invited to a workshop at Uppsala University to evaluate the first part of the project.

In the fourth step of Part 1, all texts were transcribed and organized in the corpus data file and were made ready for analyses.

Part 2 of the project (2016/2017) is now in progress with some 500 learners who are to produce six texts which are regularly submitted to the project team for organization and transcription. Schools in Poland joined Part 2 in the BYLEC project which will add one country to the investigation.

The Purpose of the Investigation

The study is carried out on 12-year-olds in five countries in the Baltic Region with highly different historical, cultural, environmental and economic conditions: Estonia, Latvia, Lithuania, Russia and Sweden. The children’s mother tongues are of different origins and structures and when these 12-year-olds communicate in the future in conversations or negotiations, they will do so in English. It is thus essential in order to achieve successful communication that they are prepared in the best way in their learning of English.

The purpose of collecting the written production is to gain insights into Estonian, Latvian, Lithuanian, Russian and Swedish 12-year-olds’ uses of English. The data results can lead to useful considerations when discussing pedagogical implications and the organization of and priorities in teaching English in the different countries. A special interest is on questions about integrating content such as sustainable development in English language learning at an early stage in order to facilitate for international communication in the future.
Research Questions

At this stage when the collection of the data in Part 1 is completed the following three research questions are formulated:

1. What are the characteristics of the data collected in Part 1?
2. What are the expressed ideas in the young learners’ writing about the future and issues of sustainability in Text 6?
3. Can differences be observed in the young learners’ expressed ideas when the productions in Text 6 in the five countries are compared?

Methodological Considerations

As a background to the results presented, a quantitative approach is used for the purpose of providing a picture of the learners and the texts analyzed. In this part the learners’ gender and mother tongues are presented followed by the texts in terms of numbers of submitted texts and the lengths of them in words.

In order to investigate the content in the texts regarding issues related to sustainable development, a qualitative approach was relevant. The texts in the corpus are limited both in length and content and therefore approaches such as content or thematic analyses were not considered to be useful; the sentences that contain ideas expressed about the future and sustainability were brief and limited (Savin-Baden & Major, 2013). For that reason, a keyword analysis was selected as described by Bernard and Ryan (2010). The method of collecting key words involved finding words that have some sort of meaning in a context of sustainable development. There are several ways in doing this, such as finding frequently used words, unusual use of certain words and identifying key words and the words surrounding them. In the present study, the last alternative was selected.

The key words selected in the present study are nouns used in a context with an abstract meaning related to topics of the economic, environmental or sociocultural aspects of sustainable development. The occurrence of abstract nouns in production is an indication of a higher level of language proficiency and abstract thinking (Sundh, 2003).

The following three criteria were used in the selection of the nouns:

1. The nouns occurred more than once in the data.
2. The nouns were used by more than one learner in the data.
3. The nouns were used in an abstract sense and in a context that can be associated with issues of a sustainable life style.

The Data: Learner Profiles

Learners in five countries participated in the project and wrote at least one out of the six texts. These texts are linked to their extra-linguistic background data. In Table 1 below, the numbers of participating learners in the five countries are provided.
Table 1

Participating Learners in the BYLEC-project 2015/2016

<table>
<thead>
<tr>
<th>Country</th>
<th>Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>100</td>
</tr>
<tr>
<td>Latvia</td>
<td>123</td>
</tr>
<tr>
<td>Lithuania</td>
<td>125</td>
</tr>
<tr>
<td>Russia</td>
<td>81</td>
</tr>
<tr>
<td>Sweden</td>
<td>62</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>491</strong></td>
</tr>
</tbody>
</table>

As can be seen in Table 1, the learners spread across the five countries with between 62 and 125 learners per country.

Table 2

The Gender of the Participating Learners in the BYLEC-Project 2015/2016 in the Five Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Boys</th>
<th>Girls</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>43</td>
<td>56</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Latvia</td>
<td>62</td>
<td>58</td>
<td>3</td>
<td>123</td>
</tr>
<tr>
<td>Lithuania</td>
<td>63</td>
<td>60</td>
<td>2</td>
<td>125</td>
</tr>
<tr>
<td>Russia</td>
<td>32</td>
<td>38</td>
<td>1</td>
<td>81</td>
</tr>
<tr>
<td>Sweden</td>
<td>24</td>
<td>38</td>
<td>–</td>
<td>62</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>224 (46%)</strong></td>
<td><strong>250 (51%)</strong></td>
<td><strong>7</strong></td>
<td><strong>491</strong></td>
</tr>
</tbody>
</table>

As for the proportion of girls and boys, Table 2 shows that there are no major differences and that in the whole material there are slightly more girls than boys but no number that can be expected to influence the overall analyses.

The answers in the learner profile questionnaire reveal that most learners were born in 2003. Some 20% of the Estonians were born in 2002, and some 20% of both the Russians and Latvians were slightly younger since they were born in 2004. A difference between the groups is that in some countries learners take extra lessons in their spare time. 70% of the Russian learners claim that they do so, whereas some 20% of the Latvians and Lithuanians and 10% of the Estonians also have this arrangement in their spare time, whereas hardly any Swedes have this extra tuition. It is evident that all learners are used to being in contact with the English language in activities related to the Internet and computer games since 90% of them across all nationalities confirmed it. It is also clear that the English language is a natural part of these young people’s everyday life as between 60 and 80% of them in each of the five countries reply in the questionnaire that they either spoke or wrote in English in their free time when they looked back at the last week.

Table 3 shows that the Russian language is the most common language spoken at home. 196 learners answered that they spoke Russian at home which is 40% of the total number. Russian is thus the most common mother tongue in the study and these learners are found in Estonia, Latvia and Russia. The Lithuanian language is the second most common language.
Table 3  
*The Learners’ First Language Across the Five Countries in the BYLEC-Project 2015/2016*

<table>
<thead>
<tr>
<th>Country</th>
<th>Estonian</th>
<th>Latvian</th>
<th>Latvian and Russian</th>
<th>Lithuanian</th>
<th>Russian</th>
<th>Swedish</th>
<th>Other</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>66</td>
<td>34</td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latvia</td>
<td>30</td>
<td>9</td>
<td></td>
<td>82</td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
<td>123</td>
</tr>
<tr>
<td>Lithuania</td>
<td></td>
<td></td>
<td></td>
<td>124</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td>1</td>
<td></td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>62</td>
<td></td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>30</td>
<td>9</td>
<td>124</td>
<td>196</td>
<td>62</td>
<td>1</td>
<td>3</td>
<td>491</td>
</tr>
</tbody>
</table>

The Results of the Collection of the Data: the Texts

Table 4  
*Numbers of Submitted Text1 – 6 From Each Country in the BYLEC-project 2015/2016*

<table>
<thead>
<tr>
<th>Country</th>
<th>Text 1</th>
<th>Text 2</th>
<th>Text 3</th>
<th>Text 4</th>
<th>Text 5</th>
<th>Text 6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>83</td>
<td>95</td>
<td>58</td>
<td>61</td>
<td>62</td>
<td>61</td>
<td>420</td>
</tr>
<tr>
<td>Latvia</td>
<td>109</td>
<td>117</td>
<td>113</td>
<td>110</td>
<td>119</td>
<td>110</td>
<td>678</td>
</tr>
<tr>
<td>Lithuania</td>
<td>105</td>
<td>107</td>
<td>108</td>
<td>72</td>
<td>97</td>
<td>106</td>
<td>595</td>
</tr>
<tr>
<td>Russia</td>
<td>50</td>
<td>61</td>
<td>26</td>
<td>55</td>
<td>56</td>
<td>66</td>
<td>314</td>
</tr>
<tr>
<td>Sweden</td>
<td>58</td>
<td>54</td>
<td>55</td>
<td>47</td>
<td>25</td>
<td>51</td>
<td>290</td>
</tr>
<tr>
<td>Total</td>
<td>405</td>
<td>434</td>
<td>360</td>
<td>345</td>
<td>359</td>
<td>394</td>
<td>2297</td>
</tr>
</tbody>
</table>

Table 4 shows that the data consists altogether of 2,297 texts. Since there are more Latvian and Lithuanian learners in the project than learners of the other three nationalities it is natural that there are also more texts from these two countries. Two Estonian schools only participated in the collection of the Texts 1 and 2 which explains the lower figures from Text 3 to Text 6 in the Estonian data.

The Learners’ Expressed Ideas in Text 6

In the instructions to Text 6 the learners were asked to write about their future with the following questions:

*Imagine that you are around 35 years old. What will you work with? Where will you live? Will you go by bus to work, or will you perhaps fly there in your own little airplane? Perhaps you will have a robot at home, which will do all the housework (cleaning, washing, and so on). Computers are very common today, but what will they be used for in the future? If you have children, will they go to school just like you do? Will you have a little chip in your arm where all the important information is stored?*

Table 5 shows that the 394 texts of Task 6 have differences in length ranging from 2 words up to 519 words and that the average lengths of the texts for four of the countries are between 126 and 149. The texts from the Russian learners are shorter than the texts from the other countries.
Table 5
The Number of and Average Lengths of Text 6 Produced by the Learners in Each Country in the BYLEC-Project 2015/2016

<table>
<thead>
<tr>
<th>Country</th>
<th>Total numbers of Text 6</th>
<th>Average lengths of Text 6 in words used</th>
<th>Range in number of words used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>61</td>
<td>149</td>
<td>22–519</td>
</tr>
<tr>
<td>Latvia</td>
<td>110</td>
<td>139</td>
<td>21–395</td>
</tr>
<tr>
<td>Lithuania</td>
<td>106</td>
<td>126</td>
<td>2–299</td>
</tr>
<tr>
<td>Russia</td>
<td>66</td>
<td>76</td>
<td>8–172</td>
</tr>
<tr>
<td>Sweden</td>
<td>51</td>
<td>143</td>
<td>30–240</td>
</tr>
<tr>
<td>Total</td>
<td>394</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The texts were analyzed in terms of the learners’ uses of certain abstract nouns to see whether any topics were discussed which are part of the economic, environmental or sociocultural aspects of sustainable development. The results presented in Table 6 show that the learners wrote about issues related to sharing resources and communicating across cultures with nouns such as *charity*, *communication* and *culture*, issues related to technology with nouns such as *technology*, *invention* and *energy*, and finally issues related to international conflicts in terms of concepts such as *war* and *peace*.

Table 6
The Occurrence and Frequencies of Key Words Used in Learners’ Texts 6 Across the Five Countries in the BYLEC-Project 2015/2016

<table>
<thead>
<tr>
<th>Key Word</th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
<th>Russia</th>
<th>Sweden</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>charity</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>10</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>communication</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>culture</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>energy</td>
<td>4</td>
<td></td>
<td>1</td>
<td>5</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>invention</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>peace</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>8</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>technology</td>
<td>3</td>
<td>12</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>war</td>
<td>12</td>
<td>14</td>
<td>2</td>
<td></td>
<td></td>
<td>28</td>
</tr>
</tbody>
</table>

In order to describe the young learners’ discussion of these issues related to sustainable development, five examples are provided below to illustrate the context of the nouns presented in Table 6.

1. “In summer 2040 comes the **war**. Every country sends their bravest and strongest warriors to the **war**.” (EE-B-7-6)
2. “Give money for **charity** in amount 100000 give to **charity**. That’s my life in 1040” (LT-B-7-6)
4. “I would like to help push the world of information **technology**” (RU-A-6-6)
5. “I don’t want to live in an apartment want to live in a hose with sun **energy** and it’s going to be a smart hose hope u guys like my thoughts bye!” (SE-B-2-6)

The results show that when the learners discuss abstract matters related to sustainable development the matters can be summarized to three areas: (1) sharing resources and communicating in different cultures, (2) finding new inventions for energy and
technology, and (3) finding ways to cope with and possibly solve international conflicts. Even though the material is limited and many extra-linguistic and classroom factors influence the learners’ choices of topics we can nevertheless identify that the Lithuanian learners wrote about topics related to charity, that the Latvian learners focused on technology and energy and that the Estonian and Russian children used abstract nouns related to conflicts.

