

A Rounder Sense of Purpose: developing and assessing competences for educators of sustainable development

Lo studio europeo *A Rounder Sense of Purpose* per sviluppare e valutare le competenze per gli educatori dello sviluppo sostenibile

Paul Vare^{a,1}

^a University of Gloucestershire, pvare@glos.ac.uk

Abstract

A Rounder Sense of Purpose is a three-year European Union-funded project. In its first phase has developed a concise set of educator competences for the teaching of education for sustainable development based on a more extensive framework developed by the United Nations Economic Commission for Europe in 2011. An important factor in promoting the use of such competences is having a means to assess them. The project has used an assessment approach based on the peer review of dialogue stimulated by brief presentations with follow-up question and answer sessions. Dialogue is assessed in terms of horizontal and vertical learning. This paper reports on an action research exercise based on this assessment approach involving over twenty student volunteers. Initial findings suggest that the approach may provide an efficient and effective means of assessing affective learning in relation to sustainability education.

Keywords: education for sustainable development; sustainability; competences; assessment; action research.

Abstract

Il progetto di ricerca dal titolo *A Rounder Sense of Purpose*, della durata di tre anni, ha sviluppato, nella sua prima fase, un sintetico set di competenze educative legate all'insegnamento dei temi dello sviluppo sostenibile. Esso ha come riferimento il quadro sviluppato dalla Commissione economica per l'Europa delle Nazioni Unite nel 2011. Un mezzo per promuovere l'utilizzo di tali competenze è rappresentato dalla predisposizione di dispositivi per la loro valutazione. L'approccio utilizzato nel progetto di ricerca per la valutazione si basa sulla peer review e sul dialogo, stimolati da brevi presentazioni con sessioni di domande e risposte di follow-up. Il dialogo è valutato in termini di apprendimento orizzontale e verticale. Il presente articolo intende riportare una attività di ricerca-azione che ha inteso sperimentare questo approccio valutativo, con il coinvolgimento di oltre venti studenti volontari. I risultati preliminari suggeriscono che l'approccio adottato può fornire uno strumento efficiente ed efficace per valutare l'apprendimento affettivo in relazione all'educazione alla sostenibilità.

Parole chiave: educazione allo sviluppo sostenibile; sostenibilità; competenze; valutazione; ricerca-azione.

¹ The author is indebted to the Erasmus+ programme for funding *A Rounder Sense of Purpose* and to all members of the project team, especially Rick Millican for co-organising the UK student programme.

1. Introduction

Concerns that environmental and social challenges threaten our wellbeing if not the habitability of the Earth have led the global community, under the auspices of the United Nations (UN), to define 17 Sustainable Development Goals (Unesco, 2017), which it is hoped, every nation will strive to achieve. Making this effort relevant and achievable in each country is no small task because currently most of our commonplace actions contribute cumulatively to our unsustainable condition. There is much to be learned - but then learning our way forward, if not “learning just in time to cope” (Foster, 2008, p. 16) is perhaps a sensible way of understanding the process of sustainable development. This is a serious challenge for educators. While the UN Sustainable Development Goals offer us content and context, they do not in themselves facilitate critical education for sustainable development and global citizenship. Indeed the Goals can read like a top down “to do” list rather than an engaging opportunity for learners to re-create a better world using their own skills, knowledge and creativity.

This paper presents the draft outcomes of the EU-funded project called *A Rounder Sense of Purpose* (RSP). The RSP framework represents an effort to balance the tendency to promote preferred *green behaviours* with the capacity to think critically about and beyond sustainable development concepts and, crucially, to develop the competence to build this capacity in others. More specifically the paper describes a small-scale action research project, conducted by the RSP team in the UK, that has been focusing on the assessment of student educators who have been following a programme based on the RSP competence framework.

2. Developing competences for Education for Sustainable Development educators

The global effort to achieve sustainable development has implications for (a) what is taught and (b) the way that education is conducted. These two sides of Education for Sustainable Development (ESD) have been described by Vare and Scott (2007) as ESD 1: *promoting informed behaviours and ways of thinking* and ESD 2: *building capacity to think critically about and beyond sustainable development concepts*. Sterling (2014) claims the first approach calls for *transmissive* pedagogies whereas the second demands a *transactional* pedagogy, based on dialogue. It is essential for ESD 1 and ESD 2 to be combined in order to fully inform and engage learners, which can in turn lead to *transformative* learning.

