

*Journal  
of  
Teacher  
Education  
for  
Sustainability*

*Volume 13, issue 2, 2011*



## Editorial

This issue of the *Journal of Teacher Education for Sustainability* consists of six papers. I would like to thank all the members of the Editorial board and also the language editors. My thanks are also due to the authors of the papers.

The paper by Smith details some of the activities and processes used to draft a sustainability strategic plan designed to address sustainability at the curricular level rather than merely the operational level within a large college of education at a large U.S. public university. The goal is to produce a coherent plan that (1) fosters awareness and encourage people to join the effort and (2) readily accommodates input as more people become involved. The plan consists of three position statements, five broad recommendations and 20 specific actions aligned with the five recommendations.

The paper by Armstrong and LeHew describes the development and implementation of a model for course redevelopment for education for sustainable development (ESD). The theoretical approaches to curriculum development of Tyler (1949) and Eisner (2002) were influential in the development of the model. The Tyler Rationale (Tyler, 1949) provided general scaffolding for the process and was particularly useful for the development of learning outcomes, while the philosophy of Eisner (2002), complementary to the tenets of ESD, was instrumental in designing classroom experiences to deliver the learning outcomes. Importantly, the model provides a way to empower the individual educator to integrate education for sustainable (ESD) at the course level as well as a useful mechanism to ensure the holistic application of ESD, aligning sustainability with the predilections of any discipline. This paper demonstrates the use of the model to redevelop an apparel product development course, reframing it for sustainability and sustainable development. The new course was piloted and has now been offered twice since its inception, resulting in a positive students' learning experience.

The purpose of the paper by Bliesner and her colleagues is to share the findings of a European innovation transfer project (2008–2010) for strengthening sustainability in European handicraft with the aim of transferring a German qualification and consulting concept. Focus of the paper is a train-the-trainer design, which was developed, tested and evaluated with regard to the specific qualification needs and the existing qualification concepts of five European countries. The paper provides content, didactic approach and methods of the train-the-trainer design and the key results of the related analysis of research data. Furthermore, the train-the-trainer design is embedded within the project approach, the methodology of realising an innovation transfer and the associated project products. The results of the train-the-trainer design evaluation are reflected upon with regard to starting points of a European qualification concept for sustainability in handicraft.

The paper by Oyetunji describes the leadership style which can sustain education in Botswana community junior secondary schools (CJSS). The concept was examined based on the policy of education in Botswana, Botswana's vision for 2016 and the current situation in schools. Data was collected by means of a questionnaire and semi-structured interviews from a random sample of community junior secondary school teachers and head-teachers in Botswana. The data suggests that the head-teacher's leadership style affects teachers' and pupils' attitude towards a job and studies and that a participatory leadership style promotes sustainable education in schools. These findings can be useful for education

policy makers, school administrators and researchers seeking to promote sustainable improvement in education.

The paper by Sachs and her colleagues dwells upon the results of a case study. A case study is presented of one senior university faculty member's experiences co-teaching with two doctoral students seeking to understand the impact of shared decision-making and authentic collaboration on individuals entering the academy. An analysis of the authors' shared experiences indicated that, through this mentoring, collaborative and mutually beneficial relationships were built. An analysis of the authors' experiences also indicated that these collaborative relationships were built upon several key factors, specifically a strong sense of individual accountability and professionalism, the mutual creation and demonstration of respect, affirmation and overt participation in reciprocal growth and development and attention to issues of power and abeyance. The findings of the study highlight the need for further exploration into the role of mentorship of junior faculty and the efficacy of co-teaching processes in the development of professional identities of junior faculty entering the academy.

The paper by Iliško explores teachers' self-evaluation of their competency to conduct research and to incorporate it in the classroom. Both qualitative and quantitative research methods were employed to seek answers about teachers' engagement with research and explore the factors of resistance for carrying out research in the classroom setting. This study also dwells upon some mechanisms that lead teachers to carry out an inquiry. The focus group interviews which were conducted reflect on the factors that encourage teachers to become more involved in the research and point to the advantages they perceive as emanating from the research. The qualitative part of inquiry reflects teachers' narrative ways of construction and reconstruction of their personal and professional knowledge. The authors discuss processes that foster teachers to move from the fragmentary use of research strategies to the ability to live in the inquiry, practice new behaviours in the classroom, unlearn the old ones, reflect in action and stay open to a range of new initiatives.

Astrīda Skrinda

*Journal of Teacher Education for Sustainability,*  
vol. 13, no. 2, pp. 5–16, 2011

## **DEVELOPING A SUSTAINABILITY PLAN AT A LARGE U.S. COLLEGE OF EDUCATION**

**Grinnell Smith**

San José State University, the United States of America

### **Abstract**

*Despite growing awareness of its importance, most sustainability education efforts in tertiary institutions do not significantly impact curricula. This paper details some of the activities and processes used to draft a sustainability strategic plan designed to address sustainability at the curricular level rather than merely the operational level within a large college of education at a large U.S. public university. The plan is also presented. Our goal was not to articulate a fixed policy but rather to produce a coherent plan that (1) fosters awareness and encourage people to join the effort and (2) readily accommodates input as more people become involved. The plan consists of three position statements, five broad recommendations and 20 specific actions aligned with the five recommendations. The hope is that our development processes, analyses and plan will be useful to other teacher education colleges and other groups with similar organisational structures interested in developing sustainability plans.*

**Key words:** *sustainability plan, U.S. college of education, SWOT analysis*

### **Introduction**

Despite growing awareness of its importance, sustainability education in U.S. schools is rare, in part because many view it as controversial (Curren, 2009). Indeed, most sustainability education efforts in tertiary institutions rarely significantly impact curricula (Everett, 2008). This is certainly true of the university where I teach, a large U.S. public university with an enrolment of about 30,000 students. Our campus boasts several LEED certified buildings, a state-of-the-art central energy plant, a solar PV system and several campus wide sustainability efforts, yet sustainability is a central focus of only a few dozen of thousands of courses offered. However, efforts to address sustainability more fundamentally are underway. At my university, the president recently formed a sustainability advisory board composed of a faculty member from each of the university's seven colleges. Encouraged to apply to the board by my department chair in the college of education, I wrote a synopsis of my qualifications and a statement about why I wanted the position, gathered the requested

signatures of support from the chairman and dean and submitted the application to the president's office. A short time later, I was notified that I had won the position handily, first in a line of one. This paper details some of the activities and processes my colleagues, and I engaged in that were useful in developing a sustainability strategic plan for the college of education. The plan itself is also presented. The hope is that it will be useful to other teacher education colleges as well as to groups with similar organisational structures and missions interested in developing sustainability plans.

## Understanding sustainability

At our first meeting, the board chair handed out large 3-ring binders outlining our responsibilities in terms of “deliverables,” a delivery timetable, some background reading and a framework for a recommended strategic planning method: the SWOT analysis. SWOT analyses involve identifying strengths, weaknesses, opportunities and threats so that the factors related to project success can be more explicitly managed. As might be expected from a roomful of professors, the handing-out of binders was greeted with immediate critique – from the pedestrian “why paper when you could've emailed?” to the more substantive “we shouldn't use SWOT because it encourages oversimplification”. After a brief discussion, we agreed that, yes, emailing documents was usually preferred, and using the SWOT framework would not prevent our use of other tools, and so we agreed to *begin* with SWOT, which, for those of us unfamiliar with the method (three of the seven) meant starting with the basics. The first task of a SWOT analysis is to carefully articulate a project's objective. However, it quickly became clear that although each of us could directly relate sustainability to our work, we could not define the concept broadly enough to capture its essence for everyone in the room without becoming so all encompassing as to be vacuous. Thus, our first task was to define our basic term of reference: what do we mean when we say *sustainable*? For this, we found guidance in the work of the United Nations.

In 1983, amid growing concern about the accelerating deterioration of the environment and the attendant social, cultural and economic consequences, the United Nations General Assembly convened the World Commission on Environment and Development (more commonly known as the Brundtland Commission) to propose long-term environmental strategies for achieving sustainable development. Four years later, the Brundtland Commission published *Our Common Future* (Brundtland, 1987), putting forward a succinct conceptualisation of sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. xiv). Although there was concern among us that the word “development” was problematic and also that the commission's view seemed anthropocentric, we agreed to adopt the Brundtland conceptualisation as our working definition of sustainability.

## **The responsibility of educators regarding sustainability**

Although I shared some of my colleagues' hesitation about the historically anti-environmental signifiers that travel with the word "development" and the apparent anthropocentrism of the Brundtland conceptualisation, as a professor of education I found the commission's work particularly interesting because of the heightened responsibility it placed on educators. The commission purposefully defined the report's terms of reference very broadly: as Brundtland wrote in the chairman's forward, the "environment" is where we all live; and "development" is what we all do in attempting to improve our lot within that abode" (Brundtland, 1987, p. xiv). This broad conception of sustainability (and the report's title) makes it clear that although the report was written for us all, it addressed the young in particular and noted that "the world's teachers have a crucial role to play in bringing this report to them" (Brundtland, 1987, p. xiv). The implied logic is simple: education must precede wise action.

Seeking to advance the recommendations of *Our Common Future*, the UNGA declared the decade from 2005–2014 as the United Nations Decade of Education for Sustainable Development with a goal "to integrate the principles, values and practices of sustainable development into all aspects of education and learning, in order to address the social, economic, cultural and environmental problems we face in the 21st century" (UNESCO, 2005, paragraph 4). Recognizing that teacher education institutions are well positioned as key change agents, in early 2005, UNESCO published a set of guidelines for reorienting teacher education towards sustainability (Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability, 2005).

## **Sustainability and the college of education**

Like the authors of the Brundtland Report and the UNESCO guidelines, my faculty-in-residence colleagues expected that the college of education might immediately assume a lead role in university sustainability efforts, given our position as key change agents who, by educating one teacher about sustainability, might reach hundreds of children. It seems a reasonable expectation; however, I was not as sanguine, being more intimately familiar with the historical, institutional and programmatic constraints that often impede reform in colleges of education. My less-than-optimistic views notwithstanding, I began the college SWOT analysis. Data from two main sources informed the analysis: lengthy discussions with each of the seven department chairs and two brown-bag lunches where faculty and staff discussed sustainability. To the extent possible without overly disrupting discussion, I took notes during each of the meetings and at both brown-bag lunches and then reviewed my notes immediately after each gathering. The resulting nine documents do not offer verbatim accounts of conversations, but rather represent an attempt to capture the essence of what was said.

Analysis of these documents followed Creswell's (1998) guidelines for categorical aggregation, interpretation and generalisation. Each document was read a minimum of four times, with at least two days between subsequent readings. Line by line coding was con-

ducted using an unmarked copy of the text for each reading, with provisional codes applied to phrases, sentences and segments of text that appeared to be related to any aspect of sustainability infusion into the work of the college. During this initial stage of data analysis, a very broad interpretation of the construct “infusing sustainability into the work of the college” was used, resulting a relatively large code list. After each document was coded four times, the four resulting code lists were compared and an attempt was made to form a single internally consistent code list for each document by revisiting the document once more specifically to re-examine areas of differences in the four code lists. The process was repeated with each document, resulting in a set of both etic and emic codes representing the data from all nine documents.

This code list was then arranged using the four SWOT categories in order to locate emerging themes within these categories (Adcock & Collier, 2001). These themes were identified using a process of direct interpretation: the presence of a given code was considered as representing a single instance of a construct without attempting to look for multiple instances or to divine the context in which the construct was situated (Creswell, 1998). Thus, each individual code was assigned to one or more category directly, without further examination of the data, and the resulting categories were then examined to identify underlying themes. The data was then examined once again with these themes in mind in order to make what Creswell (1998) refers to as “naturalistic generalizations”. Thus, themes in evidence in one document were cross-referenced with themes from other documents in an attempt to gauge the significance of the themes and the characteristic of a theme’s relationship to other themes. Themes that emerged as particularly important in relation to infusing sustainability into the work of the college informed the initial draft of the SWOT analysis.

In the spirit of action research and to increase the likelihood that the initial draft of the analysis was representative of the range of ideas and perspectives offered by the original discussants (Lewin, 1958), the draft was shared with a number of them, chosen for their availability and their stated willingness to offer feedback, and the draft was revised based on their comments. These comments required only minimal revision of the draft. To ensure the draft represented reasonable conceptualisations of the various concepts underpinning sustainability, the resulting draft was shared with the six other university sustainability board members, each of whom have expertise about various aspects of sustainability and sustainability education. Again, minimal revision was required and lead to the final draft of the analysis. Table 1 presents a summary of the primary findings in each SWOT category.

Table 1. Summary of SWOT analysis of the college of education

---

**Strengths:**

- a strong alignment between college mission and vision statements and sustainability goals
  - a belief that sustainability will be of increasing importance
  - an awareness regarding potential cost-savings of implementing sustainable practices (for instance, paperwork reduction, virtual field supervision, etc.)
- 

*Sequel to Table 1 see on p. 9.*

*Sequel to Table 1.***Weaknesses:**

- currently, virtually no explicit sustainability-centred instruction in any courses
- a perception that courses are too constrained by the requirements of certification to modify to address sustainability
- a lack of knowledge about the relationship between sustainability and the subject areas in which the faculty teach
- an absence of external incentives to pursue sustainability (for instance, retention, tenure, or promotion incentives)
- a perception that sustainability efforts would add to workload
- a perceived lack of time for the collegial interaction critical to plan and implement sustainability projects
- a perceived lack of interest from college and university administration

**Opportunities:**

- strong faculty and staff interest to learn more about sustainability
- a perception that focusing on sustainability might imbue work with new meaning and significance
- increasing mention of sustainability by accrediting agencies in programme assessment
- increased opportunities for external support and sponsorship from organisations that focus on the environment
- an interest in sustainability professed by many students

**Threats:**

- base budget allocations for sustainability difficult to obtain
- other colleges of education in our recruitment area perceived as “greener” and therefore can more readily recruit “green” students
- the prevalence of traditional disciplinary curriculum frameworks makes incorporating sustainability, which is trans-disciplinary, arduous
- many students discouraged by lack of attention to sustainability
- an ever-narrowing K-12 curriculum constrains teacher preparation programmes

**Drafting the sustainability strategic plan**

With the SWOT analysis in hand, a sustainability strategic plan was drafted using a public wiki to allow direct input from all who wanted to be involved. As the UNESCO guidelines point out, education for sustainable development must accommodate evolving views, even the evolving nature of the concept of sustainability itself. Thus, our goal was not to articulate a fixed policy but rather to produce a coherent plan to (1) foster awareness and encourage people to join the effort and (2) readily accommodate input as more people became involved. The sustainability plan consists of three position statements, followed by five broad recommendations aligned with those statements and 20 specific actions aligned with the five recommendations.

*Position statement 1: Sustainability serves our students*

When we incorporate sustainability into the core mission of the college, we serve students in their personal lives by encouraging them to become more deeply involved in issues that will profoundly shape their futures. Increasingly, sustainability is moving to the fore: in

2008, Ecuador became the first country on the planet to recognise the inalienable rights of nature (Community Environmental Legal Defense Fund, 2008); U.S. law schools are rearranging their curriculum to address environmental law (Kingsolver, 2010); environmental issues are increasingly central to getting elected to public office; sustainability is being folded into K-12 schools, from early childhood education to secondary school (Spring, 2008; Pearson & Degotardi, 2009). By helping our students understand and critically examine complex issues that defy simple solutions, they will be better able to participate purposefully in actions that will increasingly define their personal and professional environments. Perhaps more importantly, incorporating sustainability into our core mission leverages our role as key change agents (UNESCO, 2005) by positioning our students to assume leadership roles in their professional endeavours. When we help them view sustainability as a worthwhile and necessary goal and when we help them grapple with the challenges of adopting sustainable practices in K-12 schools, we enable them to teach their students about these issues as well.