In order to provide a more comprehensive picture of the learners’ uses of these abstract nouns, analyses were carried out on content words immediately surrounding the three most common nouns used in abstract sense in the data: charity, technology, and war. Table 7 shows these content words that emerged in the data. The words presented occurred more than once.

Table 7
Words/phrases Occurring More than Once in the Data Together With the Three Key Words ‘charity’, ‘technology’ and ‘war’

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<table>
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<tr>
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<tbody>
<tr>
<td>Charity</td>
<td>donate, give, money</td>
</tr>
<tr>
<td>Technology</td>
<td>future, information, more, much, new</td>
</tr>
<tr>
<td>War</td>
<td>future, there will be/there will not be, world</td>
</tr>
</tbody>
</table>

Table 7 provides a summarized picture of the 12-year-olds’ most common issues discussed with reference to future perspectives and sustainable development. The view in the texts is that charity will be a means of sharing financial resources in terms of giving money to people in need. We will benefit from new technology in many places, such as at home and at workplaces, which in this way will make our life style more sustainable. Finally, a war is described as a threat to a safe future and a secure development in the world.

The Potential of the Data for Further Analyses

The presentation of the BYLEC-data in the present text is the first step in a process of analyzing the written production by young learners in the Baltic Region. The material will be available for university students and researchers at the partner universities and can be useful when looking at matters such as the use of the English language as a foreign language when the learners have Russian as the mother tongue but are in different cultural and educational contexts such as Estonia, Latvia and Russia.

The list below provides examples of research questions to illustrate the potential of the data and possible directions in the future research:

- What are the specific productive patterns of young learners’ second language production in these five countries?
- What intercultural aspects, societal factors and native language interference could explain the identified variation in learner language?
- What features of spoken English and digital communication emerge in their written production such as discourse markers, emoticons, traits from texting messages, multiple causal coordination and informal vocabulary?
- What are the ideas and values in the minds of these 12-year-olds across the six different countries and expressed in the texts?
• What are the pedagogical implications for classroom work with writing in English of these identified differences?
• Can the written production by 12-year-olds in the countries of the Baltic Region in the project be described as being at the A2-level according to the Common European Framework of References for Languages (CEFR)?

It is already obvious that the material will be used for different purposes by the various partners. At the international workshop in August 2016 at Uppsala University, ideas were launched to study the content in the texts and thereby identify the mindset of the children in the different cultures in the Baltic Region and to find common tools with the help of the texts for the assessment of the skill of writing in English. These two ideas are only examples what is to come. The material has already been used for term papers at bachelor level at the English Department, Uppsala University and then with a focus on accuracy and the occurrence of a selected number of language structures (Barås & Mohlin 2016; Eriksson 2016).

Concluding Remarks

The present study described the procedures in the collection of the data in the BYLEC-project, the learner profiles in the material and some first results in terms of text lengths and issues being discussed in one of the six texts. The results show a data with a large group of 12-year-olds who have the Russian language as their mother tongue and with an even distribution of girls and boys. In one of the six texts written by the learners, some key words which can be related to issues of sustainable development were identified. There are definitely great differences in levels of language proficiency among the learners in the five countries which is seen in the lengths of the texts. Nevertheless, it is clear that many young learners are able to touch upon questions and topics which are part of the discussion of sustainable development. The forthcoming results will in the context of the Common European Framework of References for Languages (CEFR) lead to pedagogical implications and in that way work for future efficient communication in international contexts between European citizens on issues which are to be solved on an international level for sustainable development on a global level.

Acknowledgements

This study would not have been possible without the participation of colleagues at Tartu University, Estonia; Daugavpils University, Latvia; Vytautas Magnus University, Kaunas, Lithuania; Immanuel Kant Federal University of Russia in Kaliningrad, Russia and Stockholm University, Sweden.

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Norrbackaskolan, Visby, Sweden
St Hansskolan, Visby, Sweden
Kräklingbo skola, Katthammarsvik, Sweden
Tartu Karlova School, Tartu, Estonia
Tartu Tamme School, Tartu, Estonia
Narva Pähklimäe Gymnasium, Narva, Estonia
Narva Keeltelitseum, Narva, Estonia
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Enhancing Religious Education Through Worldview Exploration

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Aybiçe Tosun
Eskişehir Osmangazi University, Turkey

Abstract

Exploring one’s worldview requires a journey into one’s heart, soul and mind (Knowing Self). But Knowing Self requires Knowing Others, imperative in a global world. To what extent do schools prepare students for participation in that global world, especially when it comes to awareness of its worldview diversity, and no less its religious diversity? This paper presents the findings of two research projects highlighting knowledge, awareness and attitudes towards various worldviews. The findings of the first is rather disheartening, a result of little to no attention given to teaching about religion in the schools. The second is much more encouraging, a result of worldview education that explores both religious and secular worldviews – their impacts on individuals and society. It then gives a brief description of a worldview framework that deepens and broadens awareness and understanding of self and others, encourages questioning and openness, and develops critical thinking.

Keywords: worldviews, religion, teaching about religion, critical thinking, worldview framework.

Introduction

Exploring one’s beliefs and values (one’s worldview) requires a journey into one’s “inner territory” – into one’s heart, soul and mind (Knowing Self). But “he who knows one; knows none” (Müller) – Knowing Self requires Knowing Others, imperative in an increasingly global world.

Canada has increasingly become home to people from various cultures, regions and religions. Canadians also increasingly travel where they encounter people from various cultures, regions and religions. As such, knowledge of the other becomes essential. But so does critical thinking about them. Knowledge and discernment go hand in hand.

Schools purport to be the most appropriate institutions to enhance these skill sets. They have become prominently positioned in our societies and their certificates and degrees are highly sought. But are schools delivering?
In an increasingly secular world, knowledge of the other, especially the religious other, is waning. According to Nord, students are able to graduate, often with the highest academic degrees, without having rubbed two religious thoughts together (Nord, 1995). For all too many, religion is an afterthought, with little relevance to life in the modern world. Religious illiteracy is at an all time high (Prothero, 2009).

Teaching about religion has been removed from the school curriculum in some provinces in Canada, transmuted into ethics course in others, side-lined in many, and what of the rest? This impacts education as a whole. Promoting awareness of the global other can hardly afford neglecting awareness of the religious other. Yet, it appears that this might indeed be occurring. What steps might be put in place to reverse it?

All of these questions and concerns surfaced in regard to two different research projects carried out in 2015 at the University of New Brunswick (Canada). The first, a quantitative pilot project, probed the level of knowledge and awareness of students who had not taken religious studies courses. The results were discouraging. The second, a qualitative PhD research project, probed the level of awareness and critical thinking of students whose program intentionally mandated worldview studies courses. The results offered rays of hope.

This paper seeks to accomplish three things. One, it will outline the theoretical framework that underlies the research projects. Two, it will highlight the results of the two research projects, revealing the significant differences between the findings of the two. Three, it will suggest a model that enhances knowledge and awareness of both the global and the religious other through the exploration of worldviews – religious and secular.

**Theoretical Framework**

The two research projects were premised on the assumed significance of teaching about worldviews – religious and secular – in the public school system. One of the aims of education is to enable students to create meaningful relationships with self, others, nature and social structures (Şişman, 2010, pp. 26–27). To achieve such an aim education should engage all aspects of the human, including the religious or spiritual dimensions. Some strongly argue that teaching about religious worldviews in particular enhances human connections to self, others, the environment and a greater or higher transcendent being (Selçuk, 2008; Bilgrin, 1981; White, 2004).

Teaching about religion, as well as learning from them, can act as an integrative element in multicultural societies. It assists people in achieving greater knowledge and awareness of the religious other and developing greater understanding and tolerance of them (Altas, 2005). This is especially significant in a multicultural society where social engagement among different worldviews (religious and secular) and cultural groups is highly important and inevitable. Worldviews are an important aspect of culture and countries that are multicultural, such as Canada for example, will have in its midst people of various religious and secular worldviews. Worldview teaching enhances global citizenship (Miedema & Bertram-Troost, 2015, Iliško, 2010).

It can also significantly enhance emotional, psychological and character development. Studies indicate that teaching about religious and secular worldviews increases knowledge and awareness of different religions, enriches understanding of others, and assists integrating into multicultural societies (Miller & McKenna, 2011). Not teaching
about religious worldviews neglects or ignores the worldview diversity of society (Chidester, 2003). Not least is to mention that learning about and from various worldviews in a healthy school environment can increase student knowledge and awareness of local, nation and global issues (Hargreaves, 1999). Could it be that a failure to teach about and learn from various worldviews, religious or secular, increases religious illiteracy locally and globally (Conroy, 2016)?

The research undertaken in this project sought to determine the knowledge level of students about worldviews, religion and spirituality, and about their attitudes towards religious education and religious people. Highlighting the relationship between knowledge and attitudes, specifically towards religion and religious people, is of particular interest for it may reveal a disquieting reciprocal relationship. To overcome such a relationship different strategies, techniques, and contemporary approaches can be taken to teaching about and learning from religious worldviews. Some are more suitable for multicultural and interreligious class settings and environments. This paper will suggest a particular worldview approach as one alternative.

The second research project investigates the effects of that approach. The main purpose of worldview education is to assist students to develop a broader and deeper understanding of self and others. In doing so it engages students in ontological, epistemological and existential questions about life, beliefs and values (Van der Kooij et al., 2016; Van der Kooij et al., 2013), using a Socratic approach, critical thinking and site visits as teaching tools. These experiences assist students to broaden and deepen their understanding about life, self, others, and environment (Valk, 2009b).

In general, the two research projects attempted to seek answers to the following questions. One, what is the level of knowledge about and attitudes towards religions or religious people of students who have little or no education about religious worldviews? Two, what are the primary sources of knowledge about religions or religious cultures for students who have had little or no education about religious worldviews in the public school system? Three, what does worldview education offer to students about their worldview and the worldviews of others? Four, what are the effects of religious and secular worldview education in regard of knowing self and others, and learning about and from different religious, spiritual and secular worldviews?

**Research Project #1**

The first (Research Project #1) was a pilot study and a quantitative survey of students at various stages of their undergraduate studies. The main objective was to determine the level of knowledge, awareness and attitudes of students towards religious and secular worldviews and this was done by means of a questionnaire. A total of 151 students from a number of different faculties at the University of New Brunswick responded to the questionnaire during the Winter and Summer terms of 2015, from March to June.

The questionnaire consisted of four parts. Part One focused on basic participant demographic information – gender, area of study, year of study, and province and country of origin (Table 1). Part Two sought information regarding religious activities and religious education. Part Three probed knowledge about different religions and secular worldviews: Judaism, Islam, Christianity, and Humanism. Part Four investigated participants’ thoughts and attitudes towards religions, religious activities and religious education. At the end of the questionnaire participants were asked to articulate their
thoughts and feelings regarding religion, spirituality and religious education. A statistical SPSS package was used to analyze the acquired data. Frequencies were used to determine participant tendencies, knowledge and attitudes about religions and religious education.

Table 1  
Participants’ Demographic Information

<table>
<thead>
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<tbody>
<tr>
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<tr>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>114</td>
<td>37</td>
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</table>

Findings: Research Project #1

Students have limited opportunity to study religion, other than as a philosophical curiosity, an historical entity or a sociological oddity. All too often it informs their education only peripherally. This is also the case for all too many students before they enter university. The study of religion as a subject area does not exist in the English speaking (Anglophone) public schools of the Province of New Brunswick. No Religious Studies Department exists at the University of New Brunswick (Valk, 2009a).