While the Sustainable Development Goals (SDGs) offer the educator content and context (for ESD 1), they cannot in themselves develop educators who have the competence to facilitate critical ESD and global citizenship (ESD 2). To address this concern, a number of efforts have been made to develop frameworks of competences for ESD (Sleurs, 2008; Unece, 2012; Weik, Withycombe & Redman, 2011). The first two listed have provided rather cumbersome competence frameworks while the third relates to competences for sustainable development *per se* rather than being specifically for educators. The three-year EU-funded project *A Rounder Sense of Purpose* has been working since 2015 to develop an accredited framework of competences. This has been tested through bespoke educator training programmes among approximately 400 pre-service and in-service educators in six European countries led by the following institutions:

- University of Gloucestershire (UK);
- Italian Association for Sustainability Science (Italy);

- Frederick University (Cyprus);
- Hungarian Research Teachers' Association (Hungary);
- Duurzame PABO (The Netherlands);
- Tallinn University (Estonia).

The project is building on the United Nations Economic Commission for Europe framework of educator competences for ESD (Unece, 2012), which remains underused in a practical sense not least because the Unece competence statements are not written as assessable competences with clear links to learning outcomes. Furthermore, the number of statements (39) makes the framework unwieldy and includes some duplication.

Since early 2016 RSP partners have worked on “distilling” the Unece competences, i.e. reducing the number by removing repetition while identifying gaps. This was done with reference to other significant work in the field including Roorda (2012) who developed the Resfia+D framework and the work of Wiek et al. (2011) that informed Unesco's (2017) eight competences for sustainable development.

The resulting framework of 12 competences (Figure 1) is sub-divided into learning outcomes but it was decided *not* to break this down further into skills, values, knowledge, etc. for two principal reasons:

1. this atomises learning into discreet components that appear meaningless in the context of sustainable development and undermines the notion of holistic thinking that is central to sustainable development;
2. more pragmatically, there is no Europe-wide agreed format for such qualifications, rather each national qualification framework uses its own template for itemising assessable learning outcomes. Defining the award at this level of detail would therefore make it more difficult to apply across Europe.

Rather than providing a detailed breakdown of attributes, the RSP framework does propose a number of *underpinning components* linked to the learning outcomes that in turn relate to each of the twelve educator competences. The RSP website (forthcoming) also outlines a range of training activities that can help to develop the underpinning components and learning outcomes.

The RSP competences can be applied to various levels of the International Standard Classification of Education. RSP partners agreed programmes could be offered from Levels 4 to 7. At any given level there are three *stages*, which can be defined as “degrees of engagement and development”. The first of these stages is simply an acceptable level of participation in any given training programme related to the framework, the second stage requires a demonstration of some practical application of the competences while the third stage calls for an effort to facilitate change in others or within one's work setting.

Thinking Holistically	Envisioning Change	Achieving Transformation
Integration		
Systems	Futures	Participation
The educator helps learners to develop an understanding of the world as an interconnected whole and to look for connections across our social and natural environment and	The educator helps learners to explore alternative possibilities for the future and to use these to consider how our behaviours might need to change.	The educator contributes towards system level changes that will support sustainable development and develops their learners' ability to do the same.

consider the consequences of our actions.		
Involvement:		
Attentiveness The educator alerts learners to fundamentally unsustainable aspects of our society and the way it is developing and conveys the urgent need for change.	Empathy The educator is considerate of the emotional impact of the learning process on their learners and develops their self-awareness and their awareness of others.	Engagement The educator works responsively and inclusively with others, remaining aware of their personal beliefs and values and develops their learners' ability to do the same.
Practice		
Transdisciplinarity The educator acts collaboratively both within and outside of their own discipline, role, perspectives and values and develops their learners' ability to do the same.	Innovation The educator takes a flexible and creative approach using real world contexts wherever possible and encourages creativity within their learners.	Action The educator takes action in a proactive, considered and systematic manner and develops their learners' ability to do the same.
Reflection		
Criticality The educator critically evaluates the relevance and reliability of assertions, sources, models and theories and develops their learners' ability to do the same.	Responsibility The educator acts transparently and accepts personal responsibility for their work and develops their learners' ability to do the same.	Decisiveness The educator acts in a cautious and timely manner even in situations of uncertainty and develops their learners' ability to do the same.

Figure 1. The Rounder Sense of Purpose Competence Framework.

3. Assessing the Learning

A key issue for project partners is the development of assessment tools and techniques that would achieve constructive alignment (Biggs, 2003) with the pedagogical approaches being promoted by the competence training programmes. In discussion with learners on a small pilot programme run in the UK in 2017, it was suggested that this might include an assessment of:

- presentation and discussion of one's work with the competences including a question and answer session;
- the learner's engagement in the discussion/question and answer sessions of their peers;
- a portfolio (written or other media) that demonstrates a level of engagement with each of the competences.

The first two approaches rely on dialogue and reflect an open-ended approach to assessment that allows for external influences and unforeseen outcomes. It was agreed that assessment of this dialogue could be carried out by the students themselves and by their peers with the facilitator/assessor ensuring the engagement of all learners in the process

and moderating the results. The portfolio may be in the form of text or other media; this is used to assess the degree of engagement with the twelve competences of the RSP framework in a more structured manner. Thus triangulation, using different methods and approaches to assessment, builds a broader and more reliable picture of the learner's competence and compensates to some degree for the fact that all assessment is based on inference and is therefore incomplete (Mislevy, 1995).

4. An action research approach to developing dialogic assessment

In order to focus the broad question of how education on the RSP competences had affected participating students, we decided to investigate the extent to which engagement in the RSP programme had led to a potential, if not an actual, shift in attitudes and values among the learners. Naturally we would expect students to acquire some knowledge and skills by attending a learning programme but determining the extent to which this leads to *affective* change is not straightforward. Ultimately our aim is to develop a peer assessment tool that could be used to indicate affective development as well as cognitive and practical domains.

4.1. A theoretical framework

To explore this question further we turn to the work of Wegerif (2011) who differentiates between horizontal and vertical learning. For Wegerif, horizontal learning is about how we become socialised into different group norms but: "...it does not account for how we might learn to become more aware of our identifications in order to question and transform group norms" (p. 184).

A student learning to say – or even do – the right things represents *horizontal* learning. This is a function of horizontal thinking that can, in turn, be detected through horizontal dialogue. Horizontal dialogue, thinking or learning can be applied to many different things but the *depth* of engagement remains the same even as more knowledge is acquired. We might, for example, gain an encyclopaedic knowledge of the Sustainable Development Goals but this cannot be taken as an indicator of any kind of ethical or values shift.

For Wegerif (2011) a vertical dimension of dialogue is required to indicate the quality of *how* one is learning to think: "...the idea of learning to think cannot be left as a neutral account of processes of socialisation but implies a notion of learning to think well" (ibidem).

We can detect this deeper quality of learning through dialogue because of the way in which learners *perform* dialogue as if to a third person. Drawing on the work of Bakhtin (1986), Wegerif suggests that all dialogue is addressed to an unseen super addressee or Infinite Other and it is this quality of subliminal reflection and performance that brings us to the vertical dimension. Vertical dialogue (and thinking and thus learning) occurs in response to new events and across contexts; it is reflective and therefore challenges existing practices. This dimension can be detected through statements that demonstrate critical thinking and may lead to a consideration of underpinning ethical dimensions and values in any given situation.

We have thus taken Wegerif's vertical dimension of learners' dialogue or thinking as an indicator of affective impact based on the assumption that vertical learning would highlight examples of students internalising ideas and modifying their thinking and attitudes.

Vertical learning could in turn be seen as evidence of transformative learning; what Mezirow describes as “the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience in order to guide future action” (1996, p. 162). This learning involves learners reflecting on their meaning perspective and challenging their habits of mind (Mezirow, 1992).

4.2. The research instrument

In order to gather data on horizontal and vertical learning we turned to our RSP course participants: eighteen Level 5 (second-year) BEd students and four Level 5 BA Education students.

After agreeing voluntarily to participate in the research, the students were primed on horizontal and vertical dimensions of learning and dialogue. They were then set the task (that had already been scheduled mid-way through the programme) of preparing a brief presentation on the theme: “My learning and other impacts resulting from this course so far”. Each presentation was to be no more than ten minutes with five to ten minutes allowed for questions. Working in groups of four, students observed the presentations of three of their peers and participated in the subsequent question and answer session. During this time they completed a recording sheet indicating what they considered to be examples of horizontal and vertical learning (Figure 2).

Name: (peer observer)
Group member: (student being observed)
Horizontal thinking
(Examples noted by observer)
Vertical thinking
(Examples noted by observer)

Figure 2. Data recording sheet.