### *Position statement 2: Sustainability serves our instruction*

When we incorporate sustainability into the core mission of the college, we avail ourselves of an anchoring concept that can bring cohesion, enhanced relevance and a broader context to our work. Many instructors do not immediately connect sustainability to the concepts that lie at the heart of their various courses; however, an increased awareness of sustainability will make those connections increasingly visible. Sustainability is inextricably and deeply related to issues of social justice, equity, democracy and education (Orr, 2004, 2009; Hawken, 2007), and it is a rare course that does not intersect significantly with sustainability. Notably, when instructors make these connections and share them with each other, opportunities for cross-course experiences open, leading students to view coursework as more cohesive and relevant not only in terms of the jobs they hope to land but also in terms of their roles as responsible and empowered citizens. In the current political environment, in which colleges of education find themselves under attack by critics who claim they are becoming increasingly irrelevant (Duncan, 2009), positioning sustainability as a core component of what we teach elevates our purpose and offers a way to resist the current trends that seek to commodify educational outputs and will help to ensure that our curriculum is “rooted in the best that has been produced by human beings and designed to both stir the imagination and empower young people with a sense of integrity, justice and hope for the future” (Giroux, 2010, Para 13).

### *Position statement 3: Sustainability serves our operational efficiency*

Operational efficiency resulting from sustainable practices promises sizable – and often immediate – cost savings to the college in three major areas: instruction and supervision, resource usage and personal awareness. First, most of the college’s courses are face-to-face. However, when appropriate, moving some instruction online will reduce travel to and from

campus as well as on-campus energy usage. Given the proper technological and pedagogical support, many instructors may find that some components of their classes can be conducted equally well (or perhaps better) online (Tallent-Runnels, Thomas, Lan, Ahern, Shaw, & Liu, 2006). Moving portions of field supervision online also promises significant cost and time savings. Second, a sustainability focus encourages development of policies and practices to reduce the staggering volume of paper use, which reaches several hundred sheets of paper per student per year (from admission procedures, to coursework, to summative assessments, to credentialing and graduation processes and beyond). Digital movement and storage of records could cut this volume by orders of magnitude. Third, reorienting the college to address sustainability encourages personal awareness of our ecological impact. Turning off power strips at day's end, closing windows after evening classes, sharing refrigerators, using natural light, reusing water bottles and eating more sustainably while we are on campus will result in cost savings from decreased energy usage. Of greater potential value is the deeper understanding about sustainability we may gain and the connections to areas of influence we may more readily see.

### **Recommendations for the college of education**

Below are five recommendations. Following each recommendation is a short explanation of the rationale behind it. Each recommendation is followed by several proposed courses of action the college might elect to pursue to align itself with the recommendation.

*Recommendation 1: Members of the college should work to build consensus for incorporating sustainability into the core mission of the college.*

Top-down initiatives often fail because of insufficient buy-in, particularly when those initiatives rely heavily on volunteer effort. A key to overcoming these potential barriers is to make recommendations broad enough to include a wide range of activities, but detailed enough to suggest concrete opportunities for contribution. Ideally, these actions should align with existing activities and interests of college members to encourage people to become involved according to their own priorities.

*Proposed actions are the following:*

- 1a. develop a formal and democratic system of participation, such as convening a college-level sustainability committee;
- 1b. explicitly include sustainability in the college vision and mission statements;
- 1c. support discussion by launching a college-wide sustainability reading programme;
- 1d. continually refine this strategic plan to reflect growing consensus.

*Recommendation 2: Members of the college should explicitly incorporate sustainability in all aspects of college activity*

Often, the contents of vision and mission statements are not easily visible in the day-to-day operations of an organisation, which can undermine its credibility and relevance. As the UNESCO guidelines point out, students “will notice our hypocrisies...and are very aware of the difference between what is said in class and what is practiced by individuals, the institution, and the community” (p. 41). To encourage the full embrace of sustainability, education should centre on communities and how they are connected. Helping students understand how the college community impacts the environment can be a powerful model for thinking about other communities, and making explicit connections between actions and environmental consequences can orient us to assume responsibility.

*Proposed actions are the following:*

- 2a. launch an awareness campaign that provides information about sustainability at various choice points in the college;
- 2b. develop guidelines to minimise the use of paper for application, admissions, credentialing, communication and long-term record storage;
- 2c. develop guidelines to purchase environmentally sustainable supplies and materials;
- 2d. incentivise those with relevant expertise to help instructors analyse their courses to explore how to address sustainability;
- 2e. include instruction that encourages students’ input into course revision (for instance, students in a foundations class might discuss connections between sustainability and poverty; students in a methods class might analyse district curricula to identify sustainability related topics; students in a field placement might be encouraged to teach lessons with a sustainability focus, etc.);
- 2f. initiate a sustainability pledge asking college members to reduce their ecological footprint, for instance, the Harvard Sustainability Pledge (n.d.).

*Recommendation 3: Members of the college should seek to work within our individual spheres of influence to bring about change in areas under our authority.*

With any attempt to reorient a large, diverse and complex organisation, some will act as pioneers and early adopters of progressive ideas while others will lag far behind or resist change altogether. Pioneers will experience setbacks, false starts and failures, and so it is critical that they find ways to support each other to overcome the challenges. The guiding principle behind this recommendation is captured eloquently by Margaret Mead’s remark – “Never doubt that a small, group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has”.

*Proposed actions:*

- 3a. develop partnerships with colleagues on specific sustainability-related projects;
- 3b. read sustainability education in common with a colleague(s) and set aside time to discuss it;
- 3c. find ways to connect sustainability to existing duties and responsibilities by forming synergistic partnerships;
- 3d. develop avenues to communicate with colleagues about sustainability efforts (Recommendation 5).

*Recommendation 4: Members of the college should develop sources of funding and other mechanisms to support our efforts to incorporate sustainability into our core mission.*

Although efforts at other teacher education institutions have demonstrated that progress is not entirely dependent on funding, finding money to pay for actions with up-front costs and to pay for faculty release time will allow for more rapid progress. One promising mechanism is to create a system to leverage future savings to pay for present work. Many institutions (for instance, Harvard University) have complex and well-funded programmes that fund sweeping initiatives. Others (for instance, Macalester College) use more modest mechanisms to support smaller scale efforts. Whether large or small, these mechanisms all operate using the same general principle: reinvest the savings that result from sustainability efforts to fund further efforts. Other mechanisms to fund sustainability efforts include finding grants and donors to support the work. Sustainability efforts can also be supported in ways that do not require funding, such as creating policy to formally recognise service to the college.

*Proposed actions:*

- 4a. Apply for grants to pay for faculty release time to support college sustainability efforts.
- 4b. Establish mechanisms to recoup the money the college saves on utilities, supplies, travel reimbursements and online course offerings that accrue as a result of sustainability efforts and direct this money to fund future sustainability efforts.
- 4c. Establish mechanisms that recognise service to the college in the area of sustainability in terms of retention, tenure and promotion.

*Recommendation 5: Members of the college should strive to communicate effectively and extensively regarding sustainability*

Sustainability is a complex issue that contains many diverse perspectives and many diverging opinions. The UNESCO guidelines point out that the way sustainability issues are

communicated can often have a profound effect on the success of sustainability efforts. As one contributor wrote, sustainability:

*... is often presented as a large unifying approach that over generalises and diminishes the importance of specific concerns. As well, in popular usage, the language of sustainability either trivialises or undermines the concept of ESD, as we understand it. A more productive approach in this context might be to highlight an analysis that focuses on the interrelatedness of the society, environment, and economy. Deemphasising the language of sustainability and focusing on this analysis may do much to further the goals of ESD.*

It is important to recognise that legitimate differences exist and can be expected to arise about sustainability between people who are equally dedicated to equity and excellence in education. The guiding principle behind this recommendation is to recognise the commonalities and realise that while we may have different strengths, skills, passions and approaches, as a college, we do share a common vision and a common mission that is consistent with the goals of sustainability.

#### *Projected actions:*

- 5a. create a website dedicated to communicating about sustainability efforts;
- 5b. create a college-level award that recognises individuals who put forth significant effort or display leadership, especially when it is voluntary or goes beyond normal expectations;
- 5c. describe efforts, progress and successes and communicate them via all appropriate channels (for instance, submissions to appropriate journals, newsletter briefs, conference presentations, etc.).

## **Conclusion**

The development of a sustainability strategic plan, of course, represents only the first step along what is sure to be a long and difficult road towards sustainability in our college. Next steps, however, are beginning to take shape. For instance, a proposal to form an officially recognised college-level ad-hoc committee on sustainability (recommendation 1a.) was recently put before the dean and the seven department chairs and was approved for a period of two years, with the possibility of an extended charter based on an assessment of continued need. This committee, whose membership is drawn from all faculty ranks, staff and students in the college, is charged with (1) drafting recommendations in support of official college-wide adoption of the strategic plan, (2) spearheading implementation of the plan by recommending a time-line for adoption and articulating a sequence of related concrete actions aligned with that timeline, (3) assessing the effectiveness of the above sustainability efforts and (4) developing further recommendations based on that assessment. The formation of this committee represents the first administratively sanctioned college-wide collaborative effort to infuse sustainability into all aspects of the work of our college, and, as such,

it holds promise as an important bellwether of a systemic movement towards sustainability in our college.

Notably, although the plan presented here was developed in the context of a particular institution, it seems likely that other teacher education institutions as well as other institutions of similar size and complexity or with similar missions might find the approach presented here useful in the development of strategic plans appropriate for their contexts. Two features of the approach that seems particularly important to preserve regardless of institutional context and that are consistent with Lewin's (1958) social change model, are inclusiveness and transparency. For instance, drafts of the SWOT analyses were shared widely with anyone who expressed an interest in providing feedback, and the strategic plan based on that analysis was written using a public wiki to encourage and support collaboration.

As we approach the end of the UN Decade of Education for Sustainable Development, many of us, educators and non-educators alike, are becoming increasingly aware of the importance of living sustainably, yet are not moved to take concrete actions to meet that goal. Even those among us who are quite well educated about the importance of sustainable living often pursue unsustainable lifestyles. The average per-capita ecological footprint of my university community, for instance, is significantly smaller than the U.S. average: slightly more than four Earths as compared to 6.35 Earths (source: a university-wide Ecological Footprint Challenge survey). Clearly, however, four Earths is three too many. All too often, the challenge we face is how to bridge the gap between what we profess to believe and how we act. This plan seeks to address that challenge by attempting to build solidarity, suggesting actions framed in terms of individuals' commitments to act, yet couched in the context of the larger organisation. The hope, of course, is that if each of us operates cooperatively, yet within our own spheres of influence to encourage action consistent with sustainability principles, we may avoid the worst of what scientists warn may soon befall us. On the other hand, if we ignore these issues, we become accomplices, aiding and abetting those who plunder Earth's ecological systems. The choice is stark, and the consequences of our choices will likely echo for generations. We simply cannot afford to choose unsustainability, and until *all* of us are living within our means, we all have work to do. Pierre de Coubertin, founder of the International Olympic Committee, once quipped that the important thing in life is not the triumph but the struggle. In the context of the Olympics, perhaps he was right. With the health of the biosphere on the line, however, triumph seems equally important.

## **References:**

- Adcock, R. & Collier, D. (2001). Measurement validity: A shared standard for qualitative and quantitative research. *The American Political Science Review*, 95(3), 529–546.
- Brundtland, G. (Ed.). (1987). *Our common future: The World Commission on environment and development* [Electronic version]. Oxford: Oxford University Press.
- Community Environmental Legal Defence Fund. (2008). *Ecuador approves new constitution: Voters approve rights of nature* [Press release]. Retrieved from <http://celdf.org/article.php?id=302>

- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: SAGE.
- Curren, R. (2009). *Education for sustainable development: A philosophical assessment*. London: Philosophy of Education Society of Great Britain.
- Duncan, A. (2009). *Teacher preparation: Reforming the uncertain profession* (Remarks of Secretary Arne Duncan at Teachers College, Columbia University, October 22, 2009). Retrieved from <http://www2.ed.gov/news/speeches/2009/10/10222009.html>
- Everett, J. (2008). Sustainability in higher education: Implications for the disciplines. *Theory and Research in Education*, 6(2), 237–251.
- Giroux, H. (2010). *Dumbing down teachers: Attacking colleges of education in the name of reform*. *Truth Out*, May 25th. Retrieved from <http://www.truthout.org/dumbing-down-teachers-attacking-colleges-education-name-reform59820>
- Guidelines and recommendations for reorienting teacher education to address sustainability*. (2005). Retrieved from [http://portal.unesco.org/education/en/ev.php-URL\\_ID=45508&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/education/en/ev.php-URL_ID=45508&URL_DO=DO_TOPIC&URL_SECTION=201.html)
- Harvard Sustainability Pledge*. (n.d.). Retrieved from <http://green.harvard.edu/pledge/>
- Hawken, P. (2007). *Blessed unrest*. New York: Penguin.
- Kingsolver, B. (2010). Water. *National Geographic*, 4, 44–49.
- Lewin, K. (1958). *Group decision and social change*. New York: Holt, Rinehart and Winston.
- Orr, D. (2004). *Earth in mind: On education, environment, and the human prospect*. London: Island Press.
- Orr, D. (2009). *Down to the wire: Confronting climate collapse*. Oxford: Oxford University Press.
- Pearson, E. & Degotardi, S. (2009). Education for sustainable development in early childhood education: A global solution to local concerns? *International Journal of Early Childhood*, 41(2), 97–111.
- Spring, J. (2008). Research on globalization and education. *Review of Educational Research*, 78(2), 330–363.
- Tallent-Runnels, M., Thomas, J., Lan, W., Ahern, T., Shaw, S., & Liu, X. (2006). Teaching courses online: A review of the research. *Review of Educational Research*, 76(1), 93–135.
- UNESCO. (2005). *Education for sustainable development*. Retrieved from <http://www.unesco.org/en/esd/>

### Correspondence:

Grinell Smith, PhD, Connie L. Lurie College of Education, San José State University, 1 Washington Square, San José, California, 95192, the United States of America. Tel: 2052395607. Email: [grinell.smith@sjsu.edu](mailto:grinell.smith@sjsu.edu); [grinell@gmail.com](mailto:grinell@gmail.com)

## **SCRUTINIZING THE EXPLICIT, THE IMPLICIT AND THE UNSUSTAINABLE: A MODEL FOR HOLISTIC TRANSFORMATION OF A COURSE FOR SUSTAINABILITY**

**Cosette Armstrong**

Oklahoma State University, the United States of America

**Melody LeHew**

Kansas State University, the United States of America

### **Abstract**

*The purpose of this qualitative case study is to describe the development and implementation of a model for course redevelopment for education for sustainable development (ESD). The theoretical approaches to curriculum development of Ralph Tyler (1949) and Elliot Eisner (2002) were influential in the development of the model. The Tyler Rationale (Tyler, 1949) provided general scaffolding for the process and was particularly useful for the development of learning outcomes, while the philosophy of Eisner (2002), complementary to the tenets of ESD, was instrumental in designing classroom experiences to deliver the learning outcomes. Importantly, the model provides a way to empower the individual educator to integrate ESD at the course level as well as a useful mechanism to ensure the holistic application of ESD, aligning sustainability with the predilections of any discipline. This paper demonstrates the use of the model to redevelop an apparel product development course, reframing it for sustainability and sustainable development. The new course was piloted and has now been offered twice since its inception, resulting in a positive students' learning experience.*

**Key words:** *sustainability, curriculum, model, sustainable development, transformation*

### **Introduction**

Though UNESCO's decade for education for sustainable development (ESD) has yielded a tremendous progress in the way of campus greening and research initiatives, progress has lagged in the areas of pedagogical innovation and curriculum redevelopment (Sterling & Scott, 2008; Cotton, Bailey, Warren, & Bissell, 2009; de le Harpe & Thomas, 2009), especially in higher education (Bosselmann, 2001; Everett, 2008; Rode & Michelsen, 2008). A primary impediment to the integration of ESD is the highly specialised nature of academic

disciplines (Jucker, 2002; Calder & Clugston, 2003; Haigh, 2005; Moore, 2005; Everett, 2008). For instance, in the textiles and apparel (TA) field in which we work, academicians reflect a wide range of foundational preparation (for instance, anthropology, psychology, history, chemistry) with diverse specialisations (for instance, merchandising, marketing, design, textiles), varying widely in curricular priorities. This kaleidoscopic milieu, common in many applied science disciplines like TA, often constrains consensus about what is important in education, making a transformation across the entire curriculum seemingly impossible. Nevertheless, educators are increasingly under pressure to integrate sustainability into the courses they teach.