This was discovered in the Research Project #1, of which 91% of respondents were from the Province of New Brunswick, 60% were in their first year of study, 17% in their final year of study, 86% where from faculties defined by the humanities, and the majority were female (75%). Here are some findings that surfaced from the questionnaire.

- 82% took no courses about religion in high school.
- 70% took no courses while at UNB.
- 80% were involved in no activities that would increase their knowledge, awareness or understanding of religion.
- 74% do not attend church, mosque or synagogue at present; yet 87% did when they were younger.

The results of the above led to some of the following responses to questions posed:

- 61% named the Qur’an as the sacred book of Islam, but only 21% could name Ramadan as Islam’s month of fasting.
- 91% felt Islam discouraged violence yet 68% felt the Qur’an mandated women to cover their heads when in public (wear the hijab).
- 80% did not know on what day the Jewish Sabbath began.
- 67% identified Moses as leading the people of Israel out of slavery in Egypt but only 14% could identity Job as the Biblical figure who remained faithful to God despite great suffering.
- 25% (wrongly) identified the Great Commandment (“Do unto others …”) as one of the Ten Commandments.
- 64% identified Jewish people as chosen people of God and 76% knew they worshipped in a synagogue.
- 45% believed the Jews crucified Jesus and 22% believed he secretly married Mary Magdalene.
- 70% did not know Christianity is the world’s largest religion.
- 55% felt Humanism has features quite similar to other religions yet 25% felt that it has no distinct beliefs.
- 48% identified the religion of the Dalai Lama as Buddhism.
18% identified Isaiah as the book from which Martin Luther King Jr. got inspiration for his famous speech “I have a dream”; 66% thought it came from *Long Walk to Freedom*, a book written by Mandela 26 years after King’s death.

50% identified Abraham as the Biblical figure most commonly associated with the religions of Judaism, Christianity and Islam.

41% said they get most of their information about religion from the media, 33% from sacred scriptures and 34% from authority figures.

61% believe the Bible to be less important today than in the past.

12% learn about religion and spirituality from schools.

30% feel religious people reject the truths of science; 40% feel religion and science always conflict.

49% believe most things in the Bible are not true.

58% feel religion has been the cause of most war and conflict.

20% feel society would be better without religion; 40% believe religious people are often fanatical about their beliefs.

36% believe public discussions should not include religious beliefs and values.

36% believe schools need not teach about religion, yet 37% think schools should engage in spiritual rituals & meditations.

25% consider themselves to be religious persons while 65% consider themselves spiritual persons.

75% of students said they have no interest in religion; 43% said they have interest in spirituality.

So what are we to make of these findings? Though the study was a pilot project, perhaps a number of conclusions can be drawn at this preliminary stage. First, these findings appear to corroborate what Nord and Prothero earlier discovered: a general lack of religious interest, involvement and literacy abounds among students. In the Province of New Brunswick this seems also to parallel a general lack of concern or interest in religious matters on the part of educators and the educational system: what schools do not value or teach is quickly disseminated to students as not being important.

Two, most universities in the Western world were established by the churches, which also operated many primary and secondary schools. Beginning in the middle of the 19th Century, universities and schools started to become secular, and with disinterest in religious matters following suit. Studies reveal the impact of secular education on religious interest (Marsden & Longfield, 1992; Marsden, 1994; Valk, 1995; 2007). This appears to be born out in this research project.

Three, on the other hand, however, others note that students are indeed interested in religious/spiritual issues. But they also note that all too many faculty are deathly afraid to broach any of these issues (Astin & Astin, 2004). Some lament the university’s reluctance to address the bigger questions of life, long the domain of religious scholars and institutions, and thereby fail to nurture the questions students actually do have (Connor, 2005, 2006; Parks, 2011). This too surfaces from the research project.

It appears that we have a rather large disconnect. If schools and universities do not value teaching about, and learning from, religion or spirituality, students are inclined to exhibit little interest in it. If their main source of information about religious matters is the media, knowledge of it is disconcerting and attitude toward it appears low. Yet, there is an underlying yearning for the spiritual if not religious questions. Perhaps the real
issue is not that students are disinterested but whether or not they are taught about and learn from this subject area. This appears to be borne out by Research Project #2.

Research Project #2

A second study was conducted in the early months of 2015 at approximately the same time as the initial study. It involved a qualitative survey investigating the effectiveness of worldview education at Renaissance College, a leadership studies faculty at the University of New Brunswick, Canada. Rather than a questionnaire, individual interviews were conducted. Students who were interviewed had all attended Renaissance College, and had all taken a Worldviews Studies course in their first year of study as part of that program. Forty-two students and alumni of Renaissance College participated in the survey (Table 2). A semi-structured interview was used as the tool for collecting data for this research project (Barribal & While, 1994). Students and alumni were asked about the impact of worldview education on their thoughts and attitudes. Students were asked eight questions, including what changed for them after taking a Worldviews Studies course, what did they come to understand about themselves and their own worldview, what did they come to understand about others and their worldviews, and what was the most important benefit from taking worldview education. All interviews were recorded and transcribed with the consent of participants. Content analyses and NVIVO were used in the analyzing process. The researchers created main themes according to the data, without any judgement (Schutt, 2012).

Table 2
Participants’ Demographic Information

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<tr>
<td>27</td>
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<td>12</td>
<td>9</td>
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<td>11</td>
<td>10</td>
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Findings: Research Project #2

The overall finding of Research Project #2 is that worldview education generates in students positive thoughts and attitudes towards others, and no less religious and spiritual matters. Worldview education enhances greater knowledge and understanding of the beliefs and values of others. Participants agreed that worldview education gives them a better understanding about the nature of reality and beliefs. It assists them in eliminating or reducing their prejudices towards others and to attempt at mutual understanding. It also assists them in seeing the importance of community and the benefit of living in a culture of mutual respect.

The Worldview Studies course (“Worldviews, Religions and Cultures”) that was at the heart of this research project was unique in a number of ways. One, it was a course on worldviews, not just religion: it studied both religious and secular worldviews. Second, religious and secular students alike were included; it was not just for the religiously inclined or interested. Three, presentations and discussions in the course, but also elsewhere in the program, examined the impact or involvement of worldviews in a host of academic areas, including public policy. Students saw worldviews as dynamic, with each
debated vigorously in the public square. Four, a final assignment in the course required students to write about their own worldview, about their own beliefs and values, whether religious or secular. Five, a specific outcome of the course was Knowing Self and Others, one outcome among five others that are central to the program. What follows are some representative statements that emerged from the interviews, categorized under a number of broader headings:

**Questioning**

- Began to question and analyse more of their own ideas after exposure to numerous other worldviews and students
- Felt less naïve
  
  “And it really made me question everything. And maybe I still believe in that but you always have to be critical; you have to analyze it. So I think it makes me question more. I am not as naïve now.” (Participant 15)

  “It really helped me. I never questioned my worldview and I think being in this class allowed me to question my worldview to critically analyze it.” (Participant 24)

**Being Open**

- Became more open to other worldviews and other ways of life; it opened their minds;
- Realized their worldview was not the only one, nor necessarily the best; that everyone looks at the world in slightly different ways.

  “To be open minded and accepting of other worldviews I think will lead to a more peaceful world. I mean just believing your own worldview doesn’t make you right and someone else wrong.” (Participant 28)

  “I think it opens you up to different ways of life and gives you an opportunity to experience what other people experience. And I think it broadens your mind.” (Participant 21)

**Awareness**

- Sensed that worldview issues surface in many discussions.
- Gained awareness of other worldviews and how helpful that is in working with others.

  “Worldviews come out at some point during a daily life discussion and I think it is really important to learn to be understanding. And just to be aware of other peoples’ worldview and that they may be different then yours and that is ok.” (Participant 24)

  “Taking worldview education helps to open up your eyes and look beyond your own religion and look beyond the kind of the religion you’ve been brought up with and be able to look at others. And come to understand that you don’t necessarily agree with everyone. Having that awareness I think helps working with other people. Just being respectful of other people’s religion.” (Participant 12)
Understanding

- Gained a greater understanding of others & where they are coming from.
- Developed an appreciation of being able to understand others in order to expand own knowledge.

  “I developed I growing appreciation for being able to understand others. Not for the sake of trying to manipulate or change others but really for the sake of just expanding my own knowledge. I think that in coming to understand others your own worldview opens up.” (Participant 32)

  “It (worldview education) increased my understanding of other worldviews: where they are coming from and how they might be influenced.” (Participant 4)

Critical Thinking

- Developed critical thinking skills; became more critical about their own worldview, and developed more openness to the worldviews of others
- Gained a solid framework for their values.

  “I would say that I think much more critically about my own worldview, the way I see the world and why. I am much more open to different worldviews or different people who have different opinions because I recognize where they come from.” (Participant 14)

  “… critically analyzing your beliefs. I think it did provide me with a more solid framework for my own values.” (Participant 26)

Knowing Oneself

- Gained a greater sense of awareness of their own worldviews.
- Recognized that their views were dynamic rather than static.

  “It was a really great opportunity to do a lot of personal reflection. I might never have thought about my own worldview … so it really provided me a great opportunity to do some self-reflection and become a lot more mindful of the concept.” (Participant 20)

  “I think it did provide a more solid framework for my own values. And to realize that it is more than just even seeing the world one way for sure.” (Participant 24)

  “I realize I really don’t know what it is but it is a good start to have all these different ideas. I definitely don’t know exactly what my worldview is yet but at least now I have proper education. I started to think about it.” (Participant 15)

Knowing Others

- Gained a much broader view of others,
- Let go of stereotypes; recognized the benefit of seeing different perspectives.

  “I think worldview class allows us to have a better understanding of other worldviews and to interact with people from other perspectives who have different worldviews and be more understanding of them.” (Participant 14)
“Not just knowing about different worldviews but understanding them, appreciating them and seeing their place in the world. So not just know that they exist but really having an understanding of where they fit into the world and why there are different worldviews.” (Participant 33)

“I am more aware of and opened to other worldviews and more accepting of them. I also developed a new understanding for other peoples’ worldviews. And why this person thinks that way.” (Participant 24)

General Findings: Research Project #1 and #2

So what can one make of these findings from the two research projects? The first is to note that the two surveys were clearly different. One was more focused on student knowledge and awareness; the other more on student attitudes and awareness. One revealed that students had taken few religious studies courses; the other was premised on students having taken a Worldview Studies course. One was a questionnaire; the other involved interviews. As such, the surveys yielded different results.

Yet, the differences were also instructive. One, the questionnaire revealed a correlation between lack of exposure to and lack of awareness of various religions. The more educational institutions decrease study about religion the greater the decrease in student interest in them. Here, educational institutions impede global awareness.

Two, the opposite is also true. The more educational institutions expose students to the religiously and secularly diverse world in which they live, the more they become aware of it, the more they question their own ethnocentricity, even anthropocentricity, the more they come to understand the other, and the more they develop their critical thinking skills. Here, educational institutions enhance global awareness.

Three, teaching about religion enhances religious awareness, but this alleviates only part of the problem. Not all people are religious nor are they all interested in religion. However, exposing students to worldviews, both religious and secular, opens up new space. It is more inclusive, and communicates to students that everyone has a worldview; that everyone has beliefs and values of some kind (Sunshine, 2009). This levels the playing field, resists the dominance of a religious or secular worldview, and encourages pluralism – openness to a variety of worldviews.

Four, education is not simply the dissemination of information; there is also an experiential dimension. Students who have an opportunity to meet, become exposed to, and engage with the other, especially the religious other, become much more understanding and open to the other – bridges are built and walls torn down.