Time was set aside for presentations and peer recording at the start of two consecutive training sessions. The original intention was to conduct a second round of assessments with additional support for the peer assessors based on a review of the first round data. However, this was a voluntary programme and the time available to the students was restricted by formal lectures and teaching placements so it was not reasonable to expect them to prepare a second set of presentations. Instead the results presented here will be used to inform the process for the following year’s cohort.

4.3. Data analysis

The peer reviewers provided data of variable quality and quantity; this is unsurprising given that they were attempting this “blind” as neither they nor the teaching team had tried this before. Recorded comments on the horizontal and vertical dimensions of each presentation ranged from 60 word passages to single word remarks. Coding followed an emic approach, i.e. rather than allocating observers’ comments under the headings of a pre-determined framework, a total of sixteen codes emerged from a careful reading and re-reading of the data. “Saturation” (Richards, 2009) was reached when every comment had been coded.

A large number of comments are assigned the code Tautological remark; for example, stating *more knowledge* under Horizontal or *deeper* under Vertical. This is something that would be addressed in any subsequent round of observations. The remaining fifteen codes can be clustered under four broad headings (H = horizontal learning; V = vertical learning):

1. Action
 - changing own actions (H-V)
 - influencing action of others in domestic settings (H-V)
 - impact on classroom/professional practice (H-V)
 - new approach to applying the learning, e.g. target setting or modelling (V)
2. Reflection
 - (self-)reflection (H)
 - new knowledge for the student (H)
 - reflection on the role of education (H-V)
 - thoughts on socio-economic issues mentioned in course, e.g. capitalism (H)
 - posing new questions (V)
 - link to other external educational issue not mentioned, e.g. safeguarding (V)
3. Systemic thinking
 - recognising our own role within systems (H)
 - seeing complexity – big picture thinking (H)
 - independently linking competences (V)
4. Personal development
 - seeing one’s own role more clearly – sense of responsibility (H-V)
 - internal impact, e.g. enhanced own resilience (V)

The italicised codes denote those that are related unambiguously to attitudes and values while the others relate to knowledge and skills with varying degrees of affective content. The instances of H-V appearing together highlight a lack of clarity in the data; this is particularly evident where examples of actions taken in domestic and professional settings are listed as both horizontal and vertical learning. Simply transferring an action such as “switching off lights” from one setting to the other suggests horizontal learning although it has been listed as vertical. On the other hand, considering how to engage pupils by “modelling better behaviour” suggests deeper (vertical thinking) yet this has been listed as horizontal. Again, this is something that will be addressed with subsequent cohorts. In this way, the students’ approach to the exercise will enable us to develop guidelines for the next cohort while the data itself provides a useful range of possibilities that students can anticipate and build upon.

To explore this particular collection of student outcomes in more detail is not the intention of this paper although a few examples are offered here in order to illustrate the nature of

the comments gathered. In many cases the codes are self-evident and can be almost as long as the comments to which they refer. For example, under Action we have the code *New approach to applying the learning, e.g. target setting or modelling (V)*. This includes the following peer observations:

“Came up with targets related to competences that she can work on professionally and privately”; “Thought about being a role model for children and effectiveness of what he’s learnt.”

Under Reflection, the code for *(self-)reflection* denotes comments as brief as: “Recognising own lack of participation previously.”

The code for *Posing new questions* includes questions such as: “Should we all have the same goals to work towards?”; “Will we all be vegetarian?”; “How can you be empathetic as a teacher?”

Some of the comments translate complex ideas into plain language, something that may prove useful in conveying ideas to others; for example, under the code *Seeing complexity-big picture thinking*, a student has commented: “Has thought about the interconnectivity of all things and how all sorts can impact other things.”

Finally, under the Personal development cluster the code, *Internal impact, e.g. enhanced own resilience* was suggested by this promising outcome: “Able to control thoughts and feelings-feels resilient and can encourage that in the children in his class.”

These comments are necessarily brief because they are written quickly while peers are talking. While this has restricted the quantity of data available, in several cases it captures the essence of what the students have learned. Together, such comments form a kind of poetry of affective development. In light of this we have yet to decide whether we should offer students the opportunity to expand on these comments in future.

5. Discussion

The RSP competence framework addresses the need for ESD 2 (pedagogies of transaction); this provides a counter-balance to the more familiar ESD 1 approach (pedagogies of transmission) that explores the content and purpose of the SDGs. Together these approaches have the potential to offer a *pedagogy for transformation*.

A key challenge in disseminating and implementing the RSP approach lies in our ability to assess the level of engagement of learners as they work to gain the ESD educator competences. We feel that a focus on the dimensions of learner dialogue is helping us to do this efficiently. Our next step is to work with a new cohort of student educators to refine the approach and to research its effectiveness. A further round of such examples should enable us to develop a *mark sheet* of likely responses, crucially this will feature a range of affective outcomes. This in turn may be used to further calibrate the assessment for use with subsequent cohorts of student educators.

One interesting aspect of the horizontal-vertical confusion is that it suggests that while most students understand the course as a programme of professional development (in which case transferring the lessons to their personal setting has been listed as a vertical learning), some students see it the other way around. For them, the programme is full of lessons for life so that a colleague applying this to the classroom is also listed as demonstrating vertical learning. Of course the programme addresses the student as a professional *and* as an

individual *and* as a member of their wider community. The confusion this has created, as demonstrated by the observation exercise, suggest that we are possibly achieving some success in offering an education with a rounder sense of purpose.

At a minimum, this emerging assessment approach represents constructive alignment with three of the RSP competences, i.e. criticality, decisiveness and participation. At best, this emerging assessment approach has the potential to become one of the project's more significant if unforeseen contributions to learning for sustainability.

6. Conclusion

The first phase of *A Rounder Sense of Purpose* has developed a manageable range of competences for educators of sustainable development that reflect the more extensive Unece competence framework. RSP also provides a greater level of detail in the form of measurable learning outcomes and a range of likely underpinning components for each competence. Piloting of the RSP framework has led to the creation of a range of example activities for developing ESD competences among pre-service and in-service educators, all of which are available on the RSP website.

Developing assessment techniques for these competences has emerged as an important theme that will be pursued throughout a second phase of the RSP project. This dialogic approach, which has been conducted and deepened through a process of peer review, will hopefully offer a practical and meaningful assessment tool for affective learning in ESD. We look forward to reporting on further developments.

Bibliography

- Bakhtin, M. (1986). *Speech genres and other late essays*. Austin: University of Texas.
- Biggs, J. (2003). *Aligning teaching and assessment to curriculum objectives*. (Imaginative Curriculum Project, LTSN Generic Centre-Learning and Teaching Support Network). <https://www.heacademy.ac.uk/system/files/biggs-aligning-teaching-and-assessment.pdf> (ver. 15.07.2018).
- Mezirow, J. (1992). Transformation theory: Critique and confusion. *Adult Education Quarterly*, 42(4), 250–252.
- Mezirow, J. (1996). Contemporary Paradigms of Learning. *Adult Education Quarterly*, 46, 158–172.
- Mislevy, R. (1995). *Evidence and Inference in Educational Assessment*. Princeton: ETS.
- Richards, L. (2009). *Handling Qualitative Data*. London: Sage.
- Roorda, N. (2012). *Fundamentals of Sustainable Development*. London: Earthscan.
- Sleurs, W. (ed.) (2008). *Competencies for ESD (Education for Sustainable Development) teachers. A framework to integrate ESD in the curriculum of teacher training institutes*, Brussels. http://platform.ue4sd.eu/downloads/CSCT_Handbook_11_01_08.pdf (ver. 15.07.2018).

- Sterling, S. (2014). Separate Tracks or Real Synergy? Achieving a Closer Relationship between Education and SD, Post-2015. *Journal for Education for Sustainable Development*, 8(2), 89–114.
- Unece. United Nations Economic Commission for Europe (2012). *Learning for the future: Competences in Education for Sustainable Development*. Geneva: Unece.
- Unesco. United Nations Educational, Scientific and Cultural Organization (2017). *Education for sustainable development Goals: Learning Objectives*. Paris: Unesco.
- Vare, P., & Scott, W. (2007). Learning for a Change: Exploring the relationship between education and sustainable development. *Journal for Education for Sustainable Development*, 1(2), 191–198.
- Wegerif, R., (2011). Towards a dialogic theory of how children learn to think. *Thinking Skills and Creativity* 6 (2011) 179–190.
- Wiek, A., Withycombe L., & Redman, C.L. (2011). Key Competencies in Sustainability: A Reference Framework for Academic Program Development. *Sustainability Science* 6(2), 203–218.