In recent years, the typical approach used to integrate sustainability into the TA curriculum and many other disciplines has been to treat the concept as an extra topic; adding a lecture, module, or course to the curriculum. But, Sterling (2004) argues that this strategy lacks an epistemological foundation oriented to sustainability. The nature of sustainability often conflicts with traditional course content, which Bowers (2001) argues may contain language embodying root metaphors like anthropocentrism, unlimited growth, patriarchy and individualism that perpetuate unsustainable cultural patterns. When these root metaphors dominate a discipline, the ability to identify and adopt new, more ecologically sound understanding is diminished significantly. Thus, when sustainability is integrated in a fragmented way rather than systemically, a dichotomy emerges, causing the learner to feel as though they are being pulled in two very different directions. Jucker (2004) argues that integrating sustainability requires a clear understanding of the dominant ideologies that fuel unsustainability. What we do as educators, both explicitly and implicitly, must be scrutinised to a far greater degree, rooting out the unsustainable.

Currently, there is a need to empower individual educators to make change at the course level, even if an organised effort to address the entire curriculum is not yet possible. There is also a need for mechanisms by which discipline-specific content can be reframed with the philosophy of sustainability. The purpose of this descriptive case study was to develop and implement a process to address these needs. A model was developed to provide a mechanism to create symbioses between ESD and the predilections of any discipline. The development of the model and how it was used to redevelop a TA course are both described.

## **Research context and design**

The current project evolved as an inescapable step in a larger exploratory case study. In the larger study, a TA course was to be redeveloped according to the ESD framework, implemented and utilised to examine a comparison between the learning and development experience of students in the new course to other courses in the same programme. But, no structure existed to ensure the course's alignment with ESD, and, therefore, the quality of the treatment for the larger case would depend on a firm theoretical and systematic approach to its development. Responsively, the researchers organised a qualitative descriptive case study designed to accomplish this preliminary phase of their research. Taking into consideration the aforementioned challenges above, the researchers were guided by two

primary research questions: *What is the process by which an educator may redevelop a single course for ESD? How might an educator be held accountable to the ESD framework during the course redevelopment process?*

Case studies are ideal for generating a deep description and understanding of a real-life situation, event or process as perceived by those who are involved (Yin, 1989; Stake, 1995; Merriam, 1998). This research design is well poised for applied fields like education as they often lend themselves to solving practical problems, such as those outlined in this paper. Case studies are not necessarily used to generate hypotheses or build theory, but simply aim to offer a descriptive account, though most are supported by a theoretical framework or concept (Yin, 1989; Merriam, 1998).

In the current case, the researchers developed a theoretical model for the course redevelopment, utilising the work of curriculum development theorists. Then, the model was implemented. During implementation, the researchers documented all activities conducted, including a series of content analyses and decision-making exercises. The first author coordinated the project, while the second author served as a peer debriefer. Creswell (2007) recommends the use of peer debriefing to strengthen the credibility and validity of qualitative research by allowing an external party, unattached to the outcomes of the study, to review the researcher's inquiry practices and processes.

The project was conducted in a TA programme at a large land grant university in the Mid-west where both researchers (the authors) held teaching assignments. The TA programme was similar in size to other like programmes in the U.S., with an average enrolment of approximately 250 undergraduate students and 50 graduate students (resident and distance). At the time of this case study, the programme had experienced some integration of sustainability topics into some courses, but had not been the subject of a curriculum redevelopment initiative, making it an ideal context for this project.

The course selected for redevelopment was entitled *Private Label Apparel Product Development*, a senior-level capstone course and a programme requirement for both TA design and marketing specialisations. This course was ideal for redevelopment for several reasons. Firstly, senior-level undergraduates, nearing the end of their programme, were in the best position to contrast their experience in the new course to that of other courses in their programme for the purpose of the larger exploratory case study. Secondly, sustainability challenges in the apparel industry span the product development process from materials selection to consumer use to disposal. This attribute made the course ripe for the integration of sustainability concepts. The opportunities to reframe content for sustainability were evident at virtually every stage of the course. Thirdly, the course was a model scenario for the integration of collaborative and thinking skills considered fundamental to the ESD framework, as the course had been characterised by low enrolment and collaborative work.

### **Ralph Tyler meets Elliot Eisner**

Through a survey of curriculum development theory conducted by the researchers, two approaches became highly influential in the current case: the Tyler Rationale by Ralph Tyler (1949), presented in the *Basic Principles of Curriculum and Instruction*, and Elliot Eis-

ner's (2002) approach, presented in *The Educational Imagination*. Many curriculum development models emerged in the early 1900's to guide educational planning and evaluation in response to dramatic societal changes. Historically, faculty psychology theory dominated curriculum paradigms; the purpose of education thought to exercise the brain like a muscle through memorisation and recitation with an emphasis on mastery of subject matter. The Tyler Rationale (Tyler, 1949) countered this paradigm, offering a structured, mostly linear framework for developing curriculum to achieve the student's developmental needs and societal needs as well as priorities of the subject matter (Pinar, Reynolds, Slattery, & Taubman, 1995). Eisner's (2002) approach, originally published in 1979, was developed during the 1960's Reconceptualisation of Education, a movement which questioned the viability of structure and systematic process in educational design altogether; advocating instead for flexibility, variety and, most importantly, imagination. Admittedly, the two authors occupy polar positions on a continuum; Tyler (1949) emphasising the planned curriculum, a preoccupation with outcomes, Eisner (2002) emphasising the enacted and experienced curriculum, a preoccupation with the process. In the current case, these distinctive strengths were both utilised to generate a model for course redevelopment for ESD.

### **The Tyler rationale**

Easily one of the most recognised curriculum development models (Pinar et al., 1995; Marsh & Willis, 2007; Oliva, 2009), American curriculum developers once flocked to the Tyler rationale; as most reform movements in the US have promoted an outcomes-based educational system (Marsh & Willis, 2007). The Tyler Rationale (Tyler, 1949) emphasises planning: planning the purpose of education, planning educational experiences to support that purpose and planning for the evaluation of the outcomes. His approach consists of four primary steps.

1. The educational purpose is determined. Tyler suggests assessing the needs and interests of the learner, the needs of the local community and society and the priorities of a specific subject matter through primary data collection exercises, such as interviews with students, studies of contemporary life or consultation with subject specialists. Learning outcomes are derived from this data which can reasonably be accomplished through education. These outcomes are then screened to align with a desired educational philosophy (the purpose of education) and a preferred educational psychology (how people learn best).
2. Learning experiences are selected in accordance with the precisely defined set of learning outcomes. Meaning, experiences are designed to deliver a predicted outcome.
3. Learning experiences are organised. Three primary organisational tenets are used: continuity, sequence and integration; positioning outcomes to be revisited throughout a learner's educational experience, graduating sequentially and successively and integrated to relate to other levels of the same content area as well as different content areas. Then, specific lessons, topics or units and the time period for which they will be implemented are planned.

4. A plan to evaluate the delivery of learning outcomes is formed. Accordingly, the learning outcomes are used to guide selection of appropriate evaluation methods. Further, outcomes are stated in a way that is indicative of how they will be measured.

Tyler's approach has been heavily criticised among curriculum theorists for its linear, systematic and outcomes-based approach and the many unintended consequences that have manifested through its use (Marsh & Willis, 2007). In fact, Tyler's penchant for organisation, precision and measurement departs the philosophy of ESD, which seems to emphasise a more qualitative approach to sustainability education (UNESCO, 2005). Nevertheless, this process offers an important structure for educators who may not receive their training in a college of education and have little foundational knowledge of curriculum development. Specifically, the first step of this approach was most influential in the current project, particularly the research and organisation used to identify key learning outcomes and screen them to align with the educational philosophy and psychology of ESD.

### **Eisner's educational imagination**

While the Tyler Rationale (Tyler, 1949) contributed to an important beginning for the course redevelopment model, the addition of Eisner was necessary for portions of the model which affected the student experience, such as learning experiences and assessment, as Eisner's philosophy more closely aligns with ESD. Eisner is a constructivist, chiefly influenced by John Dewey and the predilections of the Progressive Era of Education. Pronounced in Eisner's work (1967, 1998, 2001, 2002) is his opposition to the standardisation and operationalisation of education, roots found in reform movements like the Progressive Era of Education in the 1930's, the Reconceptualisation of education in the 1960's (Pinar et al., 1995) as well as ESD (Foster, 2002; Orr, 2003; Haigh, 2008). Unlike Tyler's (1949) preoccupation with outcome measurement as the key indicator of quality in education, Eisner (1998) advocates for the study of how students experience education, paying attention to the context of educational situations to glean its quality. Eisner (2002) bristles at curriculum changes made in the name of efficiency, which may marginalise some learners. Rather, he emphasises responsiveness of curriculum to the context of the learner: who they are, where they are, what resources are available to them, etc.; while Tyler emphasises a more equal consideration of the needs of students, society and subject.

Eisner (2002) also advocates for transparency of the explicit, implicit and null curriculum (what is not taught at all) during the curriculum development process. By continually scrutinising the ideologies that dominate the explicit, implicit and null curriculum, more holistic decisions can be made, a sentiment shared by ESD authors (Jucker, 2004). Ideologies are sometimes explicit, but mostly implicit or embodied in what is missing entirely, and, to the degree this goes unnoticed, meaningful educational change is inconceivable. This tenet was a chief consideration in the current project.

Eisner's (2002) approach includes seven elements he felt were important for curriculum developers to consider. Unlike the linear nature of the Tyler Rationale (Tyler, 1949), Eisner felt that the following considerations could be taken at any time and in any order.

1. Goals and priorities are identified. Eisner disparaged Tyler for his conjecture that the most compelling educational outcomes always follow precisely stated goals. Rather, Eisner felt explicitly stated outcomes could be enhanced by including other more expressive outcomes that are not as rigidly defined. As such, performances of students are not planned to a predictive degree, but are crafted with ample room for emergent outcomes; outcomes that may expand, or even change, the educational goals. He also contends that values, intentions and future-mindedness should be central in planning educational aims, rather than aiming only for what can be easily measured.
2. Content is created. Eisner advocates that though there may be a variety of concepts considered important in a subject area, many are equally sufficient to helping the learner meet and extend the educational goals. Importantly, during the selection of this content, scrutiny is given to what is explicit in this content, what may be implicitly embodied in these messages or behaviour as well as what may be missing entirely.
3. Learning opportunities are crafted. While Tyler emphasises experiences designed to deliver predicted outcomes, Eisner describes learning opportunities as a vehicle to transform the goals. Crafting such events requires imagination and artistry of teachers, another critical departure from Tyler, who was partial to subject specialists. Eisner is partial to high levels of student engagement in these events, rather than a sole focus on the subject matter.
4. Learning opportunities are organised. Eisner recommends a spider web approach to organisation for learning opportunities, opposing Tyler's stair case model, which leaves little room for exploration or accidental discoveries. Rather, curriculum organisation takes the form of projects, activities or materials designed to solicit engagement and action. This offers the learner the opportunity to develop ideas and skills which vary among peers, while the teacher facilitates the interests and goals of the learner.
5. Content areas are organised. Eisner acknowledges that most disciplines embody a structure passed down by tradition which is often difficult to abandon. However, at the least, he emphasises the need to demonstrate strong relationship among content areas across the curriculum without evidencing the predictive scaffold evident in Tyler's model.
6. Variety in modes of presentation and response is invited. The consideration of how learning opportunities are presented to the learner and how students are permitted to express what they are learning, is virtually absent from Tyler's approach. Traditionally, modes of presentation and response have been verbal and written only, modes which may not accommodate diverse learning and communication styles. Eisner champions for variety in how concepts are delivered by the educator as well as how learning is communicated by the student.
7. Assessment procedures are developed concurrently. According to Eisner, decisions about assessment are made throughout the curriculum decision-making process, not as a separate function at the end, as implied by Tyler. Not a fan of scientific measurement, Eisner encourages the use of authentic assessment, forms of

evaluation that speak to how a learner arrives at an outcome, rather than an outcome's measurement. These types of appraisal become a learning opportunity, serving the learner in some way. Eisner argues that these approaches better prepare the learner for life outside school by increasing lifelong learning attitudes and promoting retention and understanding.

Eisner (2002) believes that desired outcomes consistent with a specific discipline are important, but the process or journey of getting there should hold equal priority, a key attribute which aligns with ESD. He admits that his approach commands the most from practitioners, as they must intuit emergent outcomes, becoming intimately acquainted with learners' needs, and remain flexible to provide resources customised to individual journeys. They must also exert more energy when assessing these journeys. But, Eisner argues that the use of his model signals to the learner what is most valuable in their development. In sum, Tyler's approach was utilised to anchor the process of developing learning outcomes and Eisner's approach was used to poise the learning outcomes for expansion.

### **Developing the model: Why Tyler and Eisner?**

On the surface, the approaches of Tyler (1949) and Eisner (2002) converge on many of the same factors (Table 1). Both agree that decision-making must largely centre on the articulation of desired educational goals, the planning and organisation of experiences that may allow learners to meet those goals and an evaluation plan that speaks to the quality of the educational programme. From there, the philosophies of Tyler and Eisner diverge remarkably (Table 2). Arguably, the Tyler Rationale (Tyler, 1949) reads like directions to a puzzle in contrast with the dynamic educational journey Eisner describes. Indeed, Tyler favours linearity, prediction, pedagogical control and quantitative evaluation, while Eisner promotes the antithesis, advocating for an artistic approach to curriculum which is highly iterative and nonlinear. Interestingly, both theorists have been criticised for their approaches; Tyler for his linear and prescriptive nature and Eisner for his flexibility and lack of specificity (Marsh & Willis, 2007). Nevertheless, the opposition of their philosophies was inconsequential here, as it was these specific attributes, Tyler's linearity and structure and Eisner's flexibility and creativity, which made notable contributions to the course redevelopment model, offering enough structure and guidance of the curriculum development process for educators who may not be trained in education, and at the same time, being responsive to the pedagogical philosophy of ESD which is connoted by high levels of social interaction and unpredictable emergent outcomes which result from that interaction (Ellis & Weekes, 2008; Sipos, Battisi, & Grimm, 2008; Svanström, Lozano-Garcia, & Rowe, 2008).

Table 1. The Tyler rationale and Eisner’s educational imagination

<b>Tyler (1949)</b>	<b>Eisner (2002)</b>
<i>Decide on the educational purpose</i> What educational purposes should the school seek to attain?	<i>Goals and priorities</i> explicit + less rigidly defined; allow ample time for deliberation
<i>Select learning experiences</i> How can learning experiences be selected that are likely to be useful in attaining these outcomes?	<i>Content of the curriculum</i> explore content options; scrutinise explicit, implicit and null curriculum
<i>Organise learning experiences</i> How can learning experiences be organised for effective instruction?	<i>Types of learning opportunities</i> seek transformative goals meaningful to students
<i>Plan for evaluation</i> How can the effectiveness of learning experiences be evaluated?	<i>Organisation of learning opportunities</i> nonlinear approach; expansion and extension of outcomes welcomed
	<i>Organisation of content areas</i> a particular emphasis placed on an entire curriculum
	<i>Mode of presentation &amp; mode of response</i> a variety of modes extend opportunities for students
	<i>Types of assessment procedures</i> a broad range of methods administered at multiple stages

Specifically, the structure offered in the collection and analysis of various types of information (about students, society and the subject) and the systematic screening of that information to derive learning outcomes relevant to the educational philosophy and psychology were characteristics well poised to offer the needed mechanism to reframe discipline specific content to align with the epistemology of ESD. Also, as Eisner was more focused on being responsive to learners in the development of educational goals, and ESD places particular emphasis on the achievement of societal needs, Tyler’s approach to developing learning outcomes across the three types of information seemed more thorough and balanced. Notably, though Tyler anchored the learning outcome development phase of the model, Eisner’s philosophy was considered in this phase to ensure learning outcomes were stated broadly, leaving room for emergent outcomes.

Table 2. Tyler and Eisner compared

<b>Author</b>	<b>Tyler (1949)</b>	<b>Eisner (2002)</b>
curriculum development process	linear, structured, systematic	uncertain, complex, flexible, iterative, artistic
favoured curriculum developer	subject specialist	practitioner
learning outcomes	precise, predictable; designed for measurement	some explicit, some expressive; designed for transformation
goal of learning experiences	outcome delivery	emergent outcomes
organisation of learning experiences	linear	spider web

*Sequel to Table 2 see on p. 25.*

*Sequel to Table 2.*

nature of evaluation or assessment methods	quantitative	qualitative
purpose of evaluation or assessment	measurement of quality of education and areas of deficiency	description of students' experience
nature of curriculum	prescriptive	responsive to local context

Eisner's (2002) approach, on the other hand, was especially useful for the planning and organisation of learning experiences as well as decisions related to assessment, as his philosophy is especially compatible with ESD, particularly his opposition to standardisation and efficiency in education as well as the scrutiny of dominant ideologies that manifest in curriculum decisions (Foster, 2002; Orr, 2003; Rees, 2003; Haigh, 2008). Eisner's attention to the implicit and null curriculum aligns with ESD authors like David Orr (2004) who argue that how we teach is just as important as what we teach, especially when it comes to sustainability. Undoubtedly, Eisner's sensitivity to the values-laden nature of curriculum development is responsive to ESD. His embrace of ambiguity and complexity in curriculum development is also akin to how ESD authors have characterised the holistic integration of sustainability (Landorf, Doscher, & Rocco, 2008; Sterling & Scott, 2008). Further, Eisner's artistic approach to crafting educational opportunities responsive to local contexts easily translates to ESD (Gough & Scott, 2001; Hopkins & McKeown, 2005; UNESCO, 2005), as both reject scientific measurement as pinnacle, embracing authentic forms of assessment and welcoming variety and iteration (UNESCO, 2005). Finally, ESD's attachment to high levels of engagement through problem solving, social interaction, application, reflection and emergent outcomes is indubitably correlated with both Eisner's approach as well as constructivism, a learning theory considered symbiotic to ESD. Attention paid to the process of learning is unmistakable in both Eisner's approach and ESD (Dale & Newman, 2005).

To summarise, the scaffold provided by Tyler (1949) satisfied a gap where Eisner (2002) was more vague and flexible. Conversely, Eisner enhanced the course redevelopment model with his flexibility and creativity that Tyler lacked. In the model (Figure 1), the influence of the Tyler Rationale (Tyler, 1949) is most evident in the initial phases related to the identification and organisation of learning outcomes; specifically, the process provided for analysing sources of information related to student, society and subject and the screening of those sources through the educational philosophy and psychology of ESD. The remainder of the model, however, was chiefly influenced by Eisner.

### **Implementing the model**

Once the model's structure was in place, the first author began the process of implementing the model, while the second author served as a peer debriefer, periodically reviewing the implementation process. During each phase of the process described below, the first author would meet with the second author to review the process and outcomes, which often resulted in adjustments to refine the implementation. The following discussion is organised by each phase of the process.

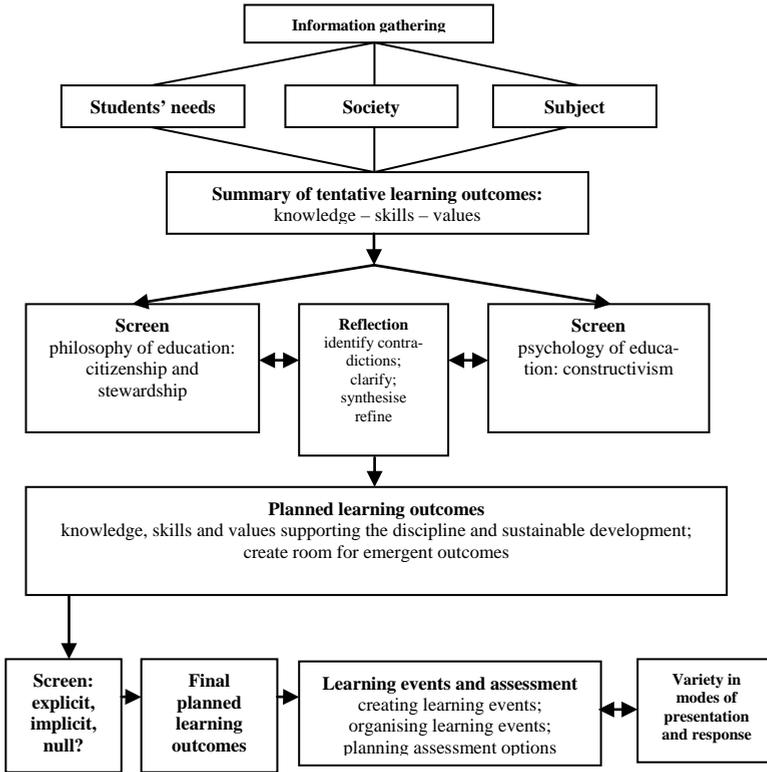


Figure 1. Course redevelopment model

*Information gathering for the needs of students, society and subject*

As the current project was to redevelop a single course and not an entire curriculum, a content analysis of highly credible literature was used as secondary data to answer to the needs of students, society and subject in lieu of primary data collection recommended by Tyler (1949). To aid in organisation of this literature, three common categories of outcomes, reflective of the ESD literature, were used as boundaries: knowledge, skills and values related to the specific course topic (product development) and sustainability. The researchers together identified four primary sources of literature for analysis, which were selected to provide a balance between priorities related to the specific course topic (product development), as well as those used to provide a broader perspective about sustainability and sustainable development.

First, meta goals for four-year baccalaureate programmes, published by the International Textiles and Apparel Association (ITAA) in 2008, which specify educational goals for undergraduate academic programmes in the U.S. These goals offer specific objectives about the knowledge, skills, as well as attitudes students should acquire while completing their undergraduate programme. These goals were utilised to speak for students' needs in the knowledge, skills and values categories. Second, Glock & Kunz (2005) in the book *Ap-*

*parel Manufacturing: Sewn Product Analysis* offer a precise list of knowledge, skills and attitudes that students should have to enter the apparel product development profession. This source was ideal as it is narrowly focused on the specific skills related to apparel product development, the subject of the course being redeveloped. This source enriched the ITAA objectives when speaking for students' needs for knowledge and values. Third, a literature review was organised to provide a framework for the key knowledge, skills and values that have been associated with ESD (Armstrong, 2011). As the primary goal of this study was to meet the needs of society sustainably, this body of work was utilised exclusively when speaking for societal needs related to knowledge, skills and values. Lastly, as the redeveloped course was related to product development and to be consistent with the ESD framework's call to reframe content for sustainability, a comprehensive comparative literature review of apparel design and product development contrasted with sustainable approaches was organised to identify key points on which the content in the course should be reframed for sustainability (Armstrong & LeHew, 2011). This investigation included an exhaustive review of the apparel product development and design literature authored by TA academicians, and an extensive review of the literature regarding sustainable product development and design methods authored by a variety of academicians and industry practitioners from diverse disciplines. Both literature reviews were later published as theoretical projects.

As the current study utilised highly credible literature as opposed to collecting primary data about the needs of students, society and content, some assumptions were made about the nature of the outcomes found in these sources, differing somewhat from Tyler's (1949) prescriptions. Firstly, when perusing the aforementioned literature for educational outcomes, the first author focused solely on items related to the categories knowledge, skills and values pertaining to the course topic (product development) and sustainable development, the boundaries set in the case for learning outcomes. For instance, when surveying literature used to speak for students' needs, the researcher did not necessarily centre analysis on the psychological needs of students or any other needs falling outside the development of knowledge, skills and values. Tyler's (1949) work is considerably applicable to primary and secondary education and, therefore, includes concerns of a much wider scope about the needs of learners who are developing into adults; a lesser concern in the current study in higher education. Although some important psychological needs were likely to be met in the redeveloped course, it was categorically beyond the scope of this project to study them formally. Secondly, in the content analysis of the ESD literature used to speak for societal needs, the role of the current ecological crises was prominent as an explanatory maxim regarding contemporary life. Because this course was being redeveloped to better support sustainable development, a few other milieus could speak as poignantly to these needs as the planet's unsustainability. Responsively, the future was the primary consideration in creating educational objectives designed to aid learners in preparing for factors such as continuing evaporation and escalating cost of natural resources.

## Summarising and screening learning outcomes

Potential learning outcomes for the new course were gathered from the above literature based on their relevance to apparel product development, but also to the development of citizens and stewards, the primary purpose of ESD (Egan, 2004; Kevany, 2007). To organise these potential learning outcomes, the first author created three matrices, labelled knowledge, skills and values. Table 3 offers an illustration of one matrix used to organise potential learning outcomes related to skills across all bodies of literature. At this time, outcomes that seemed duplicative or highly correlated across the various types of literature were synthesised; while other outcomes were reframed. For instance, both the TA and ESD literature identify collaboration as an important skill for learners to develop. But, in an ESD context, collaboration is linked more intentionally to capacities like civic engagement and democratic dialogue. Thus, this was the first point in the course redevelopment process when the researchers began to see how ESD might reframe what the discipline says is important for learners, accomplishing both what is prized in the discipline as well as the goals of ESD. In addition, outcomes considered too comprehensive for a semester-long course were also edited down or eliminated. These key decisions were made during peer debriefing sessions with the second author.

Table 3. Summary of potential learning outcomes: skills

	Students' needs	Students' needs	Society's needs	Content needs
Source	ITAA (2008, p. 3)	Glock & Kunz (2005, p. 112)	ESD literature review (Chapter 2)	product development comparative analysis
Tentative outcomes; skills	identify and evaluate issues of social responsibility, professional behaviour and ethics related to the impact of individual organisational and corporate decision-making; analyse and evaluate issues related to environmental sustainability and environmental impact as they relate to industry activities and processes;	have a strong teamwork orientation; motivate team members and other associates to consistently do their finest work; communicate in a clear, direct and persuasive manner to executives, peers and other associates; focus on accuracy and consistency of details; effectively manage time and other resources; organise and prioritise work flow;	skills for citizenship and stewardship: collaboration and cooperation; gaining buy-in (Jucker, 2002; Egan, 2004; ACPA, 2008; Svanström et al., 2008); conflict resolution (Jucker, 2002; Egan, 2004; ACPA, 2008; Svanström et al., 2008) and negotiation (Kevany, 2007); creative and imaginative problem-solving (Jucker, 2002; Egan, 2004; ACPA, 2008; Svanström et al., 2008);	interdisciplinary collaboration and cooperation; work concurrently and iteratively; technological competence; forecasting sustainability; problem-solving; research and analysis of sustainability impacts of product development processes; selection of viable solutions per impact analysis; backcasting; risk analysis;

*Sequel to Table 3 see on p. 29.*

Sequel to Table 3.

<p>demonstrate critical and creative thinking skills; identify and understand social, cultural, economic, technological, ethical, political, educational, language and individual influences on industry issues; use appropriate technology to facilitate critical, creative, quantitative and qualitative thinking within the textile and apparel complex; communicate ideas in written, oral and visual forms using appropriate technology; function as team members and leaders within professional and culturally diverse environments; demonstrate the ability to critique one self and others constructively</p>	<p>use computer technology and electronic communications effectively to enhance effectiveness of decision-making, presenting and reporting</p>	<p>meaningful communication, civic engagement, democratic dialogue (Kevany, 2007; ACPA, 2008; Everett, 2008; Svanström et al., 2008); social sophistication (Eagan, Cook, &amp; Jores, 2002; Kevany, 2007; Everett, 2008; Kelly &amp; Fetherston, 2008; Svanström et al., 2008) and social action (ACPA, 2008; Haigh, 2008); reflection and introspection (Jucker, 2002; <i>Forum for the Future</i>, 2005; ACPA, 2008); identify and adapt to change; systems thinking (McKeown, 2006; ACPA, 2008) and contextualise issues (Dale &amp; Newman, 2005); articulation of values (Warburton, 2003) and values-focused thinking (Keeney, 1992; Sipos et al., 2008); visioning for the future (Egan, 2004; ACPA, 2008); sustainability research</p>	<p>communication of environmental features</p>
--	--	---	--

Next, Tyler’s (1949) screens, the educational philosophy and psychology became the primary mechanism for aligning the learning outcomes cohesively with ESD. The philosophical screen is a statement by educators about the values that underpin the purpose of the education, defined by ESD as preparing citizens and stewards for life on local and global plains: at home, at work and in the community. Citizenship implies rights and responsibilities inherent in community engagement and interests beyond the self, while stewardship connotes responsibility for present and future generations as well as the environment (*Forum for the Future*, 2005). Tyler recommends creating a concise statement for this phase of screening, which the researchers stated as:

*The purpose of education is to prepare the learner for citizenship and stewardship in their local and global community. Educational learning outcomes designed for this end should emphasise interconnectedness in relationships with others and re-*

*sponsibility for the environmental health and social justice for present and future generations.*

Likewise, Tyler (1949) suggests writing a statement about the primary components of the preferred educational psychology, a set of conditions believed necessary for learners to learn. In an ESD context, high levels of learner engagement through problem-solving experiences that require inquiry, analysis, peer collaboration, application of course concepts and reflection on real experience are preferred. Instruction is broad in scope and requires the learner to challenge current paradigms. Also, the educator is a facilitator and collaborator, allowing the learner ample freedom to direct their own learning (Dale & Newman, 2005; Ellis & Weekes, 2008; Sipos et al., 2008). It is easily surmised that these conditions align most ideally with a constructivist epistemology. Therefore, the researchers prepared the following statement for the psychology screen:

*The ideal conditions for learning are best described through a dialectical perspective of constructivism, which emphasises the construction of knowledge by the learner through social interaction in collaborative groups and with the instructor, consistently challenging the learner's previous stance. Educational outcomes designed for this end should emphasise imaginative problem-solving, collaboration and reflection.*

Placed on index cards, these screens were used to analyse the potential learning outcomes gathered related to knowledge, skills and values. Using the philosophy screen, the researchers asked themselves questions like: How can Outcome X be used to develop a citizen or steward? How can Outcome X support sustainability? True to Eisner's (2002) characterisation of curriculum development, this phase of course redevelopment was highly intuitive. The practice of synthesising learning outcomes and insuring their alignment with this screen was highly iterative and heavily reliant on the researchers' judgment. Using the psychology screen, the researchers asked themselves questions like: How can Outcome X be developed by the learner? What action is required by the learner to develop Outcome X? The psychology screen was also useful later when formal learning outcome statements were to be generated, using action verbs related to a constructivist pedagogical method like explore, practice, critique and demonstrate. Most importantly, care was taken during this analysis to root out language incongruent with sustainability. For instance, TA's preoccupation with consumer wants, growth and profit were reframed to better support sustainability. Table 4 illustrates a summary of screened learning outcomes related to the skills category. Again, decisions to synthesise and refine these learning outcomes were reviewed by the second author and often amended during these peer debriefing sessions.

Table 4. Summary of screened learning outcomes: Skills

Sources	ITAA (2008, p. 3); Glock & Kunz (2005, p. 112); ESD literature (Armstrong, 2011); Product development comparative content analysis (Armstrong & LeHew, 2011)
Summary	<ul style="list-style-type: none"> <li>– interdisciplinary collaboration and cooperation</li> <li>– work concurrently and iteratively</li> <li>– conflict resolution</li> <li>– creative and imaginative problem-solving for sustainability</li> <li>– effective and meaningful communication: clear, direct and persuasive (oral, written and visual)</li> <li>– reflection, introspection and self-evaluation</li> <li>– identify and adapt to change</li> <li>– systems thinking</li> <li>– values-focused thinking</li> <li>– visioning</li> <li>– forecasting</li> <li>– research and analysis of sustainability impacts of product development processes to identify solutions</li> <li>– risk analysis</li> <li>– communication of environmental features</li> <li>– accuracy and consistency of details</li> <li>– time and resource management</li> <li>– organisation and prioritisation</li> <li>– appropriate use of technology to facilitate critical, creative, quantitative and qualitative thinking and decision-making as well as communication</li> <li>– ethical thinking and decision-making</li> </ul>

**Articulating planned learning outcomes: Explicit, implicit and null**

Upon completion of the above analysis, a summary of screened learning outcomes were evaluated for their appropriateness for the explicit curriculum, but attention was also paid to the implicit and the null. The researchers asked themselves: Are there desired outcomes which should be implicitly embodied in this course without being explicitly stated and measured? How might the implicit affect the explicit? What is missing from these outcomes entirely? The researchers found that most of the knowledge-related learning outcomes were appropriate for the explicit curriculum and could be communicated to students through the new course syllabus. Likewise, skills-related outcomes learning outcomes which were significantly focused on the goals of ESD, like working with others and critical thinking, were also explicitly communicated. Other outcomes remained implicit, alternatively embodied in the course implementation. For instance, a primary goal of ESD is to develop change agents (ACPA, 2008). Though not communicated explicitly on the new course syllabus, preparing students to be change agents in the apparel industry was clearly an underlying purpose of the educational experience. Likewise, outcomes related to professional standards like time management and attention to detail were left implicit. Many of the outcomes related to values that support sustainability were also left implicit, as the ESD literature makes clear, it is the articulation of values, not the indoctrination of them, thought critical to teaching for sustainability (Warburton, 2003). In terms of the null, the researchers discovered that what

was chiefly missing from the TA curriculum was the illustration of alternative business models, as the current outcomes singularly focus on the mass production model only. Finally, the researchers took pause over the summary of learning outcomes and together began to condense and refine them into formal statements. The final planned learning outcomes for the redeveloped TA product development course, including knowledge, skills and values, are shown in Table 5.

Table 5. Summary of planned learning outcomes for a redeveloped course

<b>Explicit</b>
<ul style="list-style-type: none"> <li>– define sustainability;</li> <li>– understand and implement the apparel product development process;</li> <li>– understand, practise, critique and innovatively implement sustainable paradigms in this context;</li> <li>– understand, perform and critique sustainability impact analyses as well as implement responsive plans to such critiques;</li> <li>– understand and be responsive to the implications of consumers’ needs versus their wants on sustainability;</li> <li>– identify, scrutinise and be responsive to the political, cultural and economic assumptions that inhibit sustainability;</li> <li>– explore values that underpin sustainability and, then, articulate and critique their own;</li> <li>– understand, practise and demonstrate progress towards the development of six fundamental skills important for solving sustainability-related problems: collaboration/cooperation, conflict resolution, effective/meaningful communication, reflection, systems thinking and values-focused thinking;</li> <li>– envision and forecast action for a sustainable future in the apparel industry;</li> <li>– demonstrate skilful research methods;</li> <li>– understand and apply industry as well as sustainability related terminology;</li> <li>– utilise technology effectively and innovatively.</li> </ul>
<b>Implicit</b>
<ul style="list-style-type: none"> <li>– adapt in industry conditions;</li> <li>– become a change agent;</li> <li>– develop an ethical compass;</li> <li>– employ professional industry standards in work ethic.</li> </ul>

## **Planning learning events and assessment**

Per Eisner’s (2002) recommendation, assessment considerations were made concurrently while lesson plans, materials and activities were developed. The researchers found it helpful to first outline a chronological process of course modules that could be used to achieve the planned learning outcomes. In this particular case, it was helpful to simply use the product development process itself, which includes everything from materials selection, consumer and market research, marketing, technical design development to sourcing, distribution and retail strategy. A judgment was also made as to how much of that process could be learned in one semester.

Eisner’s (2002) tenets of variety in modes of presentation and response as well as authentic assessment and loosely planned experiences which invite emergent outcomes were

highly influential considerations in this phase. Complementary to both Eisner's philosophy and ESD, the epistemology of constructivism was also influential, designing events which focused on broad concepts and included social interaction, real experience, the exploration of multiple perspectives and required personal reflection. For instance, lesson plans were designed to be highly interactive and included a variety of media, including lecture, discussion, images or videos, activity and group critiques. When sustainability concepts were illustrated in a variety of different ways, learning about this complex concept was enhanced. Likewise, many course assignments were designed to offer learners several options for completion, empowering learners to choose how they wanted to present what they were learning, which increased engagement and investment in the project.

In sum, these were all chief considerations in crafting learning events and assessment methods for the new course. Prior to redevelopment, this course had followed a similar process, breaking up the steps of the product development process with a series of course assignments, ending on or around the sourcing phase. Thus, the first author began re-writing a similar series of assignments to better reflect the language and intent of sustainability and align with the pedagogical philosophies described above. The second author reviewed and offered criticism on each assignment.

Next, decisions were required as to when the ESD-related skills would be introduced and how. As the course was historically a collaborative capstone experience, the ESD skills would play a fundamental role in equipping learners for that experience and offer them a way to apply what they were learning. As values would underpin, not only project decisions, but also how the groups might navigate conflict, values-focused thinking was positioned to be introduced in the early phase of the course. Then, a series of collaborative training sessions were designed for the first two weeks of the course, incorporating the collaboration-related skills (collaboration, communication, conflict resolution). The ESD skill, reflection, was built implicitly into two reflective writings to be completed in the middle and end of the course. This would allow students to reflect on their learning and their use of the ESD skills. The last ESD skill, systems thinking, was planned for introduction mid-semester, at the peak of decision-making, in which learners would be experiencing the most complex assortment of choices.

This decision-making process was admittedly a challenging, iterative, exhilarating and sometimes exhausting and required ingenuity, craftsmanship, imagination and intuition, true to Eisner's (2002) description of the process. Here, the peer debriefing meetings between the two researchers were immensely helpful for refining the plan and insuring a successful course implementation. Often, plans for early stages of the course were scrapped when it appeared unrelated to plans for the latter portion and vice versa. Indeed, balancing the need to integrate sustainability with apparel product development forced the most important outcomes to the top. The researchers often used guiding questions to refine the plan, like: What is the most important thing learner must learn in this course? Or, what is the most important thing learners must learn in this course that they will be unable to learn in other courses? The planned learning outcomes for the course, both explicit and implicit, compassed tough decisions. Sometimes product development content was removed to accommodate sustainability. At other times, content was added to transform traditional product development concepts with sustainable ideas. Although some previous course materials

were useful, nearly all of the lesson plans, assignments, activities and assessment methods for the redeveloped course were created from scratch to ensure cohesion as well as alignment with sustainability. However, much of the literature gathered in the earlier phases became key sources for lesson plans, assigned readings and activities. Following is a description of the products that evolved from the final stages of the course redevelopment model.

### *The semester project*

During this final planning phase, a report was published by Bennie, Gazibara and Murray, called *Fashion Futures 2025* (2010), which was the result of expansive research among apparel industry and academic professionals about what the future of fashion might look like in fifteen years. The report was designed as a conceptual tool for apparel companies to strategise for the future, a strategy called “future proofing,” used to insure the viability of long-term strategic plans, responsive to certain adversities like climate change, resource shortages and price hikes and dramatic demographic changes. The report hypothesises four potential scenarios responsive to these adverse trends, offering a window into potential outcomes for the future. Many of the sustainable design paradigms, already planned for course instruction, were referenced in the various scenarios. Thus, the report provided a powerful mechanism to stimulate imaginative thinking in light of sustainability challenges in the context of fashion.

The researcher decided to centre the new course on a hypothetical industry scenario in which a fictitious sustainable apparel marketer called Green Sweat, Inc. had gone belly up after attempting to enter the market using a sustainable platform. Students would play the role of product development employees whose expertise had been tapped to set the defunct brand on a more sustainable and viable path. Literature regarding miss-steps in sustainable strategy in the apparel industry was used to create a company dossier, describing the company’s primary mistakes, which included both product-related as well as team-related shortcomings. Thus, students would use the report as a tool to future-proof their product development plan. Members of the student groups would carry real industry titles such as Marketing Director, Merchandise Coordinator, Head Designer, or Director of Sustainability and would be expected to play these roles in completing the course assignments. Likewise, the instructor would play the role of Director of Product Development and act as advisor, facilitator and collaborator on course projects.

The *Fashion Futures* report offered an opportunity to tweak the series of course assignments one final time to align with the report. Students would use the report to imagine, for instance, a consumer target market and a relevant product category. Students would work in groups to complete a series of group assignments for a specific future scenario outlined in the report; essentially, putting all the pieces of an apparel product development plan together over a semester period based on one potential vision of the future. The assignments included a consumer profile (demographic and psychographic descriptions), a product category scan (review of existing brand assortments), a theme and inspiration board, design concept and brief (development of actual designs and the explanation of relevant sustain-

able design paradigms), a marketing dossier, a specification pack (technical design development and costing) and a sourcing plan (determination of manufacturing method and choice between developing a code of conduct or conducting a final analysis of their business model using a triple bottom line or stakeholder analysis). Historically, this course culminated in a group presentation to the class. But, since the focus of the semester project would be on imagining the potential future of fashion from different perspectives, the researchers decided to use this opportunity as an educational tool, not just for students, but the public as well, creating a final exhibit presentation of the students' work from the four scenarios. Exhibits are also considered an authentic assessment method.

Other forms of authentic assessment were used for group assignments; favouring techniques designed to prompt the student to explain their unique perspectives, justify their proposed solutions, demonstrate a collaborative effort and require the student to complete assignments with other assignments in mind, encouraging holistic thinking. Each group assignment was created to scaffold back to a previous assignment, insuring cohesion in the completed project, but also helping the student see a larger picture, the product development process and its impact on the ecosystem. A rubric of qualitative criteria for assessment was created for each group assignment, providing a mechanism for assessment of the planned learning outcomes for the course. Notably, the largest portion of each assignment's grade was consistently weighted in favour of imaginative problem-solving, critical thinking and authentic concept development, while other criteria such as professional execution and following the directions received far less weight. Further, consistent with Eisner's (2002) penchant for variety in modes of response (how the student communicates what they have learned), many group assignments offered students at least two ways, if not more, to complete assignments.

Explicit in the group assignments, was the incentive for critical and imaginative thinking about apparel product development and sustainability, encouraging students to cast off perceived limits and boundaries and explore *What if?* Responsively, assignments were written to allow groups to renegotiate assignment requirements based on what they were interested in exploring. For instance, for the marketing dossier assignment, students were asked to develop at least one piece of marketing material per group member as part of their marketing plan. But, this could be renegotiated in the event that a unique and innovative marketing strategy may require more labour and, thus, make the production of multiple materials less possible. Likewise, in the design concept and brief assignment, ample room was given for groups to create the number of looks that demonstrate the *big idea* of their line, rather than being shackled to a traditional twenty-four piece collection. In sum, assignments were kept structured enough to provide students direction in their conceptual process, but loose enough to prevent being boxed in by a traditional or prescriptive notion.

### *Company training*

As part of the semester role-play, the ESD-related skills were incorporated into the course by way of a series of lesson plans at the beginning of the course, designated company training. This training would be presented to students, fictitious employees of Green Sweat, Inc.,

as important preparation for working through sustainability-related problems. An emphasis on conflict resolution was made, as this topic was often omitted from other professional development or management courses required by undergraduates in this TA programme. Historically, this course also held a reputation of generating ample conflict among student groups, so this tact was responsive to this need. A three class-period training programme centred on conflict resolution was developed. As such, training would likely prove a valuable framework for productive and effective collaboration. The book *The Eight Essential Steps to Conflict Resolution: Preserving Relationships at Work, at Home, and in the Community* (Weeks, 2004) provided the primary skeleton of the programme. The tenets used by Weeks aligned with the characteristics of the ESD-related skills, using similar language and approaches, which was invaluable. Additionally, scenarios were developed using real situations that had occurred in the course previously for students to work through together in class, applying the conflict resolution steps to determine approaches that could be used in those situations. Lastly, a final lesson plan surrounding the concept of democracy, considered fundamental to ESD, was used to reinforce and extend the ideas from the conflict resolution training with techniques, such as nominal group process and democratic dialogue and debate.

### *Lesson plans and participation assignments*

Next, lesson plans and participation assignments related to course content were created. Central in these plans were shared work, discussion, opportunities for application and critique. Consistent with Eisner's (2002) philosophy of variety in modes of presentation (how ideas are communicated to learners), few lesson plans looked the same. Rather, the most important concept to be learned in the lesson was the spark to fuel the mode of presentation, with the chief consideration being student engagement. For instance, two class periods following the company training were designated as days to explore the future. The first class period would be a collective lecture in which groups would be assigned an article from the journal, *The Futurist*, about general global trends. Groups would be asked to read the article, determine the highpoints and relevance to the apparel industry and then share their findings with the class. Information gathered would be posted on a group wiki page, compiling useful information that all the students would utilise later when working on their semester projects. The *Fashion Futures* report would be introduced at the end of this lesson plan, as a way to then narrow future trends to the fashion industry. The second class period would utilise a workshop by Bennie et al. (2010; available at [forumforthefuture.org](http://forumforthefuture.org)) *Fashion Futures 2025*, in which groups could explore a day in the life of each scenario. Students would be broken into groups, assigned one of the four scenarios and asked a series of questions that might describe someone who lived in that scenario, such as: *Where do you live? Where do you work? How do you get to work? What kind of apparel do you wear? Where do you shop?* This information would be later used to develop the consumer profile assignment for the semester project.

Lesson plans related to sustainable design paradigms were also created. These lessons were designed to introduce the concept, allow students to apply it in some creative way and

then critique its usefulness to the apparel industry. For instance, one lesson plan about Biomimicry introduced the concept and how it might relate to fashion design. Then, students would be asked to go out and photograph nature, developing an aesthetic palette they could later use in their design-related assignments. Upon return, they would be asked to critique the advantages and limitations of such a concept to apparel design. Another lesson plan, Design for Environment, introduced the concept of Design for X, a list of strategies that could be used to make manufactured products more efficient. Students would be given a garment profile, such as a wedding dress or swimsuit, with a list of its material contents and asked to redesign the garment for greater efficiency. Students would be asked to sketch out their ideas in groups and then share their new concepts with the class.

A number of lesson plans were designed around analyses fundamental to sustainability, such as triple bottom line, life cycle and stakeholder analyses. For instance, to help students learn how to use systems thinking, students would be required to read different articles about apparel brands that use sustainable strategies prior to the lesson plan. After the concept of systems thinking was introduced, the triple bottom line would be used to analyse the sustainable apparel market as a system. Lists would be created by students for social, environmental and economic issues reflected in the industry articles. Students would be asked to cross reference the triple bottom line with a SWOT (strengths, weaknesses, opportunities and threats) analysis during the discussion. Thus, students would identify SWOT elements under each triple bottom line heading. Upon completion, students could visualise a conceptual map of this system, seeing where social, environmental and economic dimensions of the system may conflict or reinforce each other.

Generally, lectures of static content were virtually absent. Lesson plans were more often characterised by mechanisms to trigger engagement such as discussion questions, games, group collaboration, creative brainstorming and application; the method chosen based on the concept to be learned. Lesson plans were often enhanced with entertaining video clips, such as lectures from Ted.com which often discuss abstract and highly innovative concepts related to design or sustainability, or unusual images of creative work related to design; both used to incite discussion and imagination. Implicit in these lesson plans was a high level of instructor-to-student and student-to-student interaction that made sharing ideas and information as well as labour more possible. This planned level of interaction is supportive of a constructivist approach to pedagogy, creating opportunities for mental contradictions that facilitate learning, but it also imposed a personal interdependency among the classroom community, supportive of sustainable development.

Reflective of Eisner's (2002) appreciation for the journey of learning, the researchers made an important decision regarding how the journey would be incentivised. The aforementioned semester project completed by student groups that comprised the product development plan only represented half of the total semester grade. The other half of the student's semester grade was derived from participation, which could be earned via two inter-related components: (1) 30% of the course participation grade was determined by consistent attendance, quality engagement in the classroom, contribution to group work and a demonstration of a learning attitude and (2) the remaining 20% of the course participation grade would be derived from two reflective writings, discussed next, which prompted students to reflect on their own learning more deeply. As part of the former, a series of formal partici-

pation assignments were created to support the lesson plans. For instance, one participation assignment required the submission of a power point slideshow of pictures taken for the Biomimicry lesson plan. The collective lecture conducted about the future became a formal participation assignment. Students were given an actual assignment description for these projects, for which they would receive formal feedback on their participation, another mechanism for assessment.

### *Reflective writings*

Reflection has been identified in the ESD literature as an important skill for students to develop (Keeney, 1992; Forum for the Future, 2005; Howard, 2008). More importantly, student reflections are considered to not only enhance the learning process but also provide a valuable evaluation tool about how students experience their learning environment and how learning takes place (Kusnic & Finley, 1993; MacGregor, 1993). As such, two reflective writing assignments were built into the course; one during the mid-term and the other at the close of the course. A template was created to explain each skill, to aid the student in understanding how these skills were defined and, thus, how they may evaluate themselves and reflect on their performance. During the reflective writings, students would be required to discuss their use of the collaborative and thinking skills as well as general learning insights that may have occurred. This assessment tool would hold students accountable for using their collaborative work to learn more about themselves and improve their performance.

### *Teaching the implicit*

As discussed here in the development of lesson plans and course assignments, the explicit planned learning outcomes were given ample room to be changed, exceeded and transformed by students in their experience taking the course, an important expectation of Eisner (2002). But, central in all course activities was the implicit and, much hoped for, the development of potential industry change agents. The course was ultimately designed to empower TA students to make change, asking *What if?*, arming them with multiple perspectives, their own imaginative skill, their own ethical compass and the collaborative and cooperative skills to engage others in whatever their mission may be. Other implicit outcomes included the ability to navigate real industry expectations and conditions, such as the iterative, concurrent, interdisciplinary and collaborative nature of product development.

The course design reflected such conditions. Firstly, collaborative interdisciplinary teams were formed; creating student collaborative groups from both marketing and design students, while also designating unique responsibilities that characterised the management roles they played. Secondly, more than one group assignment was often being completed at the same time, prompting students to toggle between multiple activities, working on multiple issues concurrently. This required two-way communication between managers who were facilitating different pieces of different assignments, which ultimately, supported

greater cohesion among assignments. Lastly, students found themselves in a situation commanding them to employ various professional standards, fundamental to the apparel industry, such as time management and attention to detail, even if these were not made explicit in the planned learning outcomes.

## **Recommendations and conclusion**

Admittedly, the preceding descriptive case study was elaborate, but is nevertheless useful for illustrating the general process by which educators may integrate sustainability according to ESD. During this case study, the researchers were able to develop a process which addressed two major need areas: the need to empower individual educators to integrate ESD at the course level and the need to provide a mechanism to hold the educator accountable to ESD in the context of any discipline.

Though it may be unlikely that other educators may repeat this precise process, the model presents some key features found highly valuable during this conceptual process which may be customised based on the needs of the course and the educator, optimising the model's use. The following are some recommendations of how the above model could be utilised more succinctly.

- One should utilise the early portions of the model influenced by Tyler (1949) to reframe discipline-specific learning outcomes for sustainability. Key sources which describe the ESD framework, such as Armstrong (2011), McKeown (2006), or Forum for the Future (2005) are helpful resources for such.
- One should identify points where content may be enhanced for sustainability by comparing the discipline's literature on a topic to sustainability-related literature from other disciplines.
- One should use the portion of the model influenced by Eisner (2002) to develop learning events and assessment methods, using the pedagogical proclivities of ESD, like constructivism, to enhance learning about sustainability. See Armstrong (2011) for a discussion about the use of pedagogical practices that may be used to teach sustainability.

The model may also be used to holistically redevelop an entire curriculum, collecting primary data and working as a faculty team to transform an entire programme. Whatever the case, the course redevelopment model offers a structured process, which held the researchers in the current case accountable to ESD. Though curriculum development is, by nature, highly iterative and, in many ways, a trial-and-error endeavour, the model offers educators a mechanism for making sound decisions supportive of the educational philosophy and psychology of ESD. It also provides a conduit for producing a cohesive course plan to implement ESD, reframing discipline-specific content to align with sustainability.

Though institutional barriers to sustainability abound, the model may empower educators to act now, making transformational change at the course level. This may, in turn, catalyse larger systemic change. Finally, though a discussion about the findings related to the student experience in the redeveloped course during the larger exploratory case study is

beyond the scope of this paper, it is instead the formal topic of other papers currently in progress. But, decidedly, according to students who participated in these studies, the course experience was distinct in its development of their understanding about sustainability, the development of their collaborative skills and the methods by which these capacities were developed.

## References:

- ACPA – College Student Educators International. (2008). *Toward a sustainable future. American College Personnel Association*. Retrieved from <http://louisville.edu/student/about/ACPASustainabilityMonograph.pdf>
- Armstrong, C. M. (2011). Implementing education for sustainable development: The potential use of time-honored pedagogical practice from the progressive era of education. *The Journal of Sustainability Education*, 2, n. pag.
- Armstrong, C. M., & LeHew, M. L. A. (2011). Sustainable apparel product development: In search of a new dominant social paradigm for the field using sustainable approaches. *Fashion Practice*, 3(1), 29–62.
- Bosselmann, K. (2001). University and sustainability: Compatible agendas? *Educational Philosophy and Theory*, 33(2), 167–186.
- Bowers, C. A. (2001). Challenges in educating for ecologically sustainable communities. *Educational Philosophy and Theory*, 33(2), 258–265.
- Calder, W., & Clugston, R. M. (2003). Progress toward sustainability in higher education. *Environmental Law Reporter*, 33, 10003.
- Cotton, D., Bailey, I., Warren, M., & Bissell, S. (2009). Revolutions and second-best solutions: Education for sustainable development in higher education. *Studies in Higher Education*, 34(7), 719–733.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. California: Sage Publications, Inc.
- Dale, A., & Newman, L. (2005). Sustainable development, education and literacy. *International Journal of Sustainability in Higher Education*, 6(4), 351–362.
- de le Harpe, B., & Thomas, I. (2009). Curriculum change in universities: Conditions that facilitate education for sustainable development. *Journal of Education for Sustainable Development*, 3(1), 75–85.
- Egan, J. (2004). *Skills for sustainable development*. London: Office of the Deputy Prime Minister.
- Eisner, E. W. (1967). Education objectives – help or hindrance? *School Review*, 75(3), 250–260.
- Eisner, E. W. (1998). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. Upper Saddle River, NJ: Prentice Hall.
- Eisner, E. W. (2001). What does it mean to say a school is doing well? *Phi Delta Kappan*, 82(5), 367–372.
- Eisner, E. W. (2002). *The educational imagination: On the design and evaluation of school programs* (3rd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

- Ellis, G., & Weekes, T. (2008). Making sustainability 'real': Using group-enquiry to promote education for sustainable development. *Environmental Education Research, 14*(4), 482–500.
- Everett, J. (2008). Sustainability in higher education: Implications for disciplines. *Theory and Research in Education, 6*(2), 237–251.
- Forum for the Future. (2005). *Learning and skills for sustainable development*. London: Higher Education Partnership for Sustainability.
- Bennie, F., Gazibara, I., & Murray, V. (2010). *Fashion futures 2025*. London, UK: Forum for the Future.
- Foster, J. (2002). Sustainability, higher education and the learning society. *Environmental Education Research, 8*(1), 35–41.
- Glock, R. E., & Kunz, G. I. (2005). *Apparel manufacturing: Sewn product analysis*. New Jersey: Pearson Prentice Hall.
- Gough, S., & Scott, W. (2001). Curriculum development and sustainable development: Practices, institutions, and literacies. *Educational Philosophy and Theory, 33*(2), 137–12.
- Haigh, M. (2005). Greening the university curriculum: Appraising an international movement. *Journal of Geography, 29*(1), 31–38.
- Haigh, M. (2008). Internationalization, planetary citizenship and Higher Education, Inc. *Compare: A Journal of Comparative and International Education, 38*(4), 427–440.
- Hopkins, C., & McKeown, R. (2005). *Guidelines and recommendations for reorienting teacher education to address sustainability*. Paris, France: United Nations Educational, Scientific, and Cultural Organization.
- Howard, P. (2008). Ecology, phenomenology, and culture: Developing a language for sustainability. *Diaspora, Indigenous, and Minority Education, 2*(4), 302–310.
- ITAA. (2008). *Four-year baccalaureate programme meta-goals*. Retrieved March 29, 2009, from [http://www.itaonline.org/downloads/ITAA\\_Four\\_Year\\_Baccalaureate\\_Program\\_Meta-Goals\\_2008.pdf](http://www.itaonline.org/downloads/ITAA_Four_Year_Baccalaureate_Program_Meta-Goals_2008.pdf)
- Jucker, R. (2002). "Sustainability? Never heard of it?" Some basics we shouldn't ignore when engaging in education for sustainability. *International Journal of Sustainability in Higher Education, 3*(1), 8–18.
- Jucker, R. (2004). Have the cake and eat it: Ecojustice versus development? Is it possible to reconcile social and economic equity, ecological sustainability, and human development? Some implications for ecojustice education. *Educational Studies Journal of the American Educational Studies Association, 36*(1), 10–26.
- Keeney, R. L. (1992). *Value-focused thinking*. Cambridge: Harvard University Press.
- Kevany, K. D. (2007). Building the requisite capacity for stewardship and sustainable development. *International Journal of Sustainability in Higher Education, 8*(2), 107–122.
- Kuznic, E., & Finley, M. L. (1993). Student self-evaluation: An introduction and rationale. In J. MacGregor (Ed.), *Student self-evaluation* (pp. 5–14). San Francisco, CA: Jossey-Bass.
- Landorf, H., Doscher, S., & Rocco, T. (2008). Education for sustainable human development. *Theory and Research Education, 6*(2), 221–236.

- MacGregor, J. (Ed.). (1993). *Student self-evaluation*. San Francisco, CA: Jossey-Bass.
- Marsh, C. J., & Willis, G. (2007). *Curriculum: Alternative approaches, ongoing issues*. Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. Hoboken, NJ: John Wiley & Sons.
- McKeown, R. (2006). *Education for sustainable development toolkit*. Retrieved from [www.unesco.org/education/desd](http://www.unesco.org/education/desd)
- Moore, J. (2005). Barriers and pathways to creating sustainability education programs: Policy, rhetoric and reality. *Environmental Education Research, 11*(5), 537–555.
- Oliva, P. F. (2009). *Developing the curriculum* (7th ed.). Boston: Pearson Education, Ltd.
- Orr, D. W. (2003). Viewpoint: Planning to learn. *Planning for Higher Education, 31*(3), 77–81.
- Orr, D. W. (2004). *Earth in mind*. Washington, DC: Island Press.
- Pinar, W. F., Reynolds, W. M., Slattery, P., & Taubman, P. M. (1995). *Understanding curriculum: An introduction to the study of historical and contemporary curriculum discourses*. New York: Peter Lang Publishing.
- Rees, W. (2003). Impeding sustainability? The ecological footprint of higher education. *Planning for Higher Education, 31*(3), 88–98.
- Rode, H., & Michelsen, G. (2008). Levels of indicator development for education for sustainable development. *Environmental Education Research, 14*(1), 19–33.
- Sipos, Y., Battisi, B., & Grimm, K. (2008). Achieving transformative sustainability learning: Engaging head, hands and heart. *International Journal of Sustainability in Higher Education, 9*(1), 68–86.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oakes, CA: Sage Publications.
- Sterling, S. (2004). Higher education, sustainability, and the role of systemic learning. In P. B. Corcoran & E. J. Wals (Eds.), *Higher education and the challenge of sustainability: Problematics, promise, and practice* (pp. 49–70). Dordrecht: Kluwer Academic Publishers.
- Sterling, S., & Scott, W. (2008). Higher education and ESD in England: A critical commentary on recent initiatives. *Environmental Education Research, 14*(4), 386–398.
- Svanström, M., Lozano-Garcia, F. J., & Rowe, D. (2008). Learning outcomes for sustainable development in higher education. *International Journal of Sustainability in Higher Education, 9*(3), 339–351.
- Tyler, R. W. (1949). *Basic principles of curriculum and instruction*. Chicago, IL: University Chicago Press.
- UNESCO. (2005). *Contributing to a more sustainable future: Quality education, life skills and education for sustainable development*. Retrieved from <http://unesdoc.unesco.org/images/0014/001410/141019e.pdf>
- Warburton, K. (2003). Deep learning and education for sustainability. *International Journal of Sustainability in Higher Education, 4*(1), 44–56.
- Weeks, D. (2004). *The eight essential steps to conflict resolution*. New York, NY: Penguin Putnam.

Yin, R. K. (1989). *Case study research: Design and methods*. Newbury Park, CA: Sage Publications.

**Correspondence:**

Cosette Armstrong, PhD, Oklahoma State University, 437 Human Environmental Sciences, Stillwater, OK 74078-6142. Tel: 615-495-9215. Email: [cosette.armstrong@okstate.edu](mailto:cosette.armstrong@okstate.edu)

## **FURTHER EDUCATION FOR TRAINERS AND TEACHERS – FINDINGS OF THE PROJECT “EUROCRAFTS 21 – MAKING HANDICRAFT SUSTAINABLE”**

**Anna Bliesner**

Wuppertal Institute for Climate, Environment, Energy, Germany

**Christopher Manstein**

Factor 10 Institute, Austria

**Holger Rohn**

Trifolium-Beratungsgesellschaft mbH, Germany

### **Abstract**

*The purpose of the paper is to share the findings of a European innovation transfer project (2008–2010) for strengthening sustainability in European handicraft with the aim of transferring a German qualification and consulting concept. The focus of the paper is a train-the-trainer design, which was developed, tested and evaluated with regard to the specific qualification needs and the existing qualification concepts of five European countries. The paper provides content, didactic approach and methods of the train-the-trainer design and the key results of the related analysis of research data. Furthermore, the train-the-trainer design is embedded within the project approach, the methodology of realising an innovation transfer and the associated project products. The results of the train-the-trainer design evaluation are reflected upon with regard to starting points of a European qualification concept for sustainability in handicraft.*

**Key words:** *sustainable development, innovation transfer, further education, handicraft enterprises, qualification and consulting concept, train-the-trainer*

### **Introduction**

It is widely evidenced that small and medium-sized enterprises (SMEs) with a firmly established and practiced corporate strategy of sustainable management benefit from competitive advantage (European Commission, 2007; Mandl & Dorr, 2007). The internal capability of enterprises to initiate innovations and to successfully implement them in the long term largely depends – besides organisational and technical conditions – upon the people who

work in the respective enterprise (Henning, Oertel, & Isenhardt, 2003; Anlauff, 2007) and their qualifications and competencies (Stadelmann, 2004; Hartmann, Brentel, & Rohn, 2006).

This is correlated with the need for qualified trainers, teachers and consultants to enable people in SMEs to face the challenge of sustainable management. Most SMEs in Europe are located in the craft sector. Here appropriate qualification and consulting possibilities in the context of sustainable management are still missing. Therefore, the European craft sector is a significant target group for trainers and teachers with the aim of enhancing sustainable global business. In order to meet this challenge, they themselves need to be trained. For this purpose, a train-the-trainer design related to a qualification and consulting concept (QCC) developed within the European innovation transfer project “EuroCrafts 21 – making handicraft sustainable” (2008–2010, EU Life Long Learning Program) is presented below. The project aims to contribute to a more sustainable European Craft sector as this is a main challenge of the 21st century (“EuroCrafts 21”).

In the project, ten partner organisations from six EU countries (Austria, Finland, Germany, Hungary, Slovakia and Spain) realised the transfer and further development of an innovative German QCC (Westdeutscher Handwerkskammertag, 2007) in the context of sustainable development for European craftsmen. The target groups for the development of competencies were educational staff at further vocational education and training institutes, owners of enterprises and business executives as well as consultants and multipliers. The project partners, in addition to some 70 European trainers and 18 pilot enterprises, attended the project work (Leinonen & Rynänen, 2010). As a central instrument for realising the innovation transfer, a train-the-trainer design was developed, piloted and evaluated.

Regarding the contents, the existing German QCC was expanded by the development of six new modules (Figure 1). The main result of the project EuroCrafts 21 is an extensive internet tool with 16 different qualification modules for sustainable development in the craft sector, which is also available as a CD-ROM/DVD (Manstein & Rohn, 2010). All results and products of the project as well as the internet tool are described on the project’s homepage ([www.eurocrafts21.eu](http://www.eurocrafts21.eu)).

In terms of education policy and economic strategy, the project was well placed among political efforts to achieve a more sustainable mode of production. The project is embedded into the Lisbon and EU Sustainability Strategy (see also “Europe 2020”) as well as the UN Decade of Education for Sustainable Development and is supposed to contribute essentially to their implementation.

Hereafter, the focus falls on the function, concept and evaluation of the developed train-the-trainer design in connection to the QCC. For this purpose, the QCC used and developed in the project is first introduced explaining the train-the-trainer design as found in the sections for content and methodology. The project context illustrates the foundations of the methodological procedure developed for the concept design of train-the-trainer and further outlines its content and method. Next, methodology and results of the evaluation of the train-the-trainer design are presented. The succeeding discussion places the train-the-trainer design in a wider context of a European qualification and consulting concept (EQCC), for which first starting points were identified in the EuroCrafts 21 project. The closing of the paper provides a short conclusion.

## **Framework conditions: The qualification and consulting concept**

### *Target group needs*

The QCC is designed to integrate the guiding principle of sustainability into existing business processes in SMEs. It considers the context of SMEs in the craft sector, in particular, that they are driven by day to day business and can afford little additional resources (Kuhndt, von Geibler, & Villar, 2003) but still wish to improve their competitive position by incorporating sustainability. The concept considers existing business processes that take place in SMEs and frames these processes within the guiding principle of sustainability. Instead of providing additional measure, this approach is based on existing structures and operations and thereby offers a framework in which the implementation of steps towards more sustainable business processes can be categorised and, thus, implemented more easily. Sustainability as an integrated element can be identified within the content of the QCC and its approach in consulting, assessment and qualification. The approach of the QCC brings together advisory and qualifying aspects that consider the particularity of SMEs in the craft sector: scarce time, financial and human resources, limited possibilities for implementing training for sustainability by own initiative (European Association of Craft, Small and Medium-sized Enterprises, 2010). It recognises that enterprise owners and business executives need a flexible approach and often a certain degree of support.

### *Structure*

The QCC is a modular concept that is composed of basic and special modules freely chosen, consisting of content components and learning materials (Figure 1).

The basic modules (marked with B) contain the core aspects necessary for the qualification in sustainable business in the crafts sector. They include an introduction to the topic of sustainable development (B1) and a self-assessment tool for enterprises (B2). Module B1 and B2 can be used independently, but module B1 creates the foundations for the self-assessment concerning sustainability issues. The self-assessment tool is a questionnaire-based instrument, which helps enterprises and organisations to find out about future-compliance of their operations. The self assessment serves to review the current situation of businesses in the crafts sector in order to establish their available strengths and activate accessible potentials as well as initiate improvement by introducing a first action plan in these businesses. The aim of the approach is to point out specific needs for information, training and development in crafts businesses and base this on strengths and potentials that they have recognised themselves by conducting the self assessment in their companies. The special modules (marked with S) serve to address specific qualification needs that are recognised by self-assessment.



Figure 1. Modules of the qualification and consulting concept (own source)

As part of the innovation transfer, the German QCC was extended, adapted and customised so that QCC now spans 16 modules (Figure 1).

All QCC modules follow the same structure. After an introductory module description the content is presented in form of three to five content components, which introduce the topic. References to further literature, useful media and links are given. Each module includes a number of work-sheets from which a selection can be taken. The work-sheets are designed so that they can be used as a direct master copy for the learners – they include instructions directed specifically to them. In addition the work-sheets include a section with hints for the trainers: how to conduct the qualification sessions and what is the necessary time frame for the implementation of the relevant material. Competence and knowledge acquisition through direct reference to the individual scope of action from the participants is supported through the different modules of the QCC. The work-sheets aim at different levels of competence development: reflection, cooperation and communication, participation, dealing with information as well as professional expertise.

### *Didactic approach/enabling method*

The work-sheets pay special attention to applying learning and action formats whose didactic approach aims at learning according to an enabling approach (Holzkamp, 1996; Arnold, 1999; Siebert, 2005). This didactical approach is based on the assumption that learning can be stimulated and/or supported as construction of reality by certain methods. The prioritising of specific methods can be traced back to didactical principles (for instance, Bund-Länder-Kommission, 1998), which allow implication for teaching-learning-activities. In the design of the materials, the didactical principles of the subject and behaviour orientation as well as the problem orientation and reflection were taken into account (Schübler, 2003; Pätzold & Wortmann, 2006). On the micro-didactical level, construction methods are preferred to instruction methods in the QCC (Siebert, 2006). The choice of methods for the work-sheets is based on the following criteria:

- Methods should focus on different learning forms/forms of action: listening, reading, writing, presenting something, discussing, reflecting, and finding arguments.
- Methods should be on different levels of difficulty (easy: brain storming vs. complex: role-play).
- The method-mix should consist of creative methods (painting a picture), instrument-related methods (making a SWOT analysis: strengths, weaknesses, opportunities, threats), communicative methods (“role play”) and reflective methods (“time travel”).

The methods should enable the learners to mentally discover the subject of the lesson themselves (Stengel, Liedtke, Baedeker, & Welfens, 2008; Welfens, Liedtke, & Schaefer, 2008).

### *Extendibility and areas for application*

The concept can be enlarged on every level by adding a whole new module, a single content component (new subtheme) or/and a new work-sheet. The modules as well as the content components and work-sheets are independently usable, so no fixed order has to be followed. Although the modules have been designed for the target group of managers in the crafts sector, the provided work-sheets, methods and media can be useful and educational to a wide range of users: from the highly advanced to those with no previous knowledge. This aims at a broad and flexible usability and applicability of the QCC in the European crafts sector.

### *Medial processing*

The developed QCC and other products were processed for the target groups as multilingual online tool ([www.eurocrafts21.eu](http://www.eurocrafts21.eu); Manstein & Rohn, 2010). This tool is free of charge. The main language of the EuroCrafts 21 tool is English, but several materials are also available in other native languages (German, Finish, Spanish, Hungarian, Slovakian).

The modules and work-sheets are offered in a way that aims at intuitive navigation. Therefore, basic modules and special modules are separated and modules, content components and work-sheets are numbered (module B1, content component B1-A to B1-n, work-sheet B1-A1 to B1-An). To allow adaption and application tailored to specific needs, documents, such as work-sheets, are in word format. This way users are able to make changes within materials. The tool is also designed in a flexible way, which allows a supplement of further languages as well as further content.

## **Approach and conditions of development: The train-the-trainer design**

### *Context*

The qualification was designed as a workshop format. The aim of the train-the-trainer workshops was to offer a theoretical and practical qualification for trainers by going through a train-the-trainer workshop first and then putting their new knowledge into practice by leading a pilot-testing with at least one craft enterprise (Figure 3). During the 1.5 day workshops, content and structure of the QCC was explained and experienced by trainers, teachers, consultants and multipliers of the craft sector. During the workshops, the participants gained competencies concerning the use of the QCC as well as professional and methodological knowledge. The target groups of the workshops were teachers and trainers of vocational education in the craft sector as well as consultants in crafts sector and multipliers, who wanted to qualify enterprises by enabling them to make use of sustainability potentials in their every-day-business.

### *Competencies*

The train-the-trainer workshops were designed in content and method to realise a broad competency development of the trainers. On the one hand, the workshops aimed for the professional qualification of trainers to participate in the training processes specific to their specialist field's (for instance, technology) know-how. On the other hand, the promotion of skills and knowledge beyond their field was important in order to pass on the content of the QCC adequately. Such competencies mainly represent the methodological and social skills of participating actively and constructively in sustainable management and skills of independent initiation, which empower others to participate in these processes.

### *Structure and basic conditions*

The train-the-trainer workshops included informational input-parts and active work-parts. Using concrete learning material of the QCC modules, the participants, on the one hand, gained experience of the existing material. On the other hand, they became more familiar

with the structure of the QCC. All workshops were based on the same basic structure and common targets.

The train-the-trainer workshops were planned for up to a maximum of 15–20 participants. The language of the workshop was English. An extensive preparation beforehand was not prepared, but short descriptions in English of the overall concept were delivered.

The basic structure of the train-the-trainer workshop was arranged to be flexible in a certain frame. It could be enlarged or downsized in the different phases of the structure. If the participants of the workshop had previous extensive knowledge about sustainability, work phase No. 2 was downsized, for instance. The adaptation of the basic structure depended on the needs of the target group and the working conditions.

The content of the train-the-trainer was described on the level of learning outcomes in order to ensure first steps in the extendibility to European Educational Policy and in an effort towards European comparability of competencies.

### *The train-the-trainer design in the context of the project approach for realising innovation transfer*

The train-the-trainer design is embedded in the concept of realising innovation transfer. In order to raise the QCC to the European level, numerous analyses were conducted.

To ensure the extendibility and suitability of the QCC in terms of content and didactics, the status quo of the existing qualification and consultation concepts with the focus of sustainability of SMEs in the craft sector was surveyed in a first step. Upon identification of these concepts, they were evaluated regarding their strength and weaknesses. A stakeholder analysis of the participating partner organisations in the project and an assessment of the stakeholders' qualification needs highlighted the target groups for the QCC and the needs to be addressed. Based on these analyses, the QCC was further reflected in terms of the country specific needs, however maintaining the essential features of the concept like the module structure and the didactic approach. The changes were thus limited to adaptations in content. The train-the-trainer design was created according to stakeholders' needs so that it could address the differing levels of previous knowledge on sustainability issues with a good degree of flexibility in the procedure. The application of the work-sheets was likewise adapted to suit the aspiration level of content and method. Moreover, the selection of work-sheets in the train-the-trainer workshops enabled a country specific content adaption.

Building on the mentioned analyses, the project partners developed country specific implementation concepts for the QCC. In this context, the pilot concept for the innovation transfer was generated and implemented (Figure 2), for which the train-the-trainer design represented the starting point.

Upon certified completion of the train-the-trainer workshop, trainers were involved in the pilot-testing concept. For the pilot-testing of the QCC in the partner countries participating in the project EuroCrafts 21, 18 enterprises from five European countries were involved. Subject of the pilot testing with the enterprises were the basic modules (B1 & B2) and the adaption and implementation of existing special modules of the QCC, followed by the development and pilot testing of new country specific special modules. During this pilot

testing process, the involved national trainers experienced a deepening qualification by guiding the enterprises through the process and using the QCC in real working life.

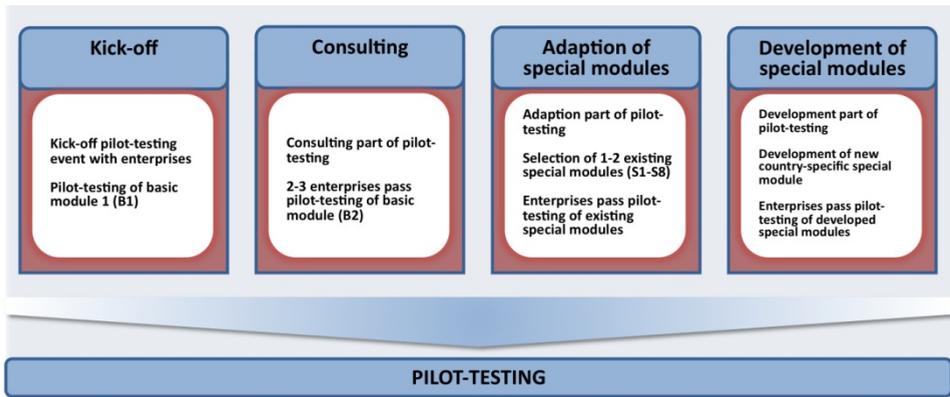


Figure 2. Pilot-testing process of EuroCrafts 21 (own source)

## Evaluation

### *Evaluation of the train-the-trainer design*

Focussing on the trainers' experiences with the QCC, the following was remarked about the design and the results of the evaluation concerning the train-the-trainer workshops.

After completing the train-the-trainer workshop, the trainers took part in a written evaluation. Because of the explorative character of the evaluation, the amount of participants was limited and a more qualitative instead of a representative approach was followed.

The participants were asked to scale their opinion on a bipolar rating scale (Figure 3). The bipolar scale was chosen to make use of the two contrasting terms helping to define each other (Bortz & Döring, 2006) so all non-native-English speaking participants were able to understand. Since there was no significant probability of a central tendency, the participants were asked to score on a five-point scale based on school grade system as this turned out as the most familiar form of doing the rating. The questionnaire contained 17 questions concerning process, content, moderation and learning success of the workshop. The questionnaires closed with four open questions concerning suggestions for improvement and further content. The number of the valid responses was 47 while the total amount of all participants in the workshops was around 1/3 higher. The data of the open questions was analysed with reference to qualitative content analyses (Mayring, 2010) by using techniques of interpreting, structuring and categorising. The results were processed for each workshop to uncover country specific aspects of the evaluation. The results were presented and discussed during one of the transnational meetings of the project.

The atmosphere was						
very comfortable	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	very tense

Figure 3. Item of train-the-trainer workshop evaluation (own source)

### *Evaluation results (summary)*

First of all, it is important to note that the results are derived from the specific project context and are thus not transferable in a general manner onto other EU situations, nor do they possess much empirical scope. Nevertheless, important lessons for educational models in the European context in respect to sustainability in business and for the further improvement of the developed QCC can be found. The overall evaluation of the quantitative data is provided in Figure 4 (Finland n=6, Austria n=9, Hungary n=10, Slovakia n=9, Spain n=13; average data of each country used).

### *Prior knowledge as a limiting factor*

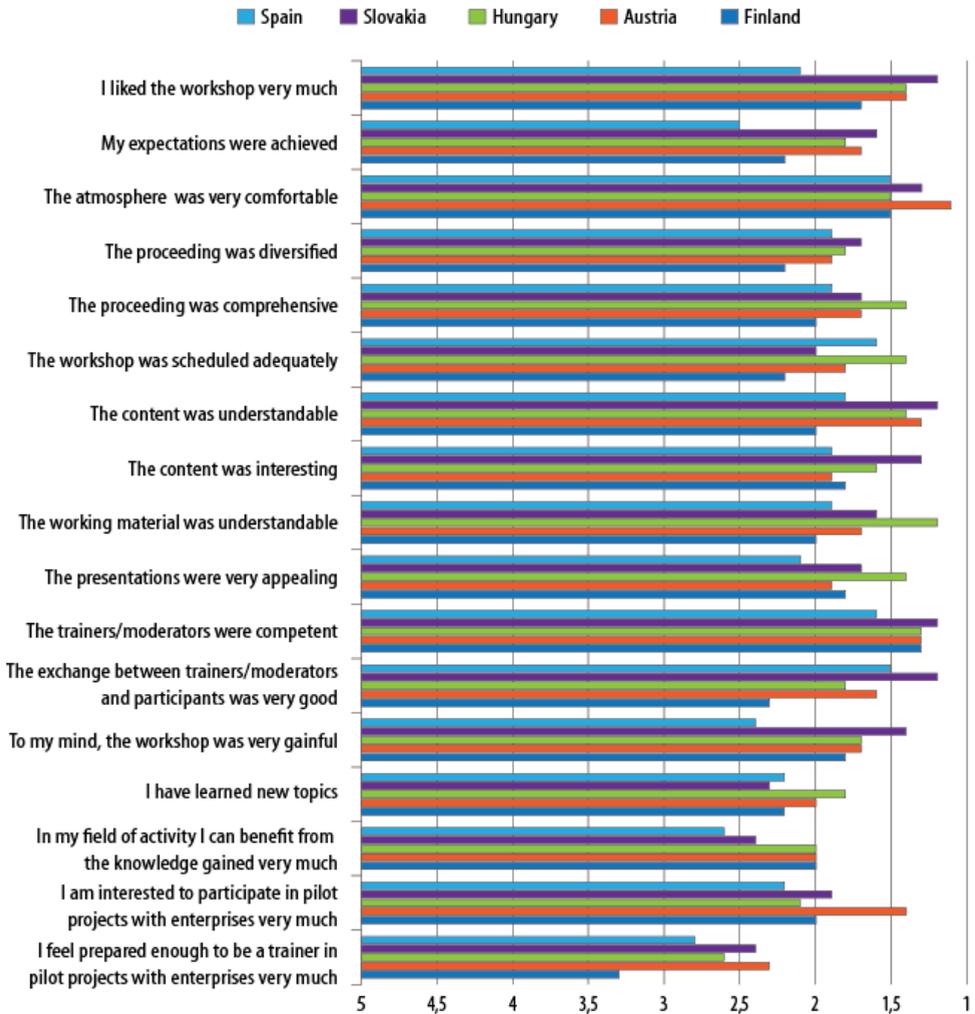
First, it can be stated that a wide range of knowledge about trainings in general and about sustainability/sustainable management in particular characterises the prior knowledge of trainers in further vocational education. Pre-training in issues of sustainability, sustainable business and sustainable production could be beneficial and would in any case homogenise participants.

### *Didactic approach was suitable*

The participants gave positive feedback on the didactic approach of the seminars. The mixture of informative parts and active work was rated as comfortable. Especially creative and reflexive methods were rated as useful. Despite the critique regarding the duration of the seminar (too long, too short), many participants would have liked more (but time consuming) active parts and concrete exercises. It seems appropriate to evaluate the approach for blended learning also in such a format as the QCC and to assign participants more self-responsibility for seminar related tasks.

*Self-assessment and special modules were attracting*

The self-assessment (B2) was rated as very useful. To draw more attention to it, a short preview could be made at the beginning of the first day of the workshop and time for practicing could be extended (even if it is already assigned a long time slot). Furthermore, the special modules component could be expanded, since the majority of the participants wished deeper examinations of these.



*Based on school grading system (1 = best mark, highest agreement; 5 = worst mark, lowest agreement)*

Figure 4. Evaluation results of train-the-trainer workshops, quantitative data (own source)

### *Feeling able to act autonomously*

The majority of the participants felt able in parts to act as a trainer in enterprises when making concrete use of the QCC after the seminar. The reservations expressed from the participants can be set in correlation mainly to the short duration of the workshop and the high fluctuation of participants' attendance during workshop days and between the two days of the workshop. In addition to that, the different levels of the participants' language proficiency seemed a hindrance.

Those participants who expressed their interest in pilot-testing with enterprises using the QCC have to be supported and guided by transnational project partners at first – the workshop has built a good stock of knowledge concerning the approach, content, methods and structure of the QCC, but has to be completed in a team effort of project partners and external trainers.

## **Discussion**

### *Starting points for a European qualification and consulting concept*

The work on EuroCrafts 21 has shown that the innovation transfer of the German approach was successful and that the QCC and the train-the-trainer design, as an instrument, is useful also for European contexts. Taking into account the lessons learned, the obvious question is what adoptions and what kind of further development is necessary to build up a fully developed EQCC.

The following recommendations have to be understood with regard to the background of the project and the specific experiences the project partners made when working on the targets of EuroCrafts 21. The recommendations offer valuable perspectives and suggestions but do not claim to be universally valid.

### *Which content should be central to the EQCC?*

The design of the special modules of the QCC, which was developed in the project EuroCrafts 21, resulted from the identified country specific qualification needs. Therefore, the special modules reflect these specific needs. When increasing the number of modules, the challenge whether new additional topics are to be assigned to an existing module or whether totally new modules are to be added will arise. Topics such as resource efficiency in production and along the value chain are relevant future topics (Rohn, Pastewski, & Lettenmeier, 2010; Schmitt, Klinke, & Rohn, 2011).

The identification of these basic topics should result from a European meta-analysis and should be pre-specified. This would ensure that the crucial European needs with reference to European-wide qualification contents for SMEs in the European handicraft sector are taken into account. In this context, political decision-makers should also be involved.

*Which target groups should the expansion to the EQCC be designed for and which adaptations to the format would be necessary?*

The target group of the EuroCrafts 21 product consists of educational staff at vocational education and training institutes, factory owners and business executives as well as consultants and multipliers of further education.

It should be questioned whether further target groups on the European level could make use of an EQCC and which medial adjustments to the present concept would be necessary in this context (for instance, EQCC as a blended learning concept).

*Which operational level of the (national) educational systems is suitable?*

In the framework of the project EuroCrafts 21 so far mainly the sector of non-formal (vocational) further education was addressed. The question arises whether expansion might serve the integration of target groups on additional levels of the educational systems. In Finland, for instance, the train-the-trainer workshop raised great interest not only among the ‘main’ target group of the trainers but also among students. An analysis of the curricula of relevant fields of study might reveal the extent to which sustainability and sustainable business etc. are already established and the possible ‘points of entry’ to integrate aspects of sustainability. This would create a remarkable value added for education in the tertiary sector in Germany and on comparative levels in the educational systems of other European countries. Consequently, an adjustment of the curricula on different levels of the European educational systems should also include a qualification of teaching staff. Trainees of crafts enterprises could be a further target group for the EQCC in formal vocational training and further education.

*How can the QCC be linked and aligned to European educational policy?*

With regard to the subject matter of EuroCrafts 21, the efforts of European educational policy in the development of skills and European comparability are central and provide ‘guidelines’ for the development of an EQCC.

Qualification and the development of competencies in the corporate context serve the aim of enabling employee involvement in innovation processes using their expert (technical) know-how. Furthermore, knowledge and skills that go beyond the expert qualification are very important.

With regard to the existing product of EuroCrafts 21 the ‘competence approach’ is implicitly represented in the didactic design of the tested and further developed QCC but should be made more explicit in the advancement process. With reference to European educational policy and the attempts to achieve comparability of competencies on the European level, educational objectives of the respective modules and/or separate learning material should be made explicit in the framework of monitoring educational goals. This would also strengthen the concept’s output-orientation. Such explicit framing is the first prerequisite

for the achievement of European comparability with respect to the learners' competencies, skills and qualifications. It, furthermore, serves the alignment with the European Qualification Framework (EQF).

## Conclusion

Previously, pointers from the evaluation of the train-the-trainer design were highlighted and first fields for further development of the QCC were devised. In conclusion, EuroCrafts 21 can be described as a successful innovation transfer project. The approach and the didactical processing has stood the test and allowed adaption by partner countries. The QCC as a product follows the European recommendations of the German Federal Institute for Vocational Education and Training (Winzier 2009). On the didactic level, it furthermore makes reference to widely accepted concepts of education for sustainable development (Programm Tranfer 21, 2007).

The development of an EQCC in the sense outlined and discussed above is a logical next step in order to significantly add value to the European educational effort in perusal of more sustainable business practices.

## References:

- Anlauff, W. (2007). Unternehmenskultur innovationsförderlich gestalten – ein Weg zu wirtschaftlichem Erfolg und guter Arbeit [An innovation-friendly corporate culture – a pathway to economic success and good work]. In D. Streich & D. Wahl (Eds.), *Innovationsfähigkeit in einer modernen Arbeitswelt: Personalentwicklung – Organisationsentwicklung – Kompetenzentwicklung* [An innovative ability in a modern world of employment: Human resource development – organisational development – development of competencies] (pp. 387–399). Frankfurt: Campus Verlag.
- Arnold, R. (1999). Konstruktivistische Ermöglichungsdidaktik [Constructivistically enabling didactics]. In R. Arnold, W. Gieseke & E. Nuissl von Rein (Eds.), *Erwachsenenpädagogik – zur Konstitution eines Faches* [Adult education – constitution of a subject] (pp.18–28). Hohengehren: Schneider Verlag.
- Bortz, J., & Döring, N. (2006). *Forschungsmethoden und Evaluation für Human- und Sozialwissenschaftler* [Research methods and evaluation for human and social scientists]. Heidelberg: Springer.
- Bund-Länder-Kommission (BLK) für Bildungsplanung und Forschungsförderung [Bund-Länder Commission for Educational Planning and Research Promotion]. (1998). *Bildung für eine nachhaltige Entwicklung – Orientierungsrahmen* [Education for sustainable development – guide]. (BLK publication No. 69). Bonn: Author.
- European Commission. (2007). *Opportunity and responsibility. How to help more small businesses to integrate social and environmental issues into what they do*. Retrieved from [http://ec.europa.eu/enterprise/policies/sustainable-business/files/csr/documents/re\\_e\\_report\\_en.pdf](http://ec.europa.eu/enterprise/policies/sustainable-business/files/csr/documents/re_e_report_en.pdf)

- Hartmann, D. M., Brentel, H., & Rohn, H. (2006). *Lern- und Innovationsfähigkeit von Unternehmen und Organisationen. Kriterien und Indikatoren* [Learning ability and innovation ability of enterprises and organisations. Criteria and indicators]. (Wuppertal Paper No.156). Wuppertal: Wuppertal Institut für Klima, Umwelt, Energie.
- Henning, K., Oertel, I., & Isenhardt, I. (Eds.). (2003). *Wissen – Innovation – Netzwerke. Wege zur Zukunftsfähigkeit* [Knowledge – Innovation – Networks. Paths to future viability]. Berlin: Springer.
- Holzkamp, K. (1996). Wider den Lehr-Lern-Kurzschluß. Interview zum Thema Lernen [Against the teaching-learning-blackout. Interview on the subject learning]. In R. Arnold (Ed.), *Lebendiges Lernen* [Lively learning] (pp. 21–30). Hohengehren: Schneider Verlag.
- Leinonen, R., & Ryyänen, S. (2010). Euro Crafts 21 – developing competencies for sustainable management in European handicrafts. *Lifelong Learning in Europe*, XV(04), 196.
- Mandl, I., & Dorr, A. (2007). *SCR and Competitiveness – European SMEs’ good practice*. Retrieved from <http://www.ifm-bonn.org/assets/documents/CSR-Europa.pdf>
- Manstein, C., & Rohn, H. (Director/Producer). (2010). *EU project “Euro Crafts 21”. Qualification and Consulting Concept* [CD-ROM]. Vienna: Authors.
- Mayring, P. (2010). *Qualitative Inhaltsanalyse. Grundlagen und Techniken* [Qualitative content analysis. Basics and techniques]. Weinheim: Beltz.
- Pätzold, G., & Wortmann, E. (2006). Didaktische Handlungsmöglichkeiten zur Ausbildung von Schlüsselqualifikationen [Didactic possibilities for promotion of key competencies]. In R. Arnold & H.-J. Müller (Eds.), *Kompetenzentwicklung durch Schlüsselqualifikations-Förderung* [Competence development through promotion of key qualifications] (pp. 155–173). Hohengehren: Schneider Verlag.
- Programm Transfer 21. (2007). *Multiplikatorenmodule* [Modules for multipliers]. Retrieved from <http://www.institutfutur.de/transfer-21/daten/multiplikatoren/modul2.pdf>
- Rohn, H., Pastewski, N., & Lettenmeier, M. (2010). *Resource efficiency of selected technologies, products and strategies: executive summary. Summary of task 1 within the framework of the “Material efficiency and resource conservation” (MaRes) projects* (Resource efficiency paper No. 1.7). Wuppertal: Wuppertal Institut für Klima, Umwelt, Energie.
- Schmitt, M., Klinke, S., & Rohn, H. (2011). *Was zeichnet ressourceneffiziente, innovative KMU aus?* [What characterises resource efficient, innovative SMEs?] (Ressourcen-Kultur Paper No. 4). Wuppertal: Wuppertal Institut für Klima, Umwelt, Energie.
- Schüßler, I. (2003). Ermöglichungsdidaktik – eine didaktische Theorie? [Enabling-didactics – a didactic theory?]. In R. Arnold & I. Schüßler (Eds.), *Ermöglichungsdidaktik. Erwachsenenpädagogische Grundlagen und Erfahrungen* [Didactic of enabling. Basics and experiences of adult education] (pp. 76–97). Hohengehren: Schneider Verlag.
- Siebert, H. (2006). *Theorien für die Praxis* [Theories for the practice]. Bielefeld: Bertelsmann.
- Siebert, H. (2005). *Pädagogischer Konstruktivismus. Lernzentrierte Pädagogik in Schule und Erwachsenenbildung* [Pedagogical constructivism. Learning-focused pedagogy in school and adult education]. Weinheim: Beltz.

- Stadelmann, C. (2004). *Messung und Beurteilung des Kulturwandels bei PostMail* [Evaluation and assessment of cultural change at PostMail]. (Lizentiatsarbeit). Retrieved from <http://www.iop.unibe.ch/lehre/lizentiatsarbeiten/LizStadelmann-Christoph.pdf>
- Stengel, O., Liedtke, C., Baedeker, C., & Welfens, M. J. (2008). Theorie und Praxis eines Bildungskonzepts für eine nachhaltige Entwicklung. *Umweltpsychologie* [Ecological psychology], 12(2), 29–42.
- UEAPME – the European Association of Crafts, Small and Medium-Sized Enterprises. (2010). *Crafts and SME priorities for the new R&D and innovation Strategy*. Retrieved from [http://www.ueapme.com/IMG/pdf/100713\\_SME\\_Innovation\\_Competitiveness-Council\\_final.pdf](http://www.ueapme.com/IMG/pdf/100713_SME_Innovation_Competitiveness-Council_final.pdf)
- Welfens, M., Liedtke, C., & Schaefer, I. (2008). Encouraging sustainability: Educational program for civil society. *Journal Internationale Schulbuchforschung*, 30(2), 659–674.
- Westdeutscher Handwerkskammertag (WHKT) [West German Chambers of Crafts and Skilled Trades' Council] (Director/Producer). (2007). *Nachhaltiges Wirtschaften in Handwerksