Erasmus+ Project - Methods For ESD Competencies and Curricula (MetESD)

Final External Evaluation Report

July 2018

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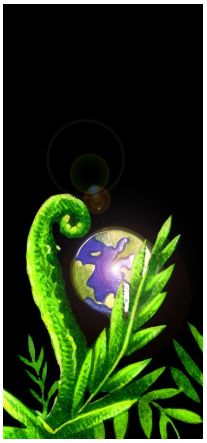

Sustainability Through Education

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1. Introduction

This is the Final External Evaluation Report for the MetESD Erasmus+ Project, which ran from 2016 to 2018. This Report focuses on the process and the outcomes of the evaluation and it should be read in conjunction with the Final Project Report, which describes the content, project outcomes and other aspects of the Project. To avoid excessive repetition a detailed description of the Project is not included as part of this report.

The evaluation process was integrated into the Project from the beginning, and where possible the emerging outcomes of the evaluation were used to contribute to the learning of the participants in the Project. The Project evolved over the duration of the three years in response to the needs of the participants and due to external factors including a change in the make-up of the partners. The evaluation process responded to these changes, but maintained the strategic approach which was established in an evaluation action plan at the start of the Project and which is summarised below

Summary of the Evaluation Action Plan

Action	Timing
Initial assessment of participating teachers and schools in relation to ESD conducted at first international meeting	Feb 2016
Initial External Evaluation Report on findings from first international meeting	Feb 2016
Draft a survey for students to investigate their perspectives on their teaching experiences, and on their learning and empowerment in respect of ESD competences.	May 2016
Conduct pilot of the student survey at BBS Friesoythe and Daugavpils.	End June 2016
Review the results of the pilot and produce final draft of survey for students.	Sept 2016
First survey distributed for translation and administration to students. (A sample population of 100 students per school – 300 responses in total.)	End of Dec 2016
Survey responses analysed	End of March 2017
Briefing pack for critical friends visits sent to all partners for feedback	End of May 2017
Final version of the briefing pack for critical friends sent to the schools	End of July 2017
Critical friends: hosts and visitors for the visit to Latvia exchange the forms listing the 3 things that the hosts want to show and the visitors want to see. The agenda of things to be shown/seen agreed at the start of the visit.	Mid Aug to mid Sept 2017
First round of critical friends' visits to take place in Latvia. Participants review visit and complete report.	18-20 Sept 2017
Second round of critical friends' visits to take place in Germany. Participants review visit and complete report.	16-20 Oct 2017
Third international meeting in Vienna – report on first student survey and feedback on critical friends' visits.	14-16 Nov 2017

Circulate and administer second student survey.	Feb 2018
Comparative analysis between the results of the first and the second student surveys	March 2018
At the fourth international meeting in Latvia conduct final interviews with teachers to draw comparisons with the initial survey of teachers at the first international meeting and to collect reflections on the project process.	April 2018
Draft Final External Evaluation Report.	July 2018
Final Evaluation Report	July 2018

The role of external evaluation as presented in the Project's application for Erasmus funding relates to assessing pedagogical changes to the professional practice of the teachers involved in the MetESD Project, which result from the ESD training programme. The evaluation is also concerned with the impact of these pedagogical changes on the learning experiences of the students in the vocational schools. The aim of the external evaluation is presented in the application as follows.

> *"The aim of the external evaluation is a quantitative and qualitative survey on the implementation of the modules in the subject curricula of schools.*
> *Firstly it shall demonstrate, which effects the lessons have on the attitudes and performance of students. And secondly the impact on the teaching skills of the school's staff shall be tested."* (Erasmus Application: page 46)

Furthermore the role of the 'critical friends' is seen as part of the external evaluation process and was identified as a vehicle for assessing the impact of the Project on institutional change in the participating vocational schools.

> *"An external evaluation and self-evaluation by a peer review of so-called "critical friends" shall assess the possibilities and difficulties of implementation, in order to secure the quality of curriculum development."* (Erasmus Application: page 42)

Essentially the evaluation is trying to assess the impact of the Project on the participating schools (teachers and students) in terms of

- Curriculum development
- Pedagogical approach in relation specifically to ESD and entrepreneurship.

To achieve this a range of methods were employed to collect data directly from the participants in the Project and indirectly from the students of the teachers that were involved in the Project. The following section sets out the methods used to engage participants and to collect the data required for the evaluation. Subsequent sections summarise the results of the data collection methods and present the outcomes from

the evaluation process, including the lessons learned that can inform recommendations for future projects that adopt a similar approach to MetESD. The conclusion to the report will offer some final reflections on the Project and the evaluation process.

2. The process and methods employed in evaluating the MetESD Project

2.1 Data collection methods

The following methods were used to collect data for the evaluation:

- A base line assessment resulting from the first international meeting in Feb 2016, which included the following
    - Questionnaire for teachers
    - Diamond ranking activity
    - School status grid
    - Sample interviews
- Student survey
    - Pilot - 2016
    - 1st survey – 2017
    - 2nd survey – 2018
- Feedback from the critical friends visits – Sept/Oct 2017
- Final international meeting – April 2018
    - Repeat of the diamond ranking and school status grid
    - Sample interviews with particular emphasis on reflecting on the impact of elements of the Project on pedagogy and curriculum development
- Participant observation at all the international meetings

Data collection for the evaluation of the Project started with the first meeting of the participants in Germany in February 2016. The rationale that underpinned the data collection activity in the first international meeting was determined by the role of external evaluation as described in the Erasmus application and the existing literature on the nature and characteristics of ESD and education for entrepreneurship. The aim of the evaluation process at this first meeting was to establish a view on the participants' current understanding of, and perception of, ESD and entrepreneurship including a perception from the teachers on the extent to which ESD and entrepreneurship education had already been introduced into their school. To achieve this, as part of the meeting agenda, the participants were asked rank a series of statements relating to ESD and the results of this activity were recorded.

They were also asked to complete a Likert Scale questionnaire on various aspects of pedagogy and each group of teachers were asked to identify statements that most reflected the position of their school in relation to implementing ESD from the school status grid. Finally individual teachers from each of the schools represented took part in a short semi-structured interview. The results from these data collection activities in the first international meeting of the Project were presented in an Initial External Evaluation Report, which contributed to the Interim Project Report and also acted as a baseline for the evaluation of the Project. The ranking activity, and the activity selecting statements from a school status grid for each school were repeated at the last scheduled meeting of the Project in April 2018, along with further semi-structured interviews with the teachers. The results of the data collection at this final meeting were compared with the baseline from February 2016. Copies of the ranking statements, the Likert questionnaire and the school status grid are attached to this report as Appendices A, B and C.

The student surveys were an attempt to gain an insight into the differences the MetESD Project had made to the experience of the students in the classes of the teachers who were engaged in the Project. The survey was dependent on participants from the partner countries translating the survey and on the teachers administering the survey with their students. A pilot survey was conducted with eighty students and changes were made, especially in terms of clarifying the instructions to each element of the survey. The surveys were then conducted in the spring of 2017 and the spring of 2018. The raw data was returned to the evaluator for analysis on each occasion.

The student surveys explored the views and attitudes of students towards their courses and on issues relating to sustainable development and entrepreneurship. It did not make sense to use terms such as ESD, entrepreneurship or pedagogy in the questions in the survey, as these are not common terms for most students. Hence characteristics associated with the definitions or descriptions of these concepts were incorporated into the questions.

Examples of these characteristics were based on existing literature in the field included the following.

- ESD
    - Futures
    - Links to the environment
    - Links to community/businesses
    - The world outside the classroom

- Content
    - Climate change
    - Endangered species
    - Population
    - Resources
    - Migration
- Pedagogy
    - Activities beyond the classroom
    - Levels of participation – e.g. group discussion versus presentation
- Entrepreneurship
    - Business
    - Self-employment
    - What students want from their career

The student survey had five sections that covered the following areas.

- Section A – How students view their course and education generally
- Section B – Content of courses
- Section C – Pedagogy
- Section D – Students' perspective on their future career
- Section E – Students' broader concerns relating to sustainable development issues

A copy of the student survey is attached to this report as Appendix D.

The critical friends visits involved the teachers visiting each other's schools for classroom observations and discussions. To support the evaluation process both hosting teachers and visiting teachers were asked to complete a brief questionnaire reviewing the visit. This was supplemented at the second critical friends visit by an open discussion between all the teachers involved. Notes were recorded of the points raised in the discussion by the evaluator, who was in attendance.

Following the final meeting of the Project in April 2018, the higher education and non-governmental organisation partners, whose role it was to support the schools were asked to complete an evaluation questionnaire.

In addition to the various data collection instruments discussed above, the external evaluator attended the Project meetings and the second critical friends visit as a participant observer.

2.2 Limitations of the data collection methods

As the Project progressed there were some changes to the partners involved, in particular the Dutch partners dropped out of the Project, having participated in the first two meetings and the student survey in 2017. As a result the Dutch responses to the 2017 student survey were removed when making comparisons with the 2018 survey.

The limitations on the student survey were greater than the other parts of the evaluation process, due to administering of the survey to the students being out of the control of the evaluator, however consistent written instructions accompanied the survey. It is also acknowledged that were likely to be variables and externalities in the individual school contexts, about which the evaluator was not aware, and which may have influenced the responses.

3. Results from the data collection

3.1 Baseline and end of Project comparison

This aspect of the evaluation involved the ranking exercise, the school status grid, the Likert survey and the semi-structured interviews. The ranking exercise was based on statements linked to the model of 'ESD1 and ESD 2' put forward by Scott and Vare (Scott and Vare: 2007). ESD 1 involves changing behaviour and implementing practical changes to improve current practices to make them more sustainable, while ESD 2 requires a more fundamental change to an individual's worldview, and developing the capacity to think critically and systemically. ESD 1 is viewed as easier to engage with and implement, while introducing the changes associated with ESD 2 is seen as a greater challenge. The baseline activity involved fourteen teachers from three partner countries, while the end of project activity involved 10 teachers from two partner countries. The comparison indicates a slight shift from ESD 1 to ESD 2, suggesting that the teachers had become more aware of the transformative nature of ESD in relation to pedagogical approaches and the impact on students' worldviews. In the baseline assessment there was an even split between those who thought ESD was about transferring a body of knowledge and those who thought it was more about an approach to teaching. At the end of the Project more teachers ranked statement 'B' higher, indicating a recognition that ESD is about an approach to teaching rather than just about curriculum content and that it is about empowering students as learners.