Worldview Framework Model

The Worldview Studies course on which Research Project #2 was premised uses a particular framework in its approach to studying various worldviews, religious and secular. It is an interdisciplinary approach that investigates worldviews to uncover breadth and depth. It understands worldviews as visions of life as well as ways of life, and hence impacts all areas of life.

This framework approach focuses on a number of areas. One, it looks at personal surroundings and circumstances that shape or influence a person’s beliefs and values.
Second, it focuses on metanarratives, teachings, ethics, rituals and more that shape individuals as well as cultures and traditions. Three, it raises ultimate/existential questions – meaning/purpose of life, nature of the human, responsibilities/obligations, distinguishing between right and wrong, a sense of a higher being, and life after this life – and looks at how each worldview might respond to them. Four, it asks ontological questions, so that there is recognition that how we define the human impacts how we treat human life. It asks epistemological questions, so there is recognition we all base our certainty on or in something that requires a leap of faith of some kind, since absolute certainty is beyond the human scope. Lastly, it asks about how our universal beliefs and values become particularized in our own contexts, acknowledging that while we may all affirm lofty principles, our particular circumstances often shape how those principles play out.

Table 1

<table>
<thead>
<tr>
<th>Framework #1</th>
<th>Personal / Group Identity</th>
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<tbody>
<tr>
<td>Personal</td>
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</tr>
<tr>
<td></td>
<td>Abilities/disabilities, interests, characteristics, desires</td>
</tr>
<tr>
<td></td>
<td>Learning: education: levels, schools</td>
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<tr>
<td>Social</td>
<td>Community – rural/ urban; religious/spiritual/secular identity</td>
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<tr>
<td></td>
<td>Socio-economic status: lower, middle, higher</td>
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<td>Cultural</td>
<td>Ethnicity, nationality, language</td>
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<td>Teachings, doctrines</td>
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<td>Ethical principles</td>
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<td>Rituals; symbols</td>
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<td>Community; social gatherings of the devotees</td>
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<tr>
<td>Ekstasis: experiences which strengthen this worldview</td>
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<td>Nature, purpose of human life</td>
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</tr>
<tr>
<td>Responsibilities/obligations</td>
<td></td>
</tr>
<tr>
<td>Values, discerning good/bad, right /wrong</td>
<td></td>
</tr>
<tr>
<td>Greater force, power, being in the universe?</td>
<td></td>
</tr>
<tr>
<td>Eschatology; Life after this life?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Framework #4</th>
<th>Ontological / Epistemological</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of being, reality</td>
<td></td>
</tr>
<tr>
<td>Physical: Ultimate nature of reality</td>
<td></td>
</tr>
<tr>
<td>Metaphysical: spiritual nature</td>
<td></td>
</tr>
<tr>
<td>Cosmology: Origin/future of the universe</td>
<td></td>
</tr>
<tr>
<td>Nature of our knowing: certainty of knowledge</td>
<td></td>
</tr>
<tr>
<td>Subjective knowledge: intuition, revelation, neural</td>
<td></td>
</tr>
<tr>
<td>Objective knowledge: reason, science, authority</td>
<td></td>
</tr>
<tr>
<td>Source, basis of knowledge</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Framework #5</th>
<th>Universal / Particular Beliefs, Values and Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit of justice: what is deemed to be just?</td>
<td></td>
</tr>
<tr>
<td>Dignity of all people: how is it expressed in everyday life?</td>
<td></td>
</tr>
<tr>
<td>Sacredness of life: is all of (human) life sacred?</td>
<td></td>
</tr>
<tr>
<td>Equality/diversity: is everyone given equal status?</td>
<td></td>
</tr>
<tr>
<td>Openness/tolerance: what is tolerated; what is not tolerated?</td>
<td></td>
</tr>
<tr>
<td>Environmental concern</td>
<td></td>
</tr>
</tbody>
</table>
The framework assumes no right or wrong answers, but challenges students to learn how other worldviews respond to the questions it poses. It then challenges students to think about, even investigate – broaden and deepen – their own responses. In this manner, the questions they ask of others often become their own. Further, though worldviews are personal, they are far from private: they play out in the public square. In a global world knowing self-necessitates knowing others.

Conclusion

As the larger global world comes ever closer to our own doorsteps, knowledge and awareness of the other becomes paramount. The world is becoming anything but secular (Berger, 1999; Benthall, 2008). Lack of knowledge and awareness, even disinterest, in religious and spiritual traditions, as well as secular perspectives, does not serve us well. Educational institutions must strive to eliminate ignorance of the religious and spiritual traditions that inhabit the globe.

It behoves schools and universities to engage the learner. Knowledge and awareness of various worldviews – religious and secular – must also develop critical thinking skills, the kind that opens up space for the self and the other, that leads to new insights as well as new questions.

It behoves educational institutions to regard worldviews, especially religious worldviews, as dynamic, and not static. Religious worldviews are not museum pieces that have little bearing in the modern world. Nor are those who embrace them to be considered delusional or that such worldviews poison everything; that is only to speak in ignorance (Dawkins, 2006; Hitchens, 2007). It does not mean that the shadow side of religious worldviews should be glossed over, nor that of secular worldviews (Froese, 2008). More beneficial, if not more balanced, however, would be to acknowledge that perhaps the global world might benefit from hearing more from religious worldview voices (Volf, 2015), just as it might from a greater understanding of secular worldviews.

References


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How Sustainable is Pupil Self-Esteem as an Educational Objective for Religious Minorities?

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The University of Warwick, the United Kingdom

Abstract

Although the importance of self-esteem in educational achievement is contested, it remains a significant touchstone of multicultural religious education. This study set out to establish differences in demographics and attitudes between high self-esteem and low self-esteem Buddhist teenagers who are a small religious minority in Britain. Low self-esteem teens expressed less well-being, more worry in relationships with their family and friends, low motivation in school, more supernatural beliefs, more introversion, felt Buddhism irrelevant and used the internet more. Self-esteem was not linked to religious values or environmental concern. Narrow focus on self-esteem as an educational aim risks the known weaknesses of multiculturalism that have since been overcome in pluralist education. The limited usefulness of the self-esteem concept does however reveal ways forward for teachers of minority education, introverts and sustainability.

Keywords: self-esteem, Buddhism, teenagers, psychological type, sustainability.

Introduction

When education is referred to as ‘sustainable’ rather than ‘for sustainability’, there is an expectation that it should give deeper attention to the process of education itself (Sterling, 2008, 63) and importance to the qualities of the learner – valuing, sustaining and realizing human potential and social wellbeing (Sterling, 2001, 22). Where consideration is given to the way people interact with their ecology, sustainable education must of necessity involve personality factors such as attitudes, awareness and feelings of responsibility (Chansomsak & Vale, 2008, 37). Such educational objectives leave teachers with the challenge of finding the sort of affirmation and empowerment to correspond with the objectives of sustainability – questions of implementation ultimately rooted in the sort of self-image the teacher desires to see in the pupil.

Self-esteem has been defined as an individual’s sense of self-worth, or the extent to which a person values, approves of, appreciates, prizes or likes him or herself (Blascovich & Tomaka, 1991) and has been related to many psychological domains including personality, behaviour, socioeconomic factors, health and clinical psychology. Self-esteem is a widely used construct both in popular and formal psychology (Baumeister et al.,

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Self-esteem is acknowledged for its role in allowing adolescents to cope and adjust to their situation (Coleman & Hendry, 1999, 56). The earliest research considered low self-esteem to be related to depression, anxiety and poor school performance (Rosenberg, 1965). More recent research on self-esteem has come to understand that, like self-concept, it is best construed as multi-dimensional – i.e. a young person may feel a stronger sense of self-worth in some situations than others.

In education, doubt has been cast over the reliability of links between the construct of self-esteem and school performance. Carl Roger’s psychology of always praising and never criticising (Rogers, 1961) has been found to devalue praise and confuse young people, contributing to narcissism and other forms of inflated self-esteem (Geller, 1982). Incongruously, research has shown high self-esteem is partly the result of good school performance. Efforts to boost the self-esteem of pupils have not been shown to improve academic performance and have sometimes proved counterproductive. The rest of the observable correlation may be attributable to the ‘Pygmalion Effect’ whereby the greater the expectation placed upon pupils, the better they perform (Rosenthal & Jacobson, 1968). Nonetheless, high self-esteem has been shown to be linked to persevering longer in the face of failure and resilience against stress and trauma. Children without any friends tended to have low self-esteem, but lack of friends may be result rather than the cause of having low self-esteem (Bishop & Inderbitzen, 1995). Low self-esteem has been shown to increase delinquency in affluent groups but boosted self-esteem resulted from delinquency in low socio-economic groups. Nonetheless, statistical links seem to exist between high self-esteem and happiness (Baumeister et al., 2003, 28) and between low self-esteem and eating disorders.

In spite of the mixed reception for the self-esteem construct in the general education literature, in multicultural education it remains one touchstone of educational outcomes – to the extent that Tiedt and Tiedt (1986, 23) claimed:

A major goal for educators ... is to help children develop positive self-concepts, to view themselves as worthwhile persons, and to perform accordingly ... this emphasis is especially crucial for children from minority groups.

Moreover, low self-esteem identifiers of marginalization or embarrassment can occur where there is no acknowledgment in school of a pupil’s cultural background (Nesbitt, 2004, 144).

The present study breaks new ground in moving away from consideration of self-esteem in the dominant culture of a society (e.g. Christians in a broadly Christian culture) to study self-esteem in Buddhists who form a tiny minority (0.4%) of the UK demographic. The rationale for this study was to find whether self-esteem is linked with particular attitudes or individual differences which overlap with those of sustainable education and to suggest ways to build aspects of self-esteem into education appropriate to Buddhists and sustainable education – concluding the likely effectiveness of the ‘uniqueness’ construct for minorities, if education is to be made truly inclusive.
Methodology

Sample

At the time of the 2011 census, there were 247,743 Buddhists in England and Wales, 22,715 of whom were teenagers. A survey was completed by a convenience sample of 417 self-identifying Buddhist teens attending temples in Britain or displaying an interest in Buddhist keywords\(^1\) on their Facebook page. The sample consisted of 225 male (54%) and 192 females (46%) aged between 13 and 20 (\(M=16.33, \text{SD}=2.34\)) and included Buddhists of Asian (52%), White (34%), Mixed (11%), Chinese (2%) and Black (1%) ethnicity. Some of these Buddhists had ethnic roots in the countries of Asia (so-called ‘heritage’ Buddhists) while others had converted to Buddhism independent of their family’s influence (so-called ‘convert’ Buddhists). The two sorts of Buddhists have styles of religious practice often as different from each other as they are from non-Buddhist religions – and therefore warrant separate examination. In this research, heritage-style Buddhists have been operationalized as including those who have self-identified as Asian-Indian, Asian-Pakistani, Asian-Bangladeshi, Any Other Asian and Chinese. Convert-style Buddhists have been operationalized as including Black-African, Black-Caribbean and White. In this sample, of those for whom religious style could be ascertained,\(^2\) 61% were heritage and 39% were convert.