The school status grid was based on two publications of ESD guidance for teachers from WWF and the Welsh Assembly Government (WWF:2004 and WAG:2008). The results do not indicate a significant shift in the perceptions held by the teachers of their schools in relation to ESD, but there were some shifts in certain areas. There appears to be a broader perception of the relevance of ESD across all curriculum areas and a recognition that leadership for ESD is occurring at all levels amongst staff and students and not just at senior management level.

The results of the activities described above were supported by the semi-structured interviews with teachers. At the end of the Project seven teachers from the two schools were interviewed. The teachers from both of the schools involved at the end of the Project stated that it had influenced change in their curricula. These changes had taken place across a wide range of curricula including Politics, Business Studies, English, Physics and Engineering. Examples of these changes are provided in section 3.4.1 below.

The importance of disseminating the learning from the Project across the whole school was also recognised with teachers who had attended the Project reporting back through staff meetings, as well as informal discussions. One of the schools has a staff conference planned for the next academic year in order to share ideas from the Project.

3.2 Student surveys

The responses provided by the students were anonymous, but age and gender data was collected and this enabled the following criteria to be applied to the responses. Because the focus was on vocational schools and vocational courses, all responses from students below the age of 16 (mainly from the Netherlands in the first survey) were removed. There were a very small number of older students over the age of 20 in the sample and these were also removed. Where age, gender or a significant number of responses to questions were absent the individual was removed. The total number of responses removed from the first survey was 17 and the number removed from the second survey was 10.

Breakdown of the responses included in the analysis

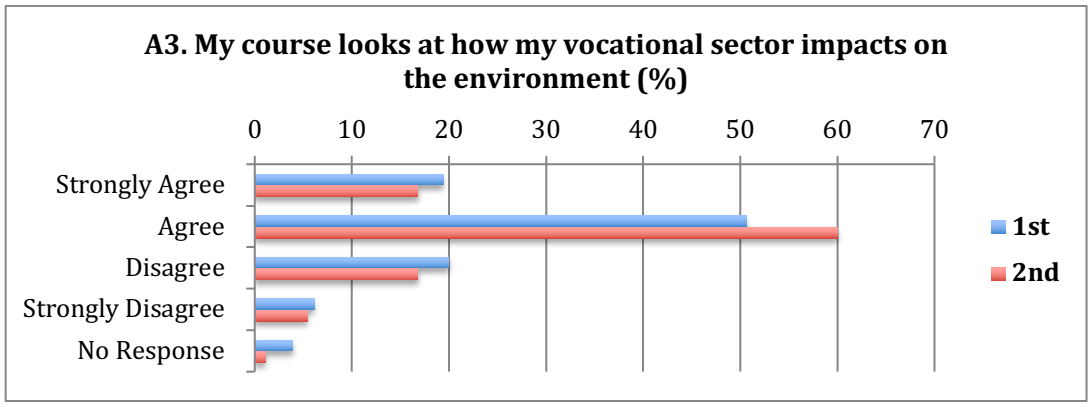
	TOTAL	**German School**		**Latvian School**		**Dutch Schools**	
		Male	Female	Male	Female	Male	Female
1st	253*	43	45	70	22	56	17
2nd	185	34	60	84	7		

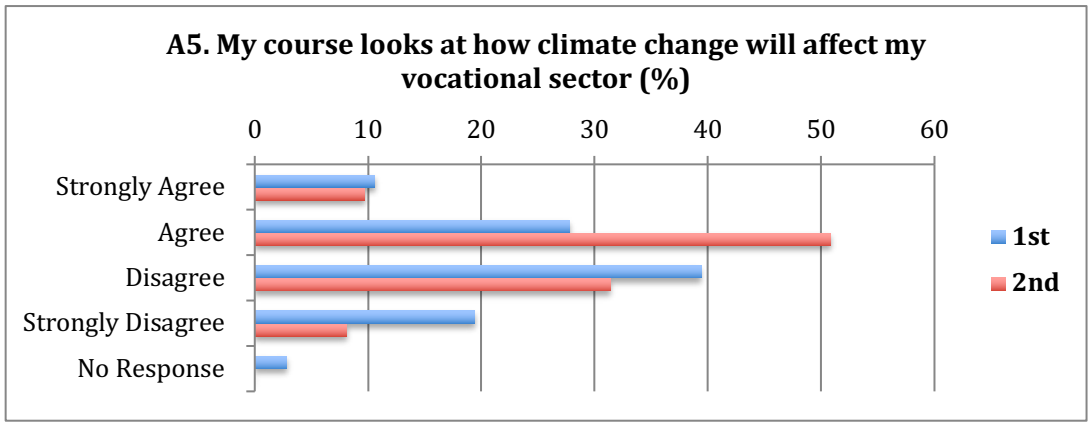
*180 with the Dutch schools removed

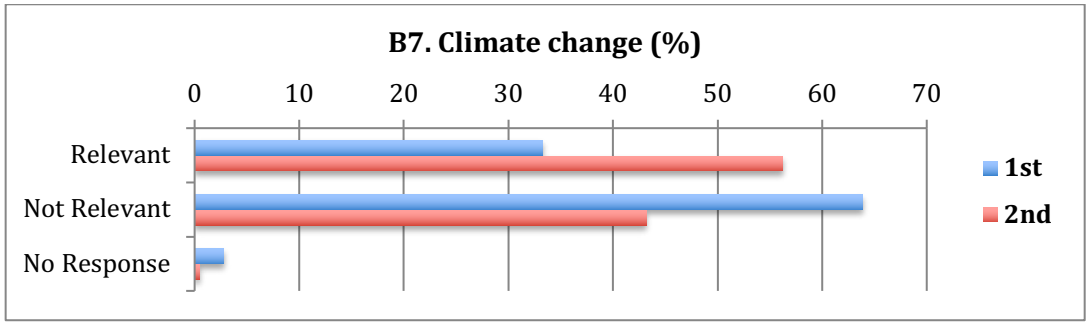
During the period between the two surveys the Dutch partner dropped out of the project. As a result, in drawing comparisons between the 1st and the 2nd survey the Dutch responses were removed from the first set of results. A set of the results comparing the two surveys for the German and Latvian schools is available in Appendix E. The main similarities and differences between the two surveys are summarised here. The letters and numbers associated with the responses refer to the sections and questions in the survey. For example 'A1' refers to Section A, question 1.

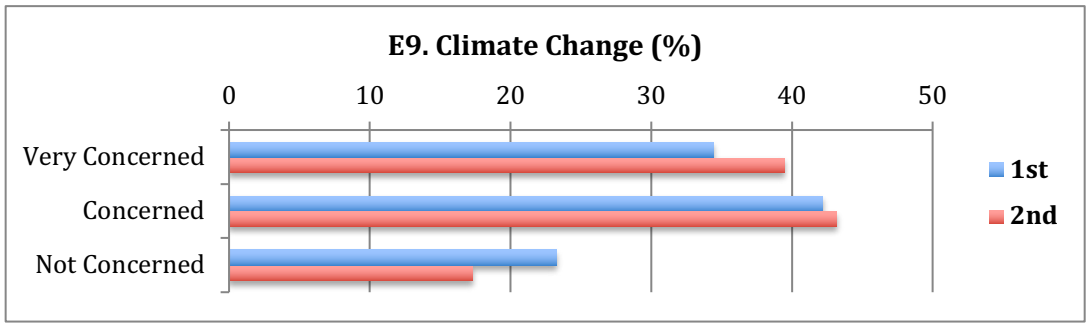
Taking into consideration that the second survey was a different cohort of students to the first survey there is a remarkable similarity in the pattern of each of the combined responses to each question, which suggests that overall the outcomes of these surveys present a reasonably reliable view of the attitudes and perceptions of 16 to 20 year olds across two different cohorts and across two schools in two different countries. In the responses to a majority of the questions the differences between the surveys were quite subtle with some movement between 'strongly agree' and 'agree', or between 'disagree' and 'strongly disagree'. However, there are some questions that show a significant difference between the surveys that could be related to the impact of the Project.

In Section A, which asks about the students' views on their course. The ratio between responses that agree and those that disagree remain similar for questions 1, 2, 3, 4, 7 and 8, as illustrated by question A3. However, question A5 shows a definite shift towards students recognising that their course is addressing the issue of climate change. This change is supported by the responses to question B7, which records a shift in the percentage of students that identify climate change as being relevant to their vocational course. This change is also reflected in the responses to question E9, which shows a small increase in concern about climate change.

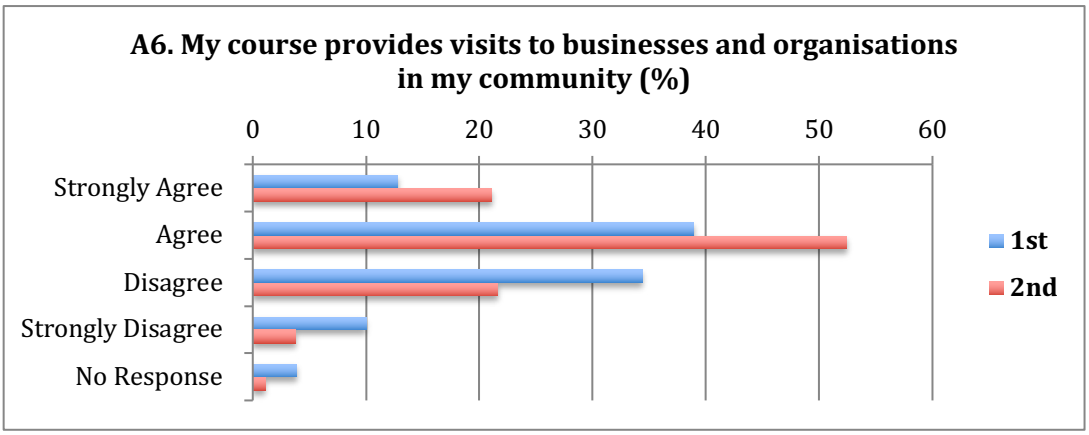


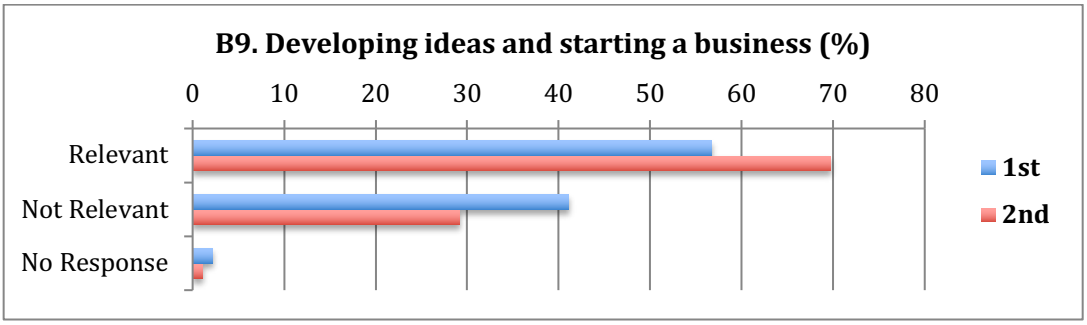


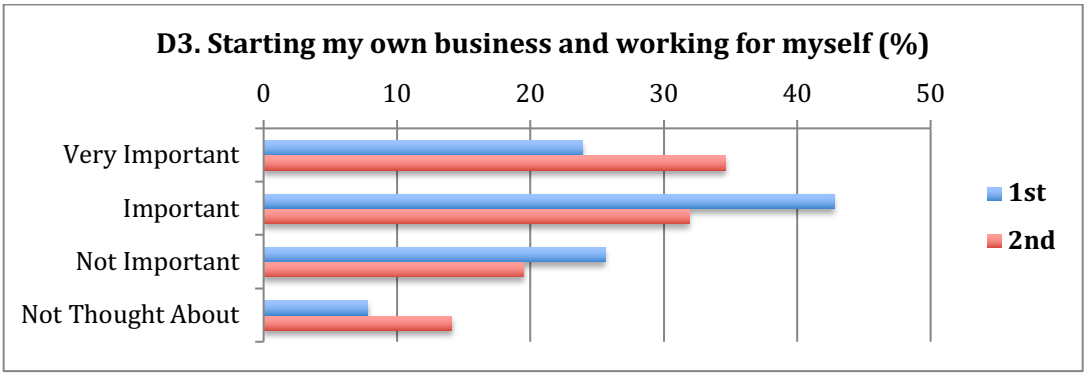




The other change in Section A is the response to question A6, which indicates an increase in the links between the courses and local businesses. This could be a response to the emphasis put on entrepreneurship in the Project. This is supported by the responses to question B9 about the relevance of 'developing ideas and starting a business' in the content of courses. And in response to question D3, there is a distinct shift from 'important' to 'very important' in response to 'starting my own business and working for myself'.



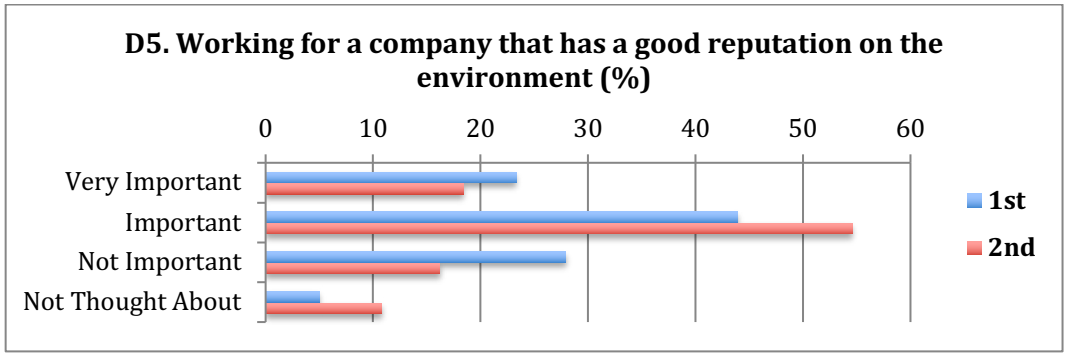




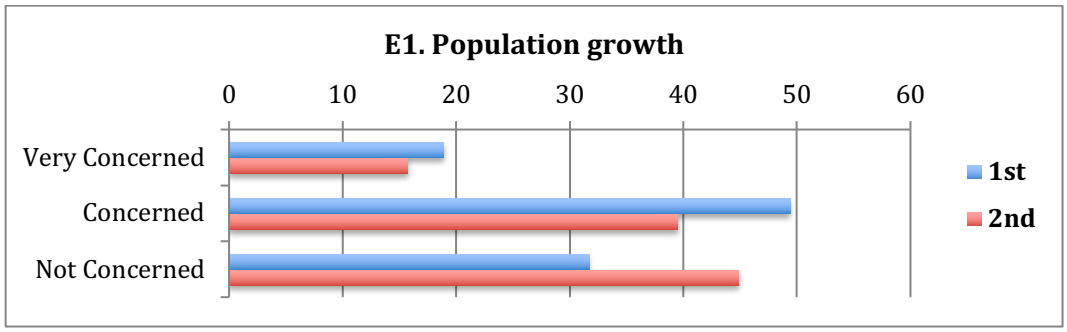
Section B of the survey is concerned with which topics students consider to be relevant to their vocational course. As mentioned above responses to questions B7 and B9 demonstrate a marked shift from 'not relevant' to 'relevant', as did B8, which suggests a greater influence of the natural environment in the vocational courses in the second survey. Questions B1, B2, B3 and B5 all show smaller positive shifts towards 'relevant', while B4, B6 and B10 show no movement or very minor shifts towards 'not relevant'.

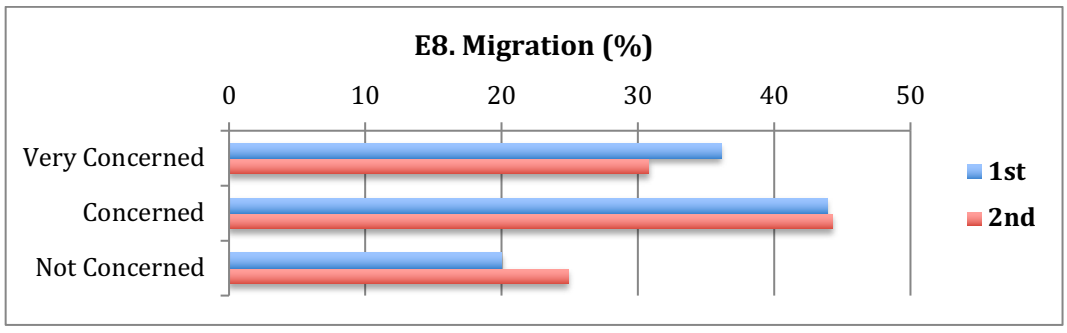
Section D asked students to indicate what they perceived to be important to them in their future career. All of the factors identified in the questions were deemed important rather than not important, with the differences between the two surveys being mainly limited to shifts between 'very important' and 'important'. The largest change from 'not important' to 'important' occurs in question D5, which relates to

'working for a company that has a good reputation on the environment'. This could be a further reflection of teachers including more on environmental sustainability as a result of the Project.

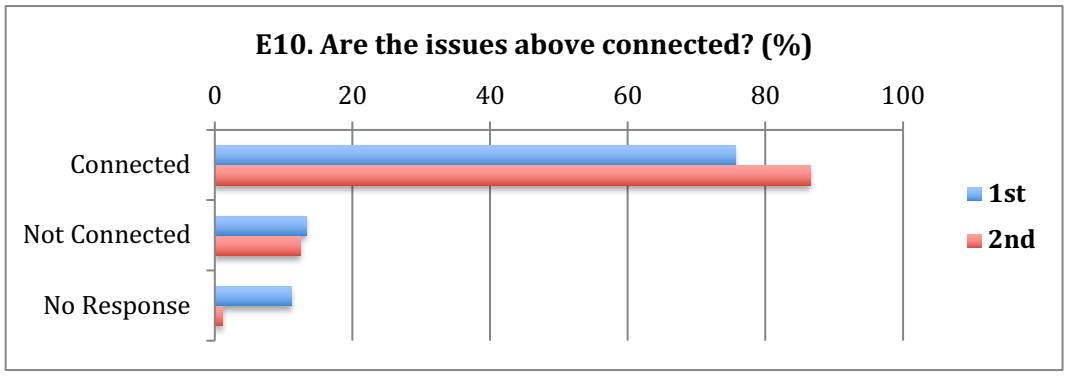


Section E was aimed at identifying some of the concerns that students might have about the wider world and their future. There was a consistent response in the two surveys to most of the issues presented to the students. In questions E1 and E8 the second survey showed a reduction in concern over 'population growth' and 'migration'.

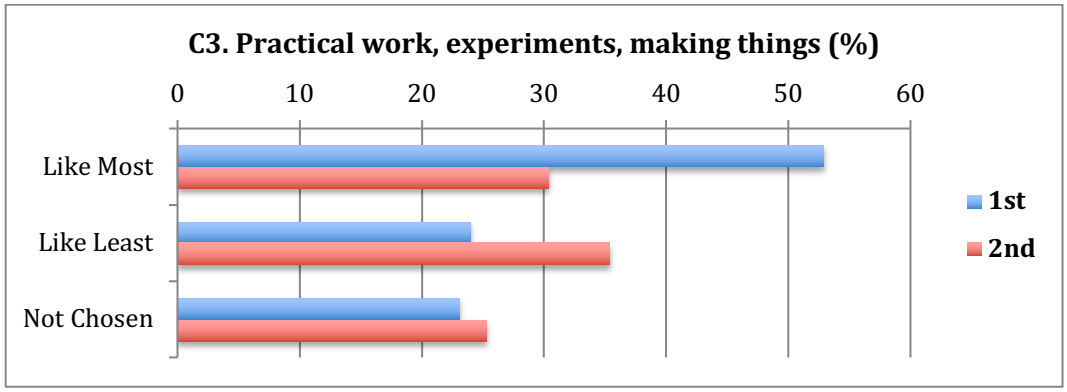


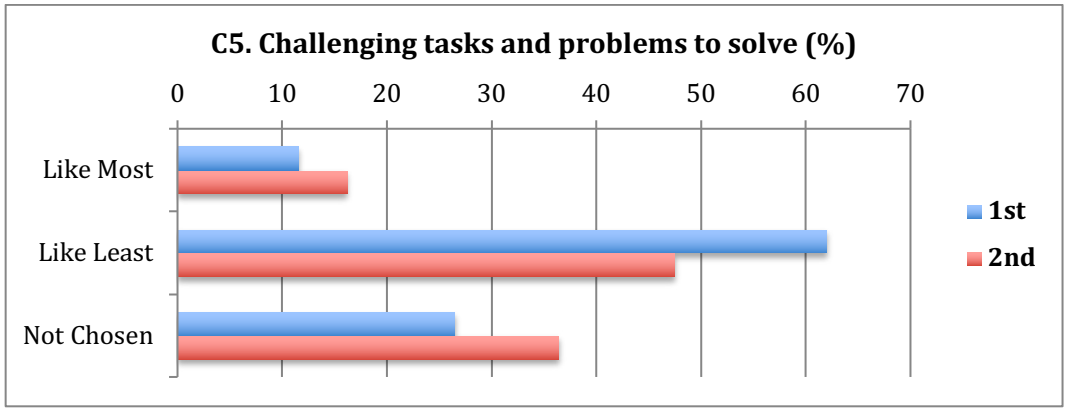


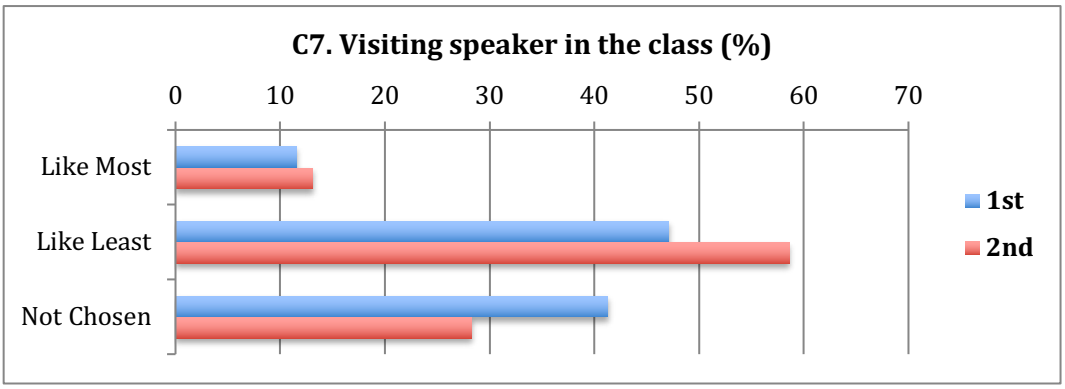
Question E10 was linked to systems thinking, which is seen as a key aspect of ESD. The students were asked if all these issues of concern were linked. There was an overwhelming and consistent 'yes' to this question in both surveys.



Section C was the most complicated section for students to complete, as it required them to select three most liked teaching methods and three least liked teaching methods. As a result a significant number of the responses were not completed correctly and the number of responses deemed as valid for this section were greatly reduced adding to the limitations of what can be interpreted from the results. There were some strong likes and dislikes that were consistent in both surveys, with C3, 'practical work, experiments and making things' a strongly favoured, while C5, 'challenging tasks and problems to solve', and C7, 'visiting speakers' strongly disliked.







While acknowledging the limitations of what can be read into the results of these surveys, there are indications that the influence of the Project on the teachers that participated has resulted in changes to the curricula delivered by the teachers and as a result, a degree of change in the experience and perceptions of the students in relation to environmental sustainability and entrepreneurship.

3.3 Critical friends visits

Three teachers from the German school visited the Latvian school in September 2017 and three teachers from the Latvian school visited the German school in October 2017. Following each visit the teachers were asked to report back to the evaluator by means of a questionnaire. This revealed very little in-depth data about the impact of the critical friends process. The evaluator was able to attend the critical friends visit to the German school, which lasted for two full days. At the end of each day the German and the Latvian teachers held a group discussion to reflect on the day and this provided much more evidence about the impact of the critical friends process. The interviews conducted with the teachers at the end of the Project also required on them to reflect on the value of the critical friends visits.

The key points identified by the teachers in relation to the critical friends visits were as follows.

- The pre-visit form, which was used to set an agenda and achieve common expectations for the visit, was useful for making good use of the time available. In one case it generated six questions that formed an agenda for discussions and class observations.
- The teachers from the different countries recognised that they had a lot in common in terms of their professional practice. Some teachers commented that they ‘felt at home’ in the classrooms of the other school.

- The aims for the students were the same in both schools but there were differences in the ways of achieving those aims.
- Different ESD related pedagogical approaches were observed in action and noted by teachers for adoption in their own classroom, including:
    - the teachers acting as a resource to be consulted by students as they worked on their own projects;
    - the combining of subjects to achieve a multi-disciplinary approach;
    - entrepreneurship links with real companies;
    - good use of group work and cooperation;
    - the way English lessons were used to achieve deeper discussions on a variety of issues;
    - and the use of presentations from students to build their confidence and understanding of challenging topics.
- The teachers identified similar challenges in terms of implementing curriculum change, ESD and entrepreneurship, including:
    - time constraints and the need to have longer contact periods in vocational subjects;
    - enabling cooperation between subjects to achieve the multi-disciplinary approach;
    - and the need for those who supervise students in work placements to have educational qualifications/experience.

3.4 End of Project survey

At the end of the Project a sample of participants were asked to reflect on the project by responding to a series of questions. Responses were received from seven teachers from the participating schools and from five members of the organisations that supported the schools through the Project. Some respondents were interviewed face to face by the evaluator, others submitted responses in writing.

3.4.1 End of Project reflections from teachers

When asked to reflect generally on the benefits of the Project, teachers from both countries highlighted the opportunities to spend time with teachers from another country, to observe the techniques that other teachers employ in their pedagogical approach and to incorporate these alternative ideas into their own teaching.

As mentioned in section 3.1 above the teachers reported that changes had taken place across a wide range of curricula including Politics, Business Studies, English, Physics and Engineering. One English teacher described getting into deeper discussions on nature topics; another teacher talked of being inspired to change his politics curriculum as a result of the Project; and to quote one Physics teacher “It completely changed my view on curriculum content”. The combination of ESD and entrepreneurship has prompted a change by one business studies teacher to incorporate business culture, ethics and the philosophy of companies into his curriculum, as well as discussing the consequences of business activity.

Teachers from both Germany and Latvia cited the first international meeting as being the most important, because it achieved a common understanding of sustainable development across the group of participants. The first meeting set the foundations and direction of the project and inspired some new thinking.

The critical friends visits were seen as particularly valuable in terms of building relationships, although there was very little evidence that the relationships continued beyond the visits or the international meetings. For example there was only one case of teaching resources being exchanged by email after the visits. However, some teachers requested that a future project should devote less time to the meetings/training session and more time to critical friends visits.

In both schools the Project was credited with giving extra impetus and support to other projects that were taking place including the development of a new room for teaching office studies and a new careers initiative.

The Project underlined the importance of having contact with colleagues from other schools and other countries because it broadens perspectives. Both groups of teachers appreciated the opportunity to share ideas and concerns, and to recognise that they have similar goals and face similar challenges. In terms of implementing ESD and entrepreneurship they all recognised similar restrictions in terms of timetables, resources and changing established practices with senior management.

Further suggestions for future projects included more careful matching of the schools that are involved in a project in order to meet what the schools might want to achieve from the project. This might mean ensuring that similar vocational areas were involved in both schools in order to match up teachers. There was also a request to have a rationale for getting students more directly involved in projects of this nature.

3.4.2 End of project reflections from support partners

The Project was dynamic in the way that it was able to respond to the needs of the teachers and the challenges to changes in the partners. This was down to the management of the project, good communication and the willingness to be flexible, while keeping to the goals and outcomes in the application.

The supporting partners placed more emphasis on the international meetings and the training sessions than the teachers did. In particular the second international meeting was identified as being very creative in terms of ideas about school development and curriculum development. In these sessions the teachers were challenged to review their thinking on ESD and there was an opportunity to explore theory as well as practice.

It was suggested that more time could have been spent in the meetings or the training sessions to explore the wider concept of entrepreneurship. The discussions tended to focus on business related entrepreneurship, rather than the innovation and change associated with the broader concept of social entrepreneurship. It was suggested that the term 'change-maker' could be used instead of, or as well as, 'entrepreneur'.

The relationships between the universities and the schools have developed and become much closer. One comment suggested that the universities and the schools recognise each other as equals as opposed to seeing universities as 'higher' than schools.

The critical friends visits were seen as valuable opportunities for teachers to exchange ideas and views in the context of their schools rather than in a formal project training session. The international perspective of the visits was seen as important because the critical friends visits were a means of breaking down barriers and challenging existing perceptions between Eastern Europe and Western Europe.

While all the supporting organisations agree that the Project has had an impact on curriculum development in the schools they vary in the perceived depth of that impact. All agree that both schools have reviewed their curricula in the light of the Project and that to date the ESD elements of the Project have had a greater impact on the curriculum than the entrepreneurship elements. In particular ESD has broadened the coverage of sustainable development beyond a focus on the environment, including modelling a more democratic approach to pedagogy by involving the students in decision-making. ESD has been recognised as multi-dimensional, and the Sustainable Development Goals and systems thinking have been firmly brought to the attention of the teachers, although some respondents felt that there could have been even more integration of the Sustainable Development Goals.

The teachers have been exposed to new ideas in relation to pedagogy, but the extent to which classroom practice has changed was seen as difficult to judge. This was thought to be because the changes may take time to emerge and there was limited opportunity for extended classroom observation.

The supporting organisations had clearer views on the barriers to bringing about change in the curricula and in the schools as a whole. These include getting the senior school managers involved in working alongside the teachers on the Project, disseminating the ideas from the Project to the whole school staff, competition from other projects that do not have synergy with ESD and entrepreneurship and existing overload in some parts of the curriculum.

The main lessons learnt in terms of managing the Project are related to having very clear objectives that are communicated to all partners and obtaining a commitment from the partners to undertake the actions required. This includes a clear understanding of the time commitment and the level of involvement of senior managers in the schools. There needs to be clarity on the budget for all parts of the Project to prevent losing partners due to financial issues. The engagement of the project participants could be more evenly spread across the project period and not just have intense periods of activity around the meetings and the visits. This could be done by additional Skype events.

4. Conclusion and Recommendations

The MetESD Project had ambitious aims, the vast majority of which have been achieved due to the competent management of the Project and the enthusiasm of the participants. The project faced challenges with the loss of the Dutch partners, but the Project maintained its programme of meetings, training sessions and critical friends visits as well as achieving its goals and outputs.

The teachers participating in the Project were exposed to ideas around ESD, entrepreneurship and pedagogy and their views and professional practice have been influenced as a result. The evaluation has identified evidence to support the notion that curricula in the schools have been developed and teachers have been adopting ideas from the training and from each other in relation to their pedagogical approaches. The evidence from the participants in the Project suggests that their perspective on sustainable development has been broadened from an emphasis on environmental sustainability. However, the student survey indicates that environmental issues and climate change in particular have become more prominent following the Project. The entrepreneurship aspects of the Project also appear to

have reached the classroom, with students becoming more aware of the starting their own businesses as an alternative career route. However, it is difficult to isolate the impact of the Project from all the other factors and other projects influencing the teachers, but the Project has driven change in some instances and contributed to change in other instances.

The indications are that the influence of the project will continue beyond its conclusion in several ways. Dissemination of ideas is scheduled to continue in the schools and the physical outputs in the form of a teaching resource on entrepreneurship, guidance in ESD for teachers and a policy statement are all emerging in the latter part of the project and their impact is still to be seen.

The critical friends visits were a key factor in developing an understanding between teachers from different historical and cultural contexts, who were facing similar challenges and who all had contributions to share with the group as a whole.

The learning points from the Project in relation to the main content themes of ESD and entrepreneurship are as follow.

- Invest sufficient time at the start of the Project to explore different perspectives on ESD and the variety of approaches to ESD pedagogy.
- Adopt a broad approach to the concept of entrepreneurship as a driver for innovation and change. A broad approach to entrepreneurship that encompasses social entrepreneurship, and sees entrepreneurs as change-makers in their communities, provides the potential for synergy with aspects of ESD.

The practical learning points from the Project and recommendations for similar projects in the future are as follow.

- Invest time in clarifying the commitments of each partner at the application stage. Obtaining a written memorandum of understanding from each partner can avert problems later in the project. Clarity about the time commitment, the actions required and the resources involved, as well as the benefits that will be gained should be in place before the project starts.
- Consider the balance between the time and resources spent on theoretical input of the training sessions and those spent on the more practical peer to peer experiences of the critical friends visits.
- Put in place guidance before, during and after the critical friends visits to maximise the value of this activity. Give opportunity for teachers to report

back on the critical friends visits at one of the later meetings of the project.

- Identify ways of engaging students directly in the project.
- Consider a means of providing the teachers with some form of professional development accreditation for participating in the project.

5. References

Scott, W. and Vare, P. 2007, *Learning for a Change: Exploring the Relationship Between Education and Sustainable Development.* Journal of Education for Sustainable Development September 2007 vol. 1 no. 2: 191-198

WAG, 2008, *Education for Sustainable Development and Global Citizenship: A Common Understanding for Schools.* Information document 065/2008. Cardiff: Welsh Assembly Government.

WWF. 2004, Pathways: To Education for Sustainable Development, first edition. Godalming: WWF-UK.

Appendix A – Ranking Statements

A ESD relates equally to all subjects in the curriculum as well as to school/college life beyond the curriculum and the way the institution is managed.	**F** It is best to identify a clear list of topics that will be covered under ESD otherwise it is likely to be lost in the rest of the curriculum.
B ESD is about getting students to explore issues and helping them to find out things for themselves. It is about an approach to education rather than curriculum content.	**G** ESD should mainly concern the study of environmental issues such as climate change, water use, transport and waste.
D In ESD we should focus on issues that don't have clear-cut solutions or actions e.g. reducing food miles versus fair trade.	**J** ESD, like other areas of education, should usually involve activities where there are clear measurable outcomes.
E ESD is a type of political education.	

Appendix B – Likert Questionnaire

	Strongly Agree	Agree	Disagree	Strongly Disagree
Learning is based on transferring a fixed body of knowledge.				
Values and attitudes are always present in teaching.				
All students need to be aware of their dependence on natural ecosystems.				
Critical thinking and reflection are important skills for all students.				
Education is not about transforming the worldview of individuals.				
The teaching approach and the learning environment should reflect the values being taught.				
All teachers need to continually develop and evolve their practice.				
ESD is not equally relevant to all subjects.				
Students should know that knowledge is not fixed and that the answers to complex questions can change over time.				
Students only learn if they are active participants in their own learning.				
Students should be more concerned about their future career than about global issues.				
ESD is important for equipping students for life beyond school.				
Students need to be given certainty about the view to hold on a controversial issue.				
All students need to explore issues of equity, justice and democracy as part of their curriculum.				
The business case for sustainable development should be part of the curriculum.				
Teachers should adopt a co-learning approach with students while providing guidance and showing leadership.				

Appendix C – School Status Grid

*Please choose **one** statement in each column that best describes your school/college.*

Curriculum Development	Teaching Methods and Approaches	Students' Awareness and Attitudes	Informal Learning (Ethos)	Leadership and Decision-Making	Research and Monitoring	Links and Partnerships
The curriculum has been audited for ESD	ESD is seen as additional content for a subject.	Students discuss controversial issues in an academic context.	The way in which resources, waste and people are managed in school is different from the messages taught in the curriculum.	Senior managers in the school recognise and support ESD.	Monitoring learning is limited to formal academic assessments.	Good links exist between the school and businesses and other organisations in the local community.
ESD is adopted by some subjects, but not by others	Teaching methods are designed to enable independent learning skills as well as delivering the curriculum.	Students can relate their learning to the world beyond the classroom.	Energy-saving, recycling and the procurement of resources at the school influence the behaviour of students and staff.	One teacher is responsible for ESD. All staff are consulted as part of the decision-making process on some ESD issues.	Teachers observe and work with each other in the classroom.	Out of classroom learning takes place in the local community and the local environment.
All staff are aware of ESD. ESD is considered by all subjects independently.	Teaching methods require students to be active participants in their own learning rather than be receivers of information.	Students are capable of understanding complex issues that do not have simple answers.	Teaching staff, non-teaching staff and students have a common attitude towards caring for each other and caring for the environment.	There are leaders for ESD at all levels among staff and students. Staff and students are regularly consulted on ESD issues.	Individual staff engage in research to test and improve teaching and learning.	Students are involved with international school links and recognise that issues can be local and global.
ESD is integrated in all curriculum development from planning to delivery. There is strong cooperation between subjects.	Research into the students' perceptions of learning is used for the planning and delivery of the curriculum.	Students are capable of critical thinking. They question information and ideas and change their attitudes and behaviour accordingly.	The school campus, the learning environment and the school management supports an ESD approach in the classroom.	Democratic and participatory decision-making involving the whole school is formalised as part of the management structure.	Staff collaborate in action research to improve the student experience across subjects.	Students actively contribute to projects in the local community and the wider community.

Appendix D – Student Survey

Age: …….. **Gender:** Male Female (Please circle)

Section A

How do you view your course?

Place a 'X' next to each of the statements below to show how much you agree or disagree with it	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
1. My course helps me make decisions about what I want to do in the future				
2. I have the opportunity to voice my opinions about what happens in my school				
3. My course looks at how my vocational sector impacts on the environment				
4. I believe that my opinions are listened to when I speak in class				
5. My course looks at how climate change will affect my vocational sector				
6. My course provides visits to businesses and organisations in my community				
7. My course helps me think about what is happening in the world outside of school				
8. My course is preparing me for life in general and not just for work				

Section B

Are these topics relevant to your vocational course?

Place a 'X' next to each of these topics to show how relevant you think they are to your vocational course	**Relevant**	**Not relevant**
1. Managing money/basic economics		
2. Health and well-being		
3. Future training, career opportunities and employment		
4. Equality and cultural diversity		
5. Saving energy		
6. Consuming resources/managing waste/recycling		
7. Climate change		
8. Links between my vocational course and the natural environment		
9. Developing ideas and starting a business		
10. Citizenship/decision-making/democracy		

Section C

Which methods of learning do you like?

Place a 'X' next to the 3 learning activities you like the most and the 3 you like the least	**Three activities I like the most**	**Three activities I like the least**
1. Class discussion and questioning led by the teacher		
2. Individual work (including online research)		
3. Practical work (experiments/making things/etc.)		
4. Presentation by the teacher		
5. Challenging tasks and problems to solve		
6. Visit out of school		
7. Visiting speaker in the class		
8. Group work or working in pairs		
Write here any other learning activity you like doing.		

Section D

What is most important for you in your future career?

Place a 'X' next to each of the statements below to show how important it is to you	**Very important to me**	**Important to me**	**Not important to me**	**I have not thought about this**
1. Working for a company that provides equal opportunities for all employees				
2. Earning a good salary				
3. Starting my own business and working for myself				
4. Getting enjoyment from my work				
5. Working for a company that has a good reputation on the environment				
6. Working for a company that supports the well-being of workers				
7. Being part of a team and getting on well with fellow workers				
8. Working for a company that provides opportunities to develop my skills and ideas				
9. Good work/life balance, with enough leisure time with friends and family				

Is there anything else that is most important to you in your future career?	

Section E

How concerned are you about the following issues?

Place a 'X' next to each of the issues below to show how concerned you are about it	**Very concerned about**	**Concerned about**	**Not concerned about**
1. **Population growth:** the rapidly growing number of people in the world			
2. **Endangered species:** the species of animals and plants that are disappearing from the world			
3. **Water and food:** a safe and secure supply of food and water for all people			
4. **Conflict:** international terrorism and war			
5. **Resources:** the overconsumption of the Earth's resources			
6. **Education:** access to education for all now and in the future			
7. **Poverty:** the lack of economic security among certain groups in society			
8. **Migration:** the mass migration of people because of war or famine or poverty			
9. **Climate Change:** global warming changing the climate			
Write here any other issue that you are concerned about.			
10. Do you believe that all the issues listed above are connected? Yes ☐ No ☐			

Thank you for taking part in this survey

Appendix E – Student Survey Results

TOTALS combined Latvia and Germany students (ages 16 – 20) percentages

SECTION A

	Strongly Agree %		Agree %		Disagree %		Strongly Disagree %		No Response %	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
A1	20.0	23.8	48.3	61.1	24.4	11.9	5.0	2.2	2.2	1.1
A2	30.0	22.7	53.3	64.3	14.4	11.9	1.7	1.1	.6	0
A3	19.4	16.8	50.6	60.0	20.0	16.8	6.1	5.4	3.9	1.1
A4	20.6	21.6	56.7	58.4	17.8	15.7	2.8	3.2	2.2	1.1
A5	10.6	9.7	27.8	50.8	39.4	31.4	19.4	8.1	2.8	0
A6	12.8	21.1	38.9	52.4	34.4	21.6	10.0	3.8	3.9	1.1
A7	23.9	34.6	53.9	40.5	16.7	20.5	4.4	2.7	1.1	1.6
A8	30.6	25.9	40.0	47.0	18.9	21.6	7.2	4.3	3.3	1.1

A1. My course helps me make decisions about what I want to do in the future
A2. I have the opportunity to voice my opinions about what happens in my school
A3. My course looks at how my vocational sector impacts on the environment
A4. I believe that my opinions are listened to when I speak in class
A5. My course looks at how climate change will affect my vocational sector
A6. My course provides visits to businesses and organisations in my community
A7. My course helps me think about what is happening in the world outside of school
A8. My course is preparing me for life in general and not just for work

SECTION B

	Relevant %		Not Relevant %		No Response %	
	1st	2nd	1st	2nd	1st	2nd
B1	76.7	84.3	23.3	15.7	0	0
B2	63.9	74.1	36.1	24.9	0	1.1
B3	77.8	92.4	21.7	7.0	.6	.5
B4	57.8	55.7	42.2	43.8	0	.5
B5	45.6	53.5	53.3	46.0	1.1	.5
B6	61.1	68.1	37.8	31.4	1.1	.5
B7	33.3	56.2	63.9	43.2	2.8	.5
B8	49.4	64.9	45.6	34.6	5.0	.5
B9	56.7	69.7	41.1	29.2	2.2	1.1
B10	73.9	71.9	25.0	27.6	1.1	.5

B1. Managing money/basic economics
B2. Health and well-being
B3. Future training, career opportunities and employment
B4. Equality and cultural diversity
B5. Saving energy
B6. Consuming resources/managing waste/recycling
B7. Climate change
B8. Links between my vocational course and the natural environment
B9. Developing ideas and starting a business
B10. Citizenship/decision-making/democracy

SECTION C **Total combined (1st 121, 2nd 99)**

	Like Most %		Like Least %		Not Chosen %	
	1st	2nd	1st	2nd	1st	2nd
C1	50.4	28.3	33.9	52.5	15.7	19.2
C2	31.4	37.4	51.2	40.4	17.4	22.2
C3	52.9	39.4	24.0	35.4	23.1	25.3
C4	33.9	25.3	38.0	52.5	28.1	22.2
C5	11.6	16.2	62.0	47.5	26.5	36.4
C6	62.8	66.7	14.1	14.1	33.1	19.2
C7	11.6	13.1	47.1	58.6	41.3	28.3
C8	33.9	54.6	33.1	20.2	33.1	25.3

C1. Class discussion and questioning led by the teacher
C2. Individual work (including online research)
C3. Practical work (experiments/making things/etc.)
C4. Presentation by the teacher
C5. Challenging tasks and problems to solve
C6. Visit out of school
C7. Visiting speaker in the class
C8. Group work or working in pairs

SECTION D

	Very Important %		Important %		Not Important %		Not Thought About %	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
D1	47.8	41.1	44.4	49.2	7.2	5.4	.6	4.3
D2	70.0	63.2	28.9	33.5	.6	2.2	.6	1.1
D3	23.9	34.6	42.8	31.9	25.6	19.5	7.8	14.1
D4	68.3	56.8	26.7	30.8	3.9	8.7	1.1	3.8
D5	23.3	18.4	43.9	54.6	27.9	16.2	5.0	10.8
D6	50.6	52.4	41.1	40.5	5.0	4.3	3.3	2.7
D7	59.4	61.6	36.1	30.8	3.3	4.9	1.1	2.7
D8	56.1	53.0	38.9	42.2	3.9	2.2	1.1	2.7
D9	68.9	67.6	27.2	26.0	2.2	3.2	1.7	3.2

D1. Working for a company that provides equal opportunities for all employees
2D. Earning a good salary
D3. Starting my own business and working for myself
D4. Getting enjoyment from my work
D5. Working for a company that has a good reputation on the environment
D6. Working for a company that supports the well-being of workers
D7. Being part of a team and getting on well with fellow workers
D8. Working for a company that provides opportunities to develop my skills and ideas
D9. Good work/life balance, with enough leisure time with friends and family

SECTION E

	Very Concerned %		Concerned %		Not Concerned %	
	1st	2nd	1st	2nd	1st	2nd
E1	18.9	15.7	49.4	39.5	31.7	44.9
E2	40.0	27.0	41.1	54.1	18.9	18.9
E3	52.8	53.0	37.8	39.5	9.4	7.6
E4	60.0	57.3	27.9	33.0	12.2	9.7
E5	37.8	36.8	50.6	50.8	11.7	12.4
E6	36.1	35.7	46.1	47.0	17.8	17.3
E7	42.8	40.0	42.2	48.1	15.0	11.9
E8	36.1	30.8	43.9	44.3	20.0	24.9
E9	34.4	39.5	42.2	43.2	23.3	17.3

E1. **Population growth:** the rapidly growing number of people in the world
E2. **Endangered species:** the species of animals and plants that are disappearing from the world
E3. **Water and food:** a safe and secure supply of food and water for all people
E4. **Conflict:** international terrorism and war
E5. **Resources:** the overconsumption of the Earth's resources
E6. **Education:** access to education for all now and in the future
E7. **Poverty:** the lack of economic security among certain groups in society
E8. **Migration:** the mass migration of people because of war or famine or poverty
E9. **Climate Change:** global warming changing the climate

E10. Do you believe all the issues are connected?

	Connected %		Not Connected %		No Response %	
	1st	2nd	1st	2nd	1st	2nd
E10	75.6	86.5	13.3	12.4	11.1	1.1

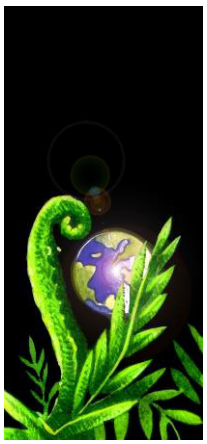
Erasmus Project - Methods For ESD Competences and Curricula (MetESD)

Initial External Evaluation Report Following the First International Meeting

Friesoythe – February 2016

Glenn Strachan

Contents:



Sustainability Through Education

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1. Introduction

This report arising from the first international meeting of the Erasmus MetESD Project has two distinct sections. The first is a brief summary of the data collection conducted at the meeting in Friesoythe. The second part of this report contains a proposal for the subsequent evaluation of the MetESD Project based on the requirements set out in the Erasmus application and further informed by the data gathered at the meeting in Friesoythe.

The rationale that underpinned the data collection activity in Friesoythe was determined by the role of external evaluation as described in the Erasmus application and the existing literature on the nature and characteristics of ESD.

2. Review of teachers' current perspectives on ESD

The first international meeting of the MetESD Erasmus project was attended by fourteen practising teachers from four vocational schools in three of the partner countries. The breakdown of these teachers is presented in Table 1. These were the teachers who would be exposed to the training elements of the MetESD Project and they will be expected to promote and implement an ESD pedagogical approach during the three years duration of the Project.

School	Country	Teachers
Daugavpils Technikum	Latvia	7
BBS Friesoythe	Germany	4
Bonnefonten College	The Netherlands	2
Emma College	The Netherlands	1

Table 1

2.1. Details of the data collection

The purpose of collecting data on the teachers at the first international meeting was to establish the level of awareness of, and engagement with, ESD among the teachers and the extent to which their current pedagogical practices reflected an ESD approach to teaching and learning. Data was collected using instruments that were based on existing frameworks of ESD (Scott and Vare, 2008; UNECE, 2008; ENSI, 2007; Strachan, 2012 and DCELLS, 2008). Also taken into account was the model prepared by the Project managers and shared with participants (see Figure 1 below).

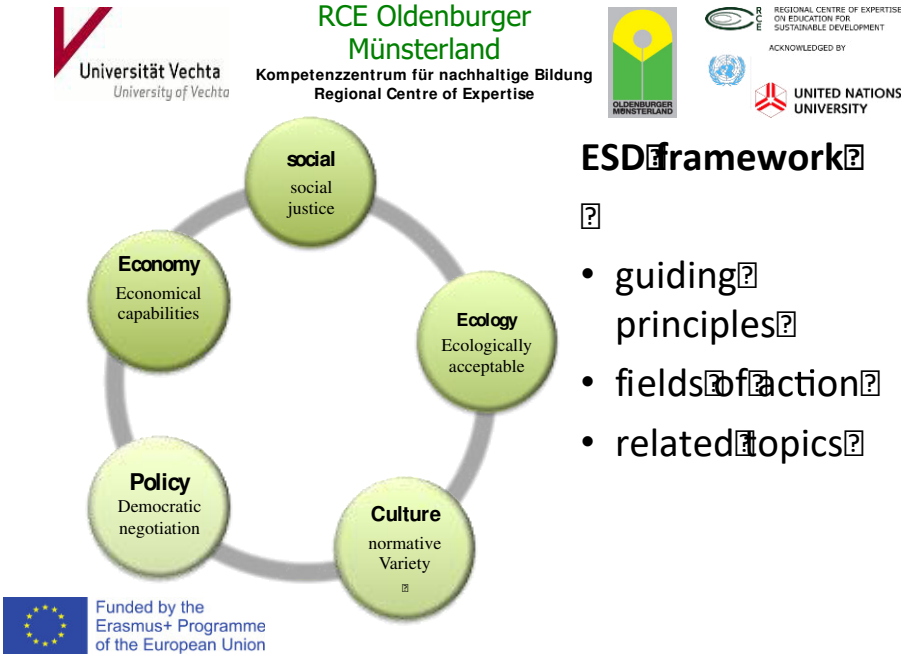

Figure 1

An initial activity conducted with all participants at the meeting was a diamond ranking exercise based on the model of 'ESD1 and ESD 2' (Scott and Vare: 2007). ESD 1 involves changing behaviour and implementing practical changes to improve current practices to make them more sustainable, while ESD 2 requires a more fundamental change to an individual's worldview, and developing the capacity to think critically and systemically. ESD 1 is viewed as easier to engage with and implement, while introducing the changes associated with ESD 2 is seen as a greater challenge. Scott and Vare argue that ESD 2 complements ESD 1 and that to fully implement ESD, both are required. For the diamond ranking exercise the teachers operate in their school/country groups, with the Latvian teachers forming two groups due to their greater numbers. This amounted to four groups of teachers in total.

In order to further assess the extent to which the teachers participating in the Project held a view of education that was conducive to an ESD approach to teaching and learning, all fourteen of the teachers present at the meeting were surveyed. The survey required the teachers to respond to sixteen ESD related statements using a Likert-type scale. The results of the survey are attached as Annex A on page 12.

The survey was backed-up by interviews with a sample of six of the teachers, one male teacher and one female teacher were selected from each of the three

partner countries. No additional selection criteria were used. The interviews explored details of the teachers' professional practice and the extent to which they already used methods in the classroom that reflected an ESD approach to teaching and learning. The question guidelines for the interviews forms Annex B on page 13 of this report.

Finally, the teachers were asked to work in their school groups and complete a grid for the school as a whole. The grid contained seven aspects of the whole-school implementation of ESD. Each aspect had four statements that represented progressive development of the implementation of that aspect of ESD in the school. The teachers had to indicate which statement best represented the situation in their school.

2.2. Outcomes from the data collection

The diamond ranking activity engaged all participants at the meeting in a discussion on the nature of ESD. The statements considered most important as a result of the discussions in the four teacher groups were recorded. All the teacher groups showed a bias towards regarding ESD 1 related statements as being more important than ESD 2 related statements. The top three statements considered most important in relation to ESD in each of the four groups were dominated by ESD 1, with only two ESD 2 statements being selected among the twelve statements (top 3 statements x 4 groups). The ESD 1 statements refer to more concrete actions and changes as opposed to the more transformative changes associated with ESD 2. The outcomes from this activity would be consistent with teachers at a comparatively early stage of engagement with ESD.

The results of the survey show a broad consensus among the teachers in terms of holding a view of teaching and learning that can be considered consistent with an ESD approach to education. There is close to unanimous agreement on issues such as recognising that all teaching is value-laden; the teaching environment should reflect the values being taught; students should be active participants in their own learning; teachers are co-learners with their students; and ESD is important for equipping students for life beyond school. The teachers were generally consistent in terms of the principles underpinning what students should be taught including an understanding of the ecosystems which they depend on; the ability to think critically and reflect; issues of equality, justice and democracy; and the need to understand the business case for sustainable development, which relates strongly to the entrepreneurship theme of the MetESD project.

The survey also produced a few interesting anomalies and contradictions, especially where the responses were divided between ‘agree’ and ‘disagree’. There was an even split with regard to whether education should be about transforming the worldview of individuals. Transformative education features as a strong characteristic of ESD in the literature referenced at the end of this report and the teachers were generally in agreement on the importance of students developing a global perspective. The nature of knowledge in the realm of education was an area of disagreement within the group and in relation to ESD. The teachers were divided on the extent to which learning is based on transferring a fixed body of knowledge, and while thirteen of the teachers agreed that knowledge is not fixed and that the answers to complex questions can change over time; thirteen teachers also agreed that students should be given certainty about the view to hold on a controversial issue. This tends to be contrary to the view in ESD literature that knowledge has emergent properties and that uncertainty exists in relation to many complex issues.

There is a split in opinion in respect of the statement ‘ESD is not equally relevant to all subjects’. This is an indication of whether the teachers see ESD as being defined primarily by content or by pedagogical approach. This is an area for further debate in future meetings. Finally in relation to the survey, all the teachers agree (eleven strongly agreed) that teachers in general need to continually develop and evolve their practice. While this should be expected of teachers committed to a project like MetESD, it also suggests that the teachers would be open to incorporating a research approach into their professional practice.

The outcomes from the six interviews supported the picture that emerged from the survey and added additional details in some areas. The broad areas of content associated with ESD were reported as being addressed by all the interviewees through their current curricula. The interviewees were asked to consider the extent to which they employed a range of teaching methods in their professional practice. These methods were participatory, student-centred and relevant to an ESD approach. The interviewees indicated that these methods were in common usage on a regular or occasional basis. There were no significant indications of some methods being more commonly used than others. However, one interviewee reported a strong reluctance among some longer serving colleagues at the school to adopt these methods, which has implications for dissemination of changes promoted by the MetESD Project.

All of the interviewees appeared confident in developing methods and content within the confines of their own classroom practice. However, the biggest differences emerged between countries in terms of the potential to significantly change the

structure and content of curricula. Schools in the Netherlands appear to have the greatest flexibility in this respect, while schools in Latvia and Germany have significantly less flexibility.

While the survey indicated that the teachers recognised the importance of their students developing a global perspective, the reality reported by the interviewees was one of the students being either focused on their immediate future or lacking a future perspective altogether. This is another potential area for the MetESD Project to explore.

When asked if they could change something to improve their teaching practice, one theme that emerged from several of the interviewees was the need for more time and larger blocks of time with their students.

The final element of data collection at the international meeting was the completion of the institutional grid by the teachers from each school. The grid provided a snap-shot of where the teachers considered their school to be in terms of implementing ESD. The completed grids indicate that ESD is adopted by some subjects in the schools, but not by others, providing an opportunity for the MetESD Project to develop a more holistic approach to curriculum development with regard to ESD. Another area for significant development relates to the awareness and attitudes of students, which supports the findings of the survey and the interviews. There were very divergent views in relation to 'Leadership and Decision-Making' with schools identifying either the first or the last statement in that column. All other areas were broadly in agreement with the schools identifying either the second or third statement as being most appropriate for their institution. This included the statements on 'Research and Monitoring', which indicates both some engagement in this area and potential for further development.

2.3. Summary of the teachers' perspectives and implications for the evaluation

The teachers committed to the MetESD Project are, at the very least, partially engaged with the concept of an ESD approach to education and open to further development in terms of their professional practice. The teachers appear to hold a remarkably common perspective on teaching and learning, and it is a perspective that can be considered to be compatible with an ESD approach. However, there are several areas of teaching and learning that could be targeted through the Project in order to impact positively on the experience of students in the partner schools. These include developing a transformative approach to education inherent in ESD (Sterling 2001 and 2011); encouraging students to re-assess their worldview; developing a

futures perspective – personal, local and global; and enabling students to cope with complexity and uncertainty with regard to certain issues.

The potential for a more holistic approach to curriculum development may be variable across the partner countries with external factors such as government policy and examination requirements preventing structural change in some contexts, while all partners appear open to innovation and change to the delivery of teaching and learning at course level, including sustainable entrepreneurship.

The openness among the teachers to continuing their professional development is commensurate with an ESD approach and presents an opportunity to develop the research skills of the teachers in relation to the implementation and evaluation of the Project.

The interviews confirmed that the majority of teachers work with annual cohorts of students, although some teach the same group over a two year period. This has implications for the timing of student surveys within the three years duration of the Project.

3. Proposal for subsequent evaluation of the MetESD Project

This section sets out the perceived purpose of the external evaluation as presented in the Erasmus application. This is followed by a plan for completing the external evaluation and some key questions to be resolved in discussion with the Project Coordinator and the Project Management Team at the University of Vechta.

3.1. Role and purpose of external evaluation in the MetESD Project

The role of external evaluation as presented in the Erasmus application document relates to assessing pedagogical changes to the professional practice of the teachers involved in the MetESD Project, which result from the ESD training programme. The evaluation is also concerned with the impact of these pedagogical changes on the learning experiences of the students in the vocational schools. The aim of the external evaluation is presented in the application as follows.

> *"The aim of the external evaluation is a quantitative and qualitative survey on the implementation of the modules in the subject curricula of schools.*
> *Firstly it shall demonstrate, which effects the lessons have on the attitudes and performance of students. And secondly the impact on the teaching skills of the school's staff shall be tested."* (Erasmus Application: page 46)

Furthermore the role of the 'critical friends' is seen as part of the external evaluation process and can be used as a vehicle for assessing the impact of the Project on institutional change in the participating vocational schools.

> *"An external evaluation and self-evaluation by a peer review of so-called "critical friends" shall assess the possibilities and difficulties of implementation, in order to secure the quality of curriculum development.*
> *The implementation of modules in the subjects with a focus on students with learning disabilities is to make a contribution to the motivation and entrepreneurship concerning the above-mentioned clientele."* (Erasmus Application: page 42)

The application also indicates that the University of Vechta will carry out research activities as part of the Project. Collaboration between the University and the external evaluation will be beneficial for the evaluation and the Project generally. However, it will be important for the final external evaluation report to be written from a partially detached perspective.

It would seem logical that if it is the impact of the Project on the teaching and learning in the schools that is being evaluated, it will be necessary to compare the experience and attitudes of a cohort of students prior to any curricula or pedagogical changes taking place, with the experience and attitudes of a subsequent cohort after the changes have been implemented. Given the current timing of the Project from now until summer 2018 the following evaluation proposal suggests surveying the current cohort of students at the end of the current academic year (May/June 2016); implementing changes during the next academic year (2016/17); and surveying the 2016/17 cohort of students in May 2017.

ESD is a broad concept open to differing interpretations. The data collected at the first international meeting indicates a broad consensus among the participating teachers in terms of their views on ESD. Additionally the view was clarified by the presentation from Detlev at the meeting, with the focus on sustainable entrepreneurship in the vocational context. However, the data collected at the meeting does highlight aspects relating to ESD that were particularly less developed among the participating teachers. These were identified in section 2.3 above and they could be seen as areas where there is potential for the greatest impact in terms of developing teaching and learning practices. The areas are: a transformative approach to education; encouraging students to re-assess their worldview; developing a futures perspective – personal, local and global; and enabling students to cope with complexity and uncertainty with regard to certain issues.

The Project management has already produced a grid of 'Dimensions' and 'Competences' which form a framework of competences for the Project. Table 2 has expanded on the grid in order to explore in a little more detail what might be targeted in the evaluation process in respect of this framework.

Dimensions Competences	**Knowledge**	**Skills**	**Attitude**
Issue competence *(Caring for the natural and built environment that relates to the vocational context)*	About vocational fields related to ESD *Awareness of sustainable development issues relating to their vocational area*	Working with methods and instruments *Selecting and applying methods and knowledge in relation to sustainable development in the vocational context*	Global learning Green economy saving environment *Adopting the values for prioritising the sustainable option*
Social competence *(Caring for others)*	Communication, teamwork *Understanding the networks associated with the vocational area e.g. supply chains*	Solving conflicts Steering dialogues *Leadership skills and advocacy in regard to sustainable development options*	Open-mindedness Empathy Solidarity *Open to changing ideas, empathy with others in the networks*
Self competence *(Caring for yourself)*	Personality, emotion Behaviour *Understanding own abilities, ambitions and limitations*	Designing own life- and career curriculum *Future visioning and action-planning*	Courage and heart Authenticity *Re-assessing individual worldview*
Design competence *(Taking action on the above)*	About process designing structure building *Understanding the consequences of your actions*	Designing processes and products *Moving from planning to action and applying systems thinking*	Dealing with variety and difference *Adopting a systems perspective*

Table 2

3.2. Proposed external evaluation plan for the MetESD Project

Table 3 is an outline action plan for the external evaluation. The quantitative questionnaire will collect basic data on the competences by assessing knowledge and skills from the students perspective. It can also test attitudes through ranking exercises and Likert scales, however, it will need to be kept reasonably simple in order to aid translation and administration. Developing the teachers as researchers

should allow for significantly more in-depth data to be collected, particularly in relation to teaching and learning methods and changes in students' attitudes.

Action	Timing
Draft and pilot first quantitative questionnaire for students	April to early May 2016
Circulate first quantitative questionnaire for students to schools for translation and administration. Return results to Glenn Strachan	May to mid-June 2016
Develop 'teacher as researcher' training input with University of Vechta; to cover in-classroom research and critical friend research.	Sept to Oct 2016
Deliver the training to the teachers at the second international meeting. Brief them on the research tasks.	Nov 2016
Teachers conduct their own classroom research in their own school.	Dec 2016 to June 2017
Evaluation interim report to the Project management to be included in the Interim Project Report. (This will include feedback on the first student survey and an update on the ongoing teacher research.	Spring 2017
Critical friend research in partner schools. Critical friends investigate whole-institution ESD implementation with a focus on curriculum development, sustainable entrepreneurship and equality.	April 2017 to Oct 2017
Circulate second quantitative questionnaire for students to schools for translation and administration. Return results to Glenn Strachan	May 2017
Feedback from teachers on classroom research to Glenn Strachan.	By end of June 2017
Feedback on critical friend research to Glenn Strachan either by email or possibly at the third international meeting.	Nov 2017
Draft evaluation report complete and presented at the fourth international meeting.	May 2018
Final evaluation report including any amendments to the draft report.	June 2018

Table 3

3.3 Points for discussion with the Project Management Team at the University of Vechta

Are we correct in measuring the difference between two annual cohorts of students?

Is there anything missing in terms of the focus of the evaluation?

Is the grid in Table 2 a good framework to evaluate against?

Can we ask Claudia Kruhl to pilot the first student survey with one class at BBS Friesoythe?

Who should be responsible for translation? Can the supporting organisations help with this and the administration?

Do the timings for evaluation fit with other activities you have planned for the Project?

How does research fit in with the intended role of 'critical friends'?

4. References

DCELLS, 2008, *Education for Sustainable Development and Global Citizenship: A Common Understanding for Schools.* Information document 065/2008. Cardiff: Welsh Assembly Government.

ENSI, 2008, *Competencies for ESD (Education for Sustainable Development) teachers: A framework to integrate ESD in the curriculum of teacher training institutes*. Comenius 2.1 project 118277-CP-1-2004-BE-Comenius-C2.1, 2008, Brussels

United Nations Economic Commission for Europe (UNECE), 2011, Learning for the Future: *Competencies in Education for Sustainable Development.* UNECE/CEP/AC.13/2011/6

Scott, W. and Vare, P. 2007, *Learning for a Change: Exploring the Relationship Between Education and Sustainable Development.* Journal of Education for Sustainable Development September 2007 vol. 1 no. 2: 191-198

Sterling, S. 2001, *Sustainable Education: Re-visioning Learning and Change*. Schumacher Briefings, No. 6. Devon, UK: Green Books.

Sterling, S. 2011, Transformative Learning: Sketching the Conceptual Ground. Learning and Teaching in Higher Education Issue 5: 17-33. Cheltenham: University of Gloucestershire.

Strachan, G. 2012, *WWF Professional Development Framework of Teacher Competences for Learning for Sustainability*. Godalming: WWF-UK.

UNESCO, 2014, *Global Action Plan on ESD.* Paris: UNESCO.

Annex 1 - Results of the Teacher Survey

	Strongly Agree	Agree	Disagree	Strongly Disagree
Learning is based on transferring a fixed body of knowledge.		6	6	2
Values and attitudes are always present in teaching.	9	5		
All students need to be aware of their dependence on natural ecosystems.	5	9		
Critical thinking and reflection are important skills for all students.	10	4		
Education is not about transforming the worldview of individuals.		7	5	2
The teaching approach and the learning environment should reflect the values being taught.	5	9		
All teachers need to continually develop and evolve their practice.	11	3		
ESD is not equally relevant to all subjects.	1	7	4	2
Students should know that knowledge is not fixed and that the answers to complex questions can change over time.	7	6	1	
Students only learn if they are active participants in their own learning.	6	8		
Students should be more concerned about their future career than about global issues.	1	1	10	2
ESD is important for equipping students for life beyond school.	5	9		
Students need to be given certainty about the view to hold on a controversial issue.	3	10	1	
All students need to explore issues of equity, justice and democracy as part of their curriculum.	5	9		
The business case for sustainable development should be part of the curriculum.	2	11	1	
Teachers should adopt a co-learning approach with students while providing guidance and showing leadership.	7	7		

Annex 2

Baseline semi-structured interview guide for vocational school teachers

Freisoythe – February 2016

Name: School/College:

How large is the school/college?

What is your role/what subject(s) do you teach?

What age groups do you teach?
Will you be teaching any students for the full duration of the Erasmus project or do your students change each year?

How long have you been teaching?

To what extent, if at all, has ESD been introduced into the school/college?

What are the main factors that are responsible for the curriculum that you teach?

How would you describe the pedagogical approaches that you use?
What are the dominant pedagogical approaches in the school/college?
(Explore approaches such as didactic, participatory, out of classroom learning, problem solving, group work, independent learning, project work, etc.)

Is there any collaboration between subjects?

What would you say are the biggest challenges for your students?
If you asked them what would they say were their biggest concerns for the future?

Where do your students go/what do they do, when they leave the school/college?

Can you give any examples of how the way the school/college is managed supports or conflicts with what is taught in the classroom? (E.g. valuing diversity, managing school grounds, energy use, recycling.)

Do any of the following areas feature in your teaching?

- Environmental issues e.g.
    - Climate change
    - Ecosystems
    - Species loss/biodiversity
- Social issues e.g.
    - Equality
    - Cultural diversity
    - Democracy/decision-making
- Economic issues e.g.
    - Wealth and poverty
    - Employment
    - Consumption

How often does your teaching engage students to:

- Engage in debates and decision-making
- Work both independently and collaboratively
- Challenge existing assumptions and reassess their values
- Develop their thinking skills (systems thinking, critical thinking, creative thinking and reflection).
- Link actions to consequences.
- Develop strategies for coping with complex open-ended questions.
- Develop alternative visions for the future
- Take part in assessments that are formative and cover attitudes as well as knowledge and skills.

(Never; Occasionally; On a regular basis e.g. every 2 weeks; Every lesson)

If you could change anything about your teaching environment, your curriculum or your teaching approach, what would it be?

Are there any opportunities to share ideas with other staff through meetings, training sessions or team teaching?

Is there anything else that you would like to say about ESD in your school/college?