Instrument

A compound survey with design details similar to that described by Thanissaro (2016), collected demographic data such as parental employment, social class, internet use, psychological type, neuroticism, sex, religious affiliation, age and ethnicity (hereafter collectively referred to as ‘individual differences’) and mapped attitudes. The survey questions central to this particular article was a section that measured self-esteem. Although there are several possible ways to assess self-esteem (Heatherton & Wyland, 2003), the Coopersmith measure was adopted since it is one of the self-esteem scales proven to perform best on factor analysis (Demo, 1985). The school short-form of the Self-Esteem Inventory [SEI] used in this study was developed to provide an alternative to the full 50-item SEI (Coopersmith, 1967; 1981) when time for completion is limited (see Hills et al., 2011). Devised for use specifically with children, the instrument assesses self-esteem in the contexts of school, parents and peers. The short-form school SEI consists of the 25-items with self-esteem scores calculated from the aggregate item scores with higher scores indicating greater self-esteem. Questions on the SEI relate to global self-

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\(^1\) The keywords included the words: arhat (Buddhism), Buddhism, Buddhism Theravada, Buddhist, Buddhist meditation, Burmese Buddhist temple, Dhammakaya meditation, Dhammakaya movement, Foundation for the Preservation of the Mahayana Tradition, FWBO, Gautama Buddha, interbeing, Karma Kagyu, Mahayana, merit (Buddhism), New Kadampa Tradition, Order of Interbeing, Samatha, Soka Gakkai International SGI, Theravada, Theravada Buddhism, Theravada Buddhist, Tibetan Buddhism, Triratna Buddhist Community, Vietnamese Family of Buddhism, Vipassana, Vipassana meditation, Zen, Thich Nhat Hanh, Buddhism in Bangladesh, Buddhahood, Diamond Way Buddhism, Buddha’s Dharma, Pure Land Buddhism, Buddha’s Light International Association.

\(^2\) Not possible where ethnicity was ‘mixed’.
Self-Esteem as an Educational Objective for Religious Minorities

Esteem, relations with parents and relationships with answers on a yes/no scale. Scores can theoretically range from a minimum score of zero to a maximum of 25. Zhang (1997) reported the internal reliability and construct validity of the school short-form SEI to be satisfactory. Previous research has employed the school short-form SEI in relation to physical activity (Delaney & Lee, 1995), effectiveness of counselling (Sapp, 1994) and medical health (Stark et al., 1990). In aspects of Christian religiosity, self-esteem using this measure has been related to God image (Francis, 2005; Robbins et al., 2007), frequency of prayer (Francis & Gibbs, 1996), religious behaviour and personality (Hills et al., 2006), religiosity (Jones & Francis, 1996) and religious rejection (Williams et al., 2006).

Procedure

Surveys were distributed in the period 2013–14 and were completed in the participants’ own time and for those unable to complete the survey immediately, a stamped addressed envelope was provided to facilitate return. For the online part of the survey a Qualtrics web-based survey software was hosted on the St Mary’s Centre website. Teenagers were directed to this survey by clicking sidebar advertising banners that appeared on their Facebook page if they belonged to a Buddhist interest group. The online sample was limited to those both resident in the UK and falling within the target age-range.

Participants were divided into two roughly equal groups – the ‘High SEI’ group who had above-average SEI scores and the ‘Low SEI’ group who had below-average scores. In practice, the mean SEI score for the Buddhist teenagers in this study was 15.667. Also, although the attitude questions in the survey used a five-point Likert scale, for ease of analysis the ‘agree strongly’ and ‘agree’ responses were recoded into one category styled ‘agree’. This has been compared statistically with a non-agree category consisting of scores for the remainder of responses from the ‘disagree strongly’, ‘disagree’ and ‘not certain’ categories. SPSS syntax was also used to calculate psychological type and SEI score. The resulting dataset was analyzed by means of the Chi-square cross-tabulation routines of the SPSS statistical package (SPSS Inc., 1988) for categorical variable data such as levels of attitude question agreement or the independent samples t-test routine for continuous variable data such as SEI scores.

Findings

Findings have been divided into two subsections. In the first part, self-esteem is compared with individual differences that include demographics and personality type. In the second part, links are explored between self-esteem and difference in agreement with attitude statements concerning well-being, family, school, friends and relationships, supernatural belief and Buddhism, for which significant differences were found between the high and low self-esteem groups.

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3 www.st-marys-centre.org.uk
4 Or the equivalent I for SSRT comparison of psychological type ratios.
Part 1: Individual Differences

Table 1

Summary of the Relation of Individual Differences to Self-esteem

<table>
<thead>
<tr>
<th>Linked with</th>
<th>High Self-Esteem</th>
<th>Low Self-Esteem</th>
<th>No link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents in full-time employment</td>
<td></td>
<td>Emotionality</td>
<td>Buddhist affiliation</td>
</tr>
<tr>
<td>Higher social class</td>
<td></td>
<td>Instability</td>
<td>Age</td>
</tr>
<tr>
<td>Less than 2 hours of internet use per day</td>
<td></td>
<td>Being female</td>
<td>Religious style</td>
</tr>
<tr>
<td>Extraversion</td>
<td></td>
<td></td>
<td>Temple attendance</td>
</tr>
<tr>
<td>Being a proper Buddhist</td>
<td></td>
<td></td>
<td>Meditation frequency</td>
</tr>
<tr>
<td>Being a religious person</td>
<td></td>
<td></td>
<td>Scripture reading</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bowing to parents</td>
</tr>
</tbody>
</table>

As shown in Table 1, the Buddhist teenagers’ responses to general demographic questions, some significant differences were found between high and low self-esteem participants. Significantly more high self-esteem teens had a parent in full-time employment\(^5\) rather than in part-time work, unemployed or retired. Significantly more high self-esteem teens did not belong to ‘working class’ families.\(^6\) Additionally, 72% of high self-esteem teens used the internet for no more than 2 hours per day.\(^7\) In terms of psychological type, a significantly higher proportion of high self-esteem teens had an extravert orientation (62%).\(^8\) Also almost twice as many high self-esteem teens had a for Dominant Feeling [Dt.F] preference.\(^9\) High self-esteem teens were also scored significantly less neurotic in terms of emotionality and stability.\(^10\) A comparison was made between Buddhist adolescents and a large sample of religiously-undifferentiated adolescents (RUA) from Year 9 and Year 10 pupils from Cornwall that used the same instrument and age-range (Hills et al., 2011). Buddhist adolescents as a whole were not significantly different in their self-esteem score from RUA\(^11\) – therefore being a religious minority, in itself, is not synonymous with low self-esteem. No heightened degree of participation in Buddhist practice, whether it be meditation,\(^12\) temple attendance,\(^13\) or scripture reading\(^14\) was found to have any significant link with self-esteem. Male Buddhist teens did however display a significantly higher self-esteem score than the females\(^15\) – but this

\(^5\) Father 79% [\(\chi^2=9.33\ p<.01\)]/ mother 55% [\(\chi^2=10.99\ p<.01\)].
\(^6\) By definition where the family breadwinner was employed in a manual labour: father 86% [\(\chi^2=13.45\ p<.01\)]/ mother 57% [\(\chi^2=20.22\ p<.001\)].
\(^7\) Which is significantly lower usage than for low self-esteem teens [\(\chi^2=7.95\ p<.01\)].
\(^8\) By comparison only 37% of low self-esteem teens were extravert which was significantly lower [\(\chi^2=14.15\ p<.001\)]. In general extraverts form only 52.3% of the normative UK type distribution (Kendall and McHenry 1998).
\(^9\) 29% as compared with only 17% in low self-esteem teens [\(I=0.59\ p<.05\)].
\(^10\) 90% of high self-esteem teens were significantly less emotional [\(\chi^2=45.07\ p<.001\)] and 79% were more stable [\(\chi^2=44.07\ p<.001\)] than low self-esteem teens.
\(^11\) \(M_{\text{budd}}=15.05, \ S.D. = 5.49; \ M_{\text{rua}}=15.03, \ S.D. = 5.33, \ t[3201]=-0.02, \ NS.\)
\(^12\) \(M_{\text{meditation+}}=15.30, \ S.D. = 5.29; \ M_{\text{meditation-}}=15.42, \ S.D. = 5.30, \ t[330]=-0.18, \ NS.\)
\(^13\) \(M_{\text{temple+}}=15.15, \ S.D. = 5.39; \ M_{\text{temple-}}=15.56, \ S.D. = 5.16, \ t[330]=-0.70, \ NS.\)
\(^14\) \(M_{\text{scripture+}}=15.20, \ S.D. = 5.52; \ M_{\text{scripture-}}=15.46, \ S.D. = 5.11, \ t[329]=-0.44, \ NS.\)
\(^15\) \(M_{\text{male}}=16.13, \ S.D. = 5.22; \ M_{\text{female}}=14.30, \ S.D. = 5.21, \ t[330]=3.18, \ p<.01.\)
difference is to be expected in all measures of self-esteem and was also shown to be the case in the religiously undifferentiated comparison sample. Buddhists in their early teens were not significantly different in their self-esteem score than those in their late teens.\(^{16}\) Heritage Buddhist teens were not significantly different in their self-esteem score than convert Buddhist teens,\(^{17}\) and degree of affective Buddhist religiosity as measured by TSAB-R did not correlate significantly with self-esteem.\(^{18}\)

**Part 2: Attitudes Statistically Linked with Self-Esteem**

For clarity, in the remainder of findings subsections, significant differences in response to attitude question items between high and low self-esteem teens will be displayed as tables.

**Well-being**

Table 2

<table>
<thead>
<tr>
<th>Degree of Agreement on Well-Being Statements for Low and High Self-Esteem Teens</th>
<th>% agree for</th>
<th>(\chi^2)</th>
<th>(p&lt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have sometimes considered taking my own life</td>
<td>40/13</td>
<td>16.0</td>
<td>.001</td>
</tr>
<tr>
<td>I feel I am not worth much as a person</td>
<td>20/6</td>
<td>8.8</td>
<td>.01</td>
</tr>
<tr>
<td>I would not describe myself as happy</td>
<td>25/6</td>
<td>13.4</td>
<td>.001</td>
</tr>
<tr>
<td>I often feel depressed</td>
<td>53/11</td>
<td>35.8</td>
<td>.001</td>
</tr>
<tr>
<td>There is nothing I can do to help solve the world’s problems</td>
<td>14/7</td>
<td>4.5</td>
<td>.05</td>
</tr>
<tr>
<td>I am concerned about the risk of pollution to the environment</td>
<td>78/78</td>
<td>0.0</td>
<td>NS</td>
</tr>
<tr>
<td>I am a unique individual</td>
<td>71/87</td>
<td>6.5</td>
<td>.05</td>
</tr>
<tr>
<td>I feel my life has a sense of purpose</td>
<td>61/76</td>
<td>4.2</td>
<td>.05</td>
</tr>
<tr>
<td>I find life really worth living</td>
<td>71/89</td>
<td>8.9</td>
<td>.01</td>
</tr>
<tr>
<td>The wellbeing of my fellow students/workers is important to me</td>
<td>75/88</td>
<td>5.0</td>
<td>.05</td>
</tr>
</tbody>
</table>

As shown in Table 2, for well-being-related statements, as might be expected, those of lower self-esteem were significantly more likely to consider taking their own life, feel worthless as a person, unhappy, depressed and powerless in the face of the world’s problems. Self-esteem was not significantly linked however with concern for the environment. Those of higher self-esteem were significantly more likely to see themselves as a unique individual, with a sense of purpose in life and find life worth living. Those of high self-esteem were significantly more likely to lend importance to the wellbeing of their fellow students or workers.

\(^{16}\) \(M_{early}=14.91, \text{ S.D.} = 5.37; M_{late}=15.93, \text{ S.D.} = 5.12, t[330]=-1.74, \text{ NS.}\)

\(^{17}\) \(M_{hbt}=15.53, \text{ S.D.} = 5.17; M_{cbt}=15.13, \text{ S.D.} = 5.41, t[292]=0.60, \text{ NS.}\)

\(^{18}\) Pearson \(r[330]=0.19, \text{ NS.}\)
Family

Table 3
Degree of Agreement on Family Statements for Low and High Self-Esteem Teens

|                                   | % agree for | \( \chi^2 \) | p<  
|-----------------------------------|-------------|---------------|-------
| Low SEI  | High SEI    |               |       
| My family disapproves of what I do with my spare time | 46  | 26  | 7.1  | .01  
| Adults do not listen to young people | 51  | 32  | 6.3  | .05  
| Adults do not respect young people | 37  | 23  | 4.2  | .05  
| I find it helpful to talk about my problems with my mum | 54  | 75  | 8.0  | .01  
| I find it helpful to talk about my problems with my dad | 41  | 63  | 8.2  | .01  
| I get on well with my family | 72  | 90  | 9.2  | .01  
| My family are supportive of me | 88  | 98  | 6.6  | .05  

As shown in Table 3, in their family life, those of low self-esteem were significantly more likely to feel their family disapproved of what they did in their spare time and felt they were not listened to or respected by adults. Those of higher self-esteem were significantly more likely to find it helpful to talk about their problems with their parents, get on well with their family and find their family supportive.

School

Table 4
Degree of Agreement on School Statements For Low and High Self-Esteem Teens

|                                   | % agree for | \( \chi^2 \) | p<  
|-----------------------------------|-------------|---------------|-------
| Low SEI  | High SEI    |               |       
| I am worried about my exams at school | 83  | 60  | 10.9  | .01  
| I often worry about my school work | 69  | 50  | 5.9  | .05  
| School is boring | 30  | 11  | 9.9  | .01  
| I am happy in my school | 71  | 90  | 10.2  | .01  
| I like the people I go to school with | 72  | 92  | 12.2  | .001  
| My school is helping me prepare for life | 70  | 84  | 4.6  | .05  

As shown in Table 4, for attitudes concerning school, those of low self-esteem were significantly more likely to worry about exams and schoolwork and find school boring. At school, those of higher self-esteem were significantly more likely to be happy, like the people they went to school with and feel school was preparing them for life.

Friends and Relationships

As shown in Table 5, for friendship-related statements, those of low self-esteem were significantly more likely to feel pressurized by friends to do things they didn’t want to do and were more likely to (restrict themselves to) have exclusively Buddhist friends. Those of high self-esteem were significantly more likely to find it helpful to talk about their problems with their friends and want to live close to them. As shown in relationships, those of low self-esteem were significantly more likely to worry about how they got on with others, about their sex-life and their attractiveness to the opposite sex.
Table 5
Degree of Agreement on Friends and Relationships Statements for Low and High Self-Esteem Teens

<table>
<thead>
<tr>
<th>% agree for</th>
<th>( \chi^2 )</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SEI</td>
<td>High SEI</td>
<td></td>
</tr>
<tr>
<td>Sometimes I feel pressured by my friends to do things</td>
<td>35</td>
<td>21</td>
</tr>
<tr>
<td>I don’t want to do</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of my friends are Buddhist</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>I find it helpful to talk about my problems with my friends</td>
<td>64</td>
<td>82</td>
</tr>
<tr>
<td>I like to live close to my close friends</td>
<td>54</td>
<td>74</td>
</tr>
<tr>
<td>I am worried about how I get on with other people</td>
<td>51</td>
<td>24</td>
</tr>
<tr>
<td>I am worried about my sex life</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>I am worried about my attractiveness to the opposite sex</td>
<td>46</td>
<td>28</td>
</tr>
</tbody>
</table>

Supernatural Belief

Table 6
Degree of Agreement on Statements Related to Supernatural Beliefs for Low and High Self-Esteem Teens

<table>
<thead>
<tr>
<th>% agree for</th>
<th>( \chi^2 )</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SEI</td>
<td>High SEI</td>
<td></td>
</tr>
<tr>
<td>I believe in the Devil (Mara)</td>
<td>36</td>
<td>18</td>
</tr>
<tr>
<td>I believe in ghosts</td>
<td>57</td>
<td>26</td>
</tr>
<tr>
<td>I believe it is possible to contact the spirits of the dead</td>
<td>36</td>
<td>18</td>
</tr>
<tr>
<td>I believe in angels</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>I believe in black magic</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>I am frightened of going into a church alone</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>I am frightened of going into a temple alone</td>
<td>28</td>
<td>7</td>
</tr>
</tbody>
</table>

As shown in Table 6, in terms of supernatural belief, low self-esteem teens were significantly more likely to believe in the devil, ghosts, the possibility of contacting spirits of the dead, angels, black magic and be frightened to go into a church or temple alone.

Buddhism

Table 7
Degree of Agreement on Buddhist Statements for Low and High Self-Esteem Teens

<table>
<thead>
<tr>
<th>% agree for</th>
<th>( \chi^2 )</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SEI</td>
<td>High SEI</td>
<td></td>
</tr>
<tr>
<td>Buddhist teachings seem irrelevant to life today</td>
<td>23</td>
<td>11</td>
</tr>
<tr>
<td>The temple community seems irrelevant to life today</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>I consider myself a proper Buddhist</td>
<td>37</td>
<td>58</td>
</tr>
<tr>
<td>I am a religious person</td>
<td>47</td>
<td>66</td>
</tr>
</tbody>
</table>
As shown in Table 7, for Buddhist attitudes, those of low self-esteem were significantly more likely to find Buddhist teachings and the temple community irrelevant. Those of higher self-esteem, by contrast, were significantly more likely to consider themselves a proper Buddhist and a religious person.

Discussion

Individual Differences and Attitudes Linked with High Self-Esteem

This study found that high self-esteem teens were found to express significantly more sense of well-being, had more positive engagement with their family and friends, were happier and more purposeful at school and felt more genuinely Buddhist. Consistent with the finding of Francis and Jones (1996) among 16 year olds, it was found that higher levels of self-esteem were linked with higher classes of socio-economic group – perhaps not surprisingly, since young people in these socio-economic groups probably have greater opportunities in their lives. Similarly, those of higher self-esteem had significantly higher levels of extraversion and parental employment, but lower rates of internet use.

Individual Differences and Attitudes Linked with Low Self-Esteem

By contrast, low self-esteem teens expressed significantly less sense of well-being, were more worried in relationships, had less positive engagement with their family, were worried and under-motivated in school and felt pressurized in friendships, held more supernatural beliefs, felt Buddhism irrelevant and used the internet more. Female Buddhist teens scored significantly lower in terms of self-esteem than male Buddhist teens – but no more so than has been documented for males and females of undifferentiated religion. Those of lower self-esteem had significantly higher levels of introversion and more instability and emotionality. It is likely that those of low self-esteem associated mainly with their in-group mainly because introverts find it easier to ‘open-up’ to those they are familiar with.

Individual Differences and Attitudes Independent of Self-Esteem

Age and religious style, Buddhist affiliation, temple attendance, meditation frequency, scripture reading, bowing to parents and concern for the environment did not prove to be factors where self-esteem was statistically linked – echoing the findings of Francis and Gibbs (1996) for Christian children. Maltby and colleagues (1999) did however find, that high self-esteem was associated with personal prayer and negatively related to extrinsic forms of religion and church attendance. It is encouraging that those of this religious minority seemed to be on an equal self-esteem footing with other children in school – as this commends the effectiveness of the British system of pluralist education.
Sustainability and Localized Education Objectives

The sustainability of education can be related to the appropriateness with which educational objectives are aligned with local culture. Hoffman (1996) recommended reform in education concerning teaching and learning about culture, pedagogy and critical perspectives, since self-esteem is not as highly regarded in all cultures. Sustainable education needs to understand localized concepts of self and relationship to allow these to be leveraged to sustainable ends. Accordingly, the limitations of self-esteem for sustainable education, especially for cultural-religious minorities and introverts is elaborated below with suggestions for compensatory interventions by teachers.

Self-Esteem and Cultural-Religious Minorities

It is obvious from the findings of this study, that even though Buddhists are a tiny religious minority in Britain, their self-esteem is not significantly different from peers in the mainstream population – so being a minority doesn’t automatically predict low self-esteem. Self-esteem seemed to be related to religious affiliation rather than aspects of religious participation, since degree of religious participation, whether measured in terms of temple attendance, frequency of meditation, scripture reading or bowing to parents in respect, had no significant link with self-esteem. Self-esteem might therefore be considered the sign of a boundary marker or a sense of ‘uniqueness’. Such in-group pride is a double-edged sword often encouraging sectarianism at the expense of acceptance of difference or holistic education initiatives in general (Badjanova & Iliško, 2015, 134). Furthermore, cultural and ethnic minority groups may have their own paradigms for viewing self and may not be swayed by any multicultural educator’s emphasis on how good it feels to be unique. This understanding of the limitations of self-esteem lies at the heart of the distinction between ‘pluralist’ rather than ‘multicultural’ education where pluralism implies knowing one’s own identity while having a respectful awareness of others (e.g. de Souza, 2016, 134), rather than the multiculturalist approach of each in-group being merely proud of its own identity. Emphasis on ‘responsibility’ and awareness of one’s identity in relation to that of others, rather than pride in personal uniqueness would be a more sustainable touchstone of pluralist education.

Self-Esteem and Pupil Psychological Type

Self-esteem may be a construct that tells us more about extraversion than about subjective quality of life. Many aspects of extraversion are also reflected in aspects of high-self esteem behaviour whether it be talking about problems with parents or friends, relevance of religious community or liking the people they go to school with. To put too much emphasis on self-esteem would be to ignore the plight of introverts in education. Following the Jungian rather than the Eysenckian interpretation, being extravert is not superior to being introvert – simply a different manner of being. Thus although low self-esteem might be considered problematic, it should not be confounded with introverted Psychological Type. Education has a role to encourage socialization and collectivism, but teachers must consider the extent to which introverts need to be encouraged to change. The introvert risk of isolation and dwelling in an inner world of supernatural beliefs should stimulate teachers to provide avenues of creative expression through
writing or drama to allow those pupils to become aware of their own worldview – and this way make the school experience meaningful to the full range of psychological types. The school system generally does not facilitate introvert approaches to study, but if teachers are aware of the jarring experience introverts have of school, models can be provided of introvert way of ‘doing’ leadership (Cain, 2012), such as appreciating pupil self-reliance. Educational activities can be designed to give a balance of activities such as time for silence in schools, which encourages an amenable input by introverts, with correspondingly less emphasis on discussion, group activities and verbal expression (Lees, 2012). Such a shift would help boost well-being of introverts and make school experience more meaningful. Rather than forcing introvert pupils to be something they are not, they can be encouraged to ‘wear’ their introversion more comfortably. If raising self-esteem of pupils is to remain one of the main educational objectives, ways to boost success for introvert teens should mean more opportunity for quiet reflection, which would improve academic performance of low-esteem introvert teens, thereby indirectly boosting their self-esteem.

Self-Esteem and Sustainability

At a time when more than ever, a younger generation needs to become aware of the collective responsibility for the planet, rampant individualism cannot be considered sustainable. Where child-centred education emphasizes self-esteem, particularly inflated self-esteem, it is one reason why formal education remains part of the problem of unsustainability rather than a solution (Sterling, 2008, 64). At the same time, this study concurs with the recommendation of Chansomsak and Vale (2008, 46) that Nature should not be exploited for establishing a self-image based on wealth. The solution to the problem lies, for the most part, in reinventing self-image to something more sustainable. If pupils can be trained, instead of basking in self-esteem, to expand their concerns to include others, their self-interested behaviours will be changed to actions in the interest of all.

Conclusion

Although the main aim of the Buddhist approach to education is not to promote sustainability, Buddhists certainly focus on relationships. Self-esteem, especially inflated self-esteem however, is not thought a desirable end-product of nurture in Buddhism, where humility, sensitivity to aspects of personal suffering and collectivist values are still strongly encouraged. The problem with self-esteem is the way in which it encourages boundary demarcation that compromises the closeness of relationship between self and other. Since almost all social and ecological problems are caused by dysfunctional relationships between humans and the environment, looking beyond the self-esteem construct using localized knowledge such as that of the Buddhists, has much to offer the sustainable education discourse.

Suggestions for Further Research

Although this quantitative study has highlighted some of the limits of the self-esteem concept as a sustainable objective in education, it is not clear whether Buddhists are a special case, and it would be instructive to survey other religious minorities using the same methods. It would also be helpful to compare sustainable attitudes such as concern for the environment between schools putting more or less emphasis on self-esteem or extravert-orientated learning activities.

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Evaluating Lifewide Learning Habits of Academicians for Sustainable Development

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Abstract

In today’s higher education institutions in which sustainable development has been highly emphasized, individuals have changed the understanding of graduates of higher education; as such universities have emerged into a reconstruction period. In such a process, universities have been in need of academicians who are well developed in both personal and professional domains. The concept of Lifewide learning, which is an important sustainable development tool, has underlined the fact that people should graduate as wholly-developed people to fulfill the needs of future societies, which releases the idea that academicians are to be role models for students. This study reflects on the research designed to develop and test an instrument that could identify the component of an academican’s Lifewide learning habits. Because of the complex nature of the Lifewide learning, considerable attempts were made in order to handle the process of classifying the cognitive, affective, social, technical and cultural domains related to academicians working in faculties of education. The developed instrument was trialled with 50 academicians, and the data was subjected to an explanatory factor analysis, allowing the identification of 6 sub-dimensions of Lifewide learning. These dimensions appeared to be capable of differentiating between problem-solving, professional habits, cultural interaction, leadership, care-based habits and leisure habits of academicians. The final version of the scale was applied to 211 academicians from faculties of education at 30 universities via “Google Drive”, and Lifewide habits of related people were assessed regarding their gender, title and department. Depending on the collected data, Lifewide learning habits of academicians were discussed, and some suggestions were proposed to support their professional and personal development.

Keywords: lifewide learning, professional development, personal development
Introduction

The Recent Changes in Higher Education Institutions

Recently, the concept of sustainability has gained a lot of importance in higher education institutions. In order to educate individuals in a future-oriented way, higher education institutions are supposed to fulfill their facilities for learning and the life itself. Today it has been difficult to pursue individuals’ preferences, choices and expectations as the modern world has made them confront with various challenges never before encountered. As Barth and the others (2007) stated higher education for sustainable development aims at enabling people not only acquire and generate knowledge, but also to reflect on future effects.

Globalization and industrialization have led universities and other educational institutions to internalize educational reforms in the twenty-first century. Such institutions have charged a lot of responsibilities including enhancing awareness, competencies, skills, values, etc. These inevitable trends have made universities transform themselves in order to keep track of new ideas and developments in social, economic, cultural, etc. dimensions of life in the liquid age. As Altbach and Knight (2010) pointed out, international activities of universities dramatically expanded in volume, scope, and complexity during the past two decades. These activities range from study-abroad programs, allowing students to learn about other culture, to providing access to higher education in countries where local institutions cannot meet the demand. Furthermore, other activities such as skills of students, enhancing foreign language programs and providing cross-cultural understanding have been emphasized in the last two decades. In addition to this, as Ilisko, Skrinda and Mičule stated, schools need to equip learners with the skills and values needed to cope with present and future demands. Universities need to prepare students to play a significant role in society. Each student lives within the interconnected framework of political, cultural, economic and ecological dimensions that influence them in significant ways.

In the 21st century, to train individuals in various domains is significant to prepare them as wholly-developed citizens for future societies. In Europe some outstanding reforms have been come out by Bologna Process that has been going on over a decade. The process can be seen as an educational restructuring process that is outlined a European level to be implemented in the nations of Europe and the other nation’s part of the process (Fejes, 2006, p: 203). In the face of continuously changing circumstances it is possible to outline a lot of policies and agreed implications that have well known impact on Higher Education institutions. Among the agreed implications there are a lot of reforms to help achieve the “Europe of Knowledge” which can be seen the greatest dream of Bologna Process. Moreover lifelong learning is constructed as a central part of this knowledge-based society and as a way to create the employable citizen, which is a way to compete with the surrounding world. It is also argued that a Europe of lifelong learning will empower citizens to become more mobilized, and to make Europe more democratic, inclusive and tolerant (Fejes, 2006). There have been exhaustive attempts of higher education institutions related to lifelong learning.
Lifewide Learning and Sustainability

Nowadays the work of universities is getting hard and complex, as they are expected to achieve many different goals in various fields of the life. The most significant dilemma in today’s societies is to handle constantly changing status of information and technology, which makes it compulsory to keep track of new ideas and developments in all domains. As Baumann (2006) stated universities have become part of a ‘liquid life’. Instead of being enclosed and inner-directed, they are today becoming outer-directed and liquid. Accordingly, life-long learning competencies have been indispensable principles for higher education.

Life-long learning can be simply defined as “all learning activities taken throughout life” (European Commission 2002:9). While life-long learning describes what an individual learns throughout the entire lifespan, Lifewide learning represents the fact that learning can take place in all fields of the life such as work, family, travelling, volunteering, etc. Lifewide learning concept is not totally novel (Jackson, 2011; Clark, 2005). Dewey argued that to provide education that was effective in preparing people for life we must relate education much more closely to life. He also argued that before educators designed educational experiences they must first understand the nature of human experience. Armed with this theory of the role of experience in learning, educators could set about organizing subject matter in a way that took account of students’ past experiences and provided them with new experiences to stimulate their development, which can be seen in philosophical underpinning for Lifewide learning and education (Jackson, 2011).

It is operational to set time, place and people in the concept of Lifewide learning. In other words, the coordination of time, place and people can be adapted for individuals, their needs, interests, etc. As Yip (2002) stated Lifewide learning is a breakthrough of the limitations, so that it enables students to have a special feeling and motivation. There are various scopes for students to enhance their learning without any borders for time, place and people.

Today higher education institutions are expected to present a leading education to provide students with whole development. Lifewide learning is directly related to personal development of individuals, which is a desirable feature for today’s graduates. Furthermore, it enables people to improve themselves cognitively, socially and personally. Lifewide education makes it possible to train graduates well developed both in their own courses and in different ways of life – sports, art, travel, parental issues, etc. Students themselves have become “learning nomads”, increasingly inhabiting all kinds of social and economic situations that afford different kinds of learning (Barnett, 2011). In a rapidly changing world, it is important for students to have a lot of experience and knowledge in various parts of life. Hence, universities ought to provide their students with effective settings in various scopes. An undergraduate student should reach a lot different places to develop herself in various fields. Barnett (2011, p. 26) stated some learning activities and processes a student may be involved such as within a course-accredited or not; voluntary courses, courses unrelated to students’ own fields. Therefore, it has been so significant for academicians to be good role-models for their students attending universities. In order to enhance their point of view in every aspect of the life, they should lead their path in various domains.

The concept of sustainable development and Lifewide learning have lots of things in common. Educators have started to review learning-teaching practices, assessment and evaluation techniques used up-to this era. To fulfill the needs of future societies
various aspects have been accepted as crucial such as creativity, critical thinking, decision-making, problem-solving, using information and communication technologies effectively, conflict-management. All such concepts have been emphasized and aimed by the understanding of sustainable development and Lifewide learning. They both have combined academical, social, cultural, etc. competencies to enhance individuals’ life capabilities for future. Barth and the others (2007) stated eight key competencies for sustainable development:

- competency in foresighted thinking,
- competency in interdisciplinary work,
- competency in cosmopolitan perception, transcultural understanding and cooperation,
- competency in participatory skills,
- competency in planning and implementation,
- capacity for empathy, compassion and solidarity,
- competency in self-motivation and in motivating others,
- distanced reflection on individual and cultural models (Hann, 2006).

Lifewide learning habits include a lot of features enabling people to improve themselves in various domains of life. The competencies cited above serve also as Lifewide learning habits which are supposed to be possessed by graduates of today’s universities.

Aim of the Study

The aim of this research is to develop a reliable scale for Lifewide learning. It has been also aimed to identify the Lifewide learning habits of academicians working at the faculties of education in Turkey.

Method

This study is built with a structure where quantitative analysis method is used. Selected by random sampling method, the investigated statistical population of this study is 211 academicians working at faculties of education.

The Development Process of the Scale

As the first step in the design of an instrument is to identify the potential content of habits and factors, an initial literature review was conducted in order to identify the most likely components on the basis of existing research-Lifewide learning habits. The components of Lifewide learning identified in other studies (Jackson, 2011) highlight the complex notion of the task of the research project. Lifewide learning compromises various dimensions ranging from cognitive, physiological, affective, social, technical and cultural domains, which makes the research interdisciplinary in its scope. Existing literature indicated that there at least six broad categories that can be identified as making a substantial contribution to Lifewide learning. The identified categories seem to be inter-related, trans-disciplinary and cumulative.

In each component an initial list of Lifewide learning was generated by reviewing the literature from multiple sources, and it was formed as whole 5-point Likert-type scale. In order to determine the accuracy of the statements six educationalists controlled
the scale and expressed their ideas about it depending on the theoretical framework outlined in the literature and scale development principles. Even though there is a range of studies which have identified variables that have an impact on life-long learning, few attempts have been made to explore the notions of the Lifewide learning. Therefore, this study has made an attempt to contribute from a certain perspective to identify variables and relationships between them. It also shows that the components mentioned above are likely to influence each other in a dynamic way.

It was firstly necessary to conceptualize and restrict the broad notion of Lifewide learning concept so as to develop a holistic view of it. The term Lifewide learning is a concept that requires a careful definition as it includes a lot of formal and informal discourse, which has been a challenging situation for the identification of the components of the scale. As Clark (2005, p. 54) stated Lifewide learning generally refers to the experiences that take place beyond the classroom. This interpretation of Lifewide learning is about experiential learning in authentic environments. As such, it mainly concentrates on the formal and non-formal dimensions, rather than on the informal.

The draft instrument was piloted with a cohort of 50 academicians working at the faculty of education. The respondents included academicians from different departments with various titles. Following piloting, a factor analysis was identified as an appropriate means of analysing the responses to the scale as it makes it possible to diminish a large set of items to a smaller set of components. Then it would be suitable that these factors could be used to determine subscales of items for the assessment of those components. In order to get a more coherent data set, the second phase of the study was undergone with a cohort of 211 academicians. Then it was possible to eliminate items that were proved to be unclear for serving the purpose of the scale. While the KMO value of the scale was found as .85, the result of Barlett’s test was found significant (.000). After Varimax rotation carried over, the scale was reduced to 33 items which emerged as statistically significant from the factor analysis. Moreover, a small number of others were eliminated as they were found to have statistical usefulness. The total experienced variance of the scale in-question was calculated as 55,915%, which is a valid value in most of the social studies. Furthermore, the rotated factor matrix indicated that the scale has 6 sub-scales, as it can be seen in Table 1.

Table 1
Rotated Factor Matrix of the Developed Scale

<table>
<thead>
<tr>
<th>Items</th>
<th>Problem-Solving</th>
<th>Professional Habits</th>
<th>Cultural Interaction</th>
<th>Leadership</th>
<th>Care-Based</th>
<th>Leisure Habits</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>.877</td>
<td>.062</td>
<td>.103</td>
<td>.096</td>
<td>.164</td>
<td>.069</td>
</tr>
<tr>
<td>39</td>
<td>.864</td>
<td>.104</td>
<td>.162</td>
<td>.160</td>
<td>.152</td>
<td>.050</td>
</tr>
<tr>
<td>40</td>
<td>.832</td>
<td>.250</td>
<td>.078</td>
<td>.121</td>
<td>.159</td>
<td>.058</td>
</tr>
<tr>
<td>41</td>
<td>.745</td>
<td>.152</td>
<td>.092</td>
<td>.185</td>
<td>.202</td>
<td>-.044</td>
</tr>
<tr>
<td>42</td>
<td>.738</td>
<td>.194</td>
<td>.024</td>
<td>.012</td>
<td>-.025</td>
<td>-.002</td>
</tr>
<tr>
<td>43</td>
<td>.516</td>
<td>.214</td>
<td>.253</td>
<td>.241</td>
<td>-.040</td>
<td>-.013</td>
</tr>
<tr>
<td>17</td>
<td>.456</td>
<td>.318</td>
<td>.096</td>
<td>.196</td>
<td>.292</td>
<td>.197</td>
</tr>
<tr>
<td>14</td>
<td>.227</td>
<td>.719</td>
<td>.055</td>
<td>.084</td>
<td>.106</td>
<td>.231</td>
</tr>
<tr>
<td>1</td>
<td>.147</td>
<td>.687</td>
<td>.076</td>
<td>.216</td>
<td>-.083</td>
<td>-.299</td>
</tr>
<tr>
<td>12</td>
<td>.144</td>
<td>.652</td>
<td>-.040</td>
<td>.156</td>
<td>.109</td>
<td>.095</td>
</tr>
</tbody>
</table>

Sequel to Table 1 see on the next page.
The successive statistical operations made it clear to identify six key components of Lifewide learning. It should be emphasized that Lifewide learning is a broad and developing concept, which makes it difficult to set certain borders between its main scopes. However, in this study was possible to determine six basic components by detailed scrutiny of items on six factors. Regarding to the statistical analysis and item scrutiny, the six components were subsequently titled as “Problem-Solving Habits”, “Cultural Interaction Habits”, “Leadership Habits”, “Care-Based Habits”, “Professional Habits” and “Leisure Habits”.

Problem-Solving Habits: It refers to the habits applied by academicians when they have a problem or a conflict.
Cultural Interaction Habits: Inter-cultural habits belongs to this group.
Leadership Habits: It refers to the activities related to leadershipship habits of academicians.
Care-Based Habits: It deals with activities related to caring oneself and others.
Professional Habits: It is concerned with job-related facilities.
Leisure Habits: It includes social, sports activities.

In order to determine the reliability of the developed scale, Cronbach alpha internal consistency was calculated as .88. Another analysis that was conducted for determining
the reliability of the scale based on the difference between top and bottom groups of 27%. Therefore, it was supposed to remove the items that were not significant according to t value scores. However, no items were identified with such a value.

Participant Characteristics

In this study, the developed scale was conducted to 211 academicians working at the Faculties of Education in order to identify the Lifewide learning habits of lecturers and to determine the effects of some variables on such habits (gender, department, title). The population of the research consisted of 102 females and 109 males working at the departments of Turkish Language Teaching, Science Education, Math Education, Primary Education, English Language Teaching, Preschool Education, Educational Sciences, etc. The scale was sent to the participants via Google Drive. The Lifewide learning habits of participants from faculties of education at 30 universities were assessed regarding their gender, title and department.

Results

The analysis of the present study is carried out with the statistical program “Spss 16.0 for Windows”. For the examination of the data, “descriptive analysis” method was used, and the data obtained in this study was analyzed by using Kolmogorov-Smirnov, Levene’s test of homogeneity, independent t-test and one-way ANOVA. The data obtained accordingly were summarized and interpreted.

Table 2 indicates the minimum and maximum scores, means and standard deviations academicians got for the whole scale and its dimensions.

<table>
<thead>
<tr>
<th>The Whole Scale</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>( \bar{x} )</th>
<th>Sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dimension: Problem-Solving Habits</td>
<td>211</td>
<td>16,00</td>
<td>35,00</td>
<td>30,55</td>
<td>3,21</td>
</tr>
<tr>
<td>2. Dimension: Professional Development</td>
<td>211</td>
<td>18,00</td>
<td>40,00</td>
<td>34,76</td>
<td>3,75</td>
</tr>
<tr>
<td>3. Dimension: Cultural Interaction Habits</td>
<td>211</td>
<td>6,00</td>
<td>20,00</td>
<td>16,41</td>
<td>2,72</td>
</tr>
<tr>
<td>4. Dimension: Leadership Habits</td>
<td>211</td>
<td>10,00</td>
<td>25,00</td>
<td>19,24</td>
<td>3,04</td>
</tr>
<tr>
<td>5. Dimension: Care-Based Habits</td>
<td>211</td>
<td>8,00</td>
<td>30,00</td>
<td>24,47</td>
<td>2,95</td>
</tr>
<tr>
<td>6. Dimension: Leisure Habits</td>
<td>211</td>
<td>3,00</td>
<td>15,00</td>
<td>9,83</td>
<td>3,12</td>
</tr>
</tbody>
</table>

As it can be seen in Table 2, the minimum score is 76 and the maximum score is 165. The mean of academicians’ scores is 135,27, which means that academicians have high levels of Lifewide learning habits as their mean is higher than the scale’s mid-point.

Depending on the data gathered from Kolmogorov-Smirnov test, the data of the study was found normally distributed for both females and males (p= .551 / .710). Moreover, the homogeneity of variances assessed by Levene’s Test for Equality of Variances was calculated as .0,91. As these values were higher than .05, the data was accepted as normally distributed and homogeneity. As such, independent t-test as a parametric test was applied to the data in-question. As regards independent t-test results, no significant difference was observed in participants’ Lifewide learning habits respected to their gender.
variables. Table 3 shows the independent t-test results showing the difference of academicians’ Lifewide learning habits regarding their genders.

Table 3
Independent t-Test Results Showing the Gender Difference

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>X±</th>
<th>Sd</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>102</td>
<td>135.03</td>
<td>11.09</td>
<td>-.272</td>
<td>.344</td>
</tr>
<tr>
<td>Male</td>
<td>109</td>
<td>135.50</td>
<td>13.78</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was no significant gender difference in average scores on the Lifewide learning habits \((t=-.272, p>.05)\). It is also possible to see the same results when examining the Figure 1.

Figure 1. The Lifewide Learning Habits

Depending on the data gathered from Kolmogorov-Smirnov test, the data of the study was found normally distributed for all departments \((p>.05)\). Moreover, the homogeneity of variances assessed by Levene’s Test for Equality of Variances was calculated as .514. As these values were higher than .05, the data was accepted as normally distributed and homogenous. As a result, one-way ANOVA as a parametric test was applied to the related data. ANOVA results showed that no significant difference was found in participants’ Lifewide learning habits respected to their departments.

Table 4.
ANOVA Results Showing the Department Difference

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Sum of Squares</th>
<th>sd</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1497,873</td>
<td>11</td>
<td>136,170</td>
<td>.861</td>
<td>.580</td>
</tr>
<tr>
<td>Within Groups</td>
<td>31473,729</td>
<td>199</td>
<td>158,159</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>32971,602</td>
<td>210</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(p<0.05\)

There was no significant department difference in average scores on the Lifewide learning habits of academicians. It is also possible to see the same results when examining the Figure 2.
Concerning the data gathered from Kolmogorov-Smirnov test, the data of the study was found normally distributed for all titles (p>.05). Moreover, the homogeneity of variances assessed by Levene’s Test for Equality of Variances was calculated as .118. As a result of ANOVA analysis no significant difference was found in participants’ Lifewide learning habits respected to their titles. Table 4 shows the ANOVA results showing title difference.

Table 5
ANOVA Results Showing the Title Difference

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Sum of Squares</th>
<th>sd</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>561,855</td>
<td>4</td>
<td>140,464</td>
<td>1,469</td>
<td>.206</td>
</tr>
<tr>
<td>Within Groups</td>
<td>32409,747</td>
<td>206</td>
<td>157,329</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>32971,602</td>
<td>210</td>
<td></td>
<td>.893</td>
<td>.469</td>
</tr>
</tbody>
</table>

p<0.05

There was no significant title difference in average scores on the Lifewide learning habits of academicians. It is also possible to see the same results when examining the Figure 3.
Evaluating Lifewide Learning Habits of Academicians for Sustainable Development

Figure 3. Lifewide Learning Habits of Academicians.

Discussion

Recently, higher education institutions have been seen as educational institutions responsible for individuals’ social sustainability. Because there is a clear linkage between sustainable development and Lifewide learning, the learning and teaching process in higher education institutions should be more functional and developmental. In order to be successful in such a task, universities and their academic staff are to fulfill various roles with respect to education and Lifewide learning. Thus, academicians have key roles not only to enhance individuals’ job-related activities but also their personal development for a future-oriented sustainable life.

The aim of this research is to develop a scale in order to determine academicians’ Lifewide learning habits. The pre-trial form of the scale was applied to 50 academicians and explanatory factor analysis was conducted so as to identify the construct validity on the collected data. In consequence, 33 items of the scale had six basic sub-dimensions. There were similarities between the definitions that had been put forward in previous literature by Jackson (2011) in relation to the components. Based on the findings concerning the reliability and validity analyses, the scale can be suggested as valid and reliable in order to determine undergraduate academicians’ Lifewide learning habits. Using or adapting this scale is believed to contribute to the future of higher education institutions and their academicians a lot.

In order to conceptualize the multidimensional and complex notion of Lifewide learning, a scale for the Lifewide learning habits of academicians working at faculties of education. After this process, the scale was applied to 211 participants in 30 leading universities in Turkey. Depending on the data assessed by comparing the mean scores of the participants, it can be identified that participants take part in activities related to Lifewide learning. In this research, it has been found that the average scores of acade-
Academics got from “Lifewide learning habits scale” are a bit higher than the scale’s medium scores. Thus, the Lifewide learning habits of academics are high. It can be suggested that by providing students with various activities or facilitating them, their interests and habits can be encouraged in all components of Lifewide learning. As the whole development of higher education students is an indispensable principle for Lifewide education, students should be presented opportunities in all domains of life with the help of their instructors. Moreover, it is academics’ priority to organize their work processes themselves. This means that there is not any directing third party. Their teaching and social activities may take place on individual basis, which engage them for their sustainability.

The results of the analysis presented in the current study provide support to the hypothesis gender does not have a significant and positive impact on Lifewide learning habits of academics. This finding illustrates the significance of considering multiple dimensions of learning for both genders when investigating the benefits of learning in various settings. Moreover, there was no significant difference found among the academics in relation to their departments. Such a finding can be interpreted as the departments of the faculty have similar academician profiles, so the scale can be applied to different departments of various faculties. Generally academics are supposed to act with a certain objective in mind, which is improving themselves all the time—with the borders of their faculties or outside of them. For this reason, they partipate in many contexts and try various strategies for their professional and personal lives. Besides, cooperation among academics is a cornerstone for professional development. As Bezzina (2006) stated the best way to implement professional development is through cooperation and it was necessary to keep up-to-date with developments in the teaching profession.

The study also has tried to highlight the significance of empirically investigating the effects of titles on Lifewide learning habits of academics for sustainability. It is perhaps not surprising that there is no significant difference among the participants in line with their Lifewide learning habits, since the concept of Lifewide education consists various activities for academics although their workload is so much. The academics usually have a basic intention to learn something through voluntary activities, which can be attributed as an important feature for sustainable development. As a consequence, Lifewide learning habits are facilitating tools for sustainable development.

To stimulate the habits of Lifewide learning in all people in the community, including students and teachers, it is necessary to fortify the relationships between different institutions and facilities. The fundamental factor for consolidating sustainability and Lifewide learning is renovation the old in more effective way for academical, social, technological development.

**Recommendations for Further Studies**

All these findings signal the need for further empirical research that seeks to investigate the casual relationships among the multiple dimensions of Lifewide learning, since learning is a dynamic and continuous process. Research that can be fulfilled with academics from different departments can be suggested in order to get ahold of an overview on academics’ Lifewide learning habits. From the results of the present
analysis, it can be deduced that that both formal and informal applications at higher education institutions adopted by academicians are cornerstones for developing competencies of university students for sustainable development.

References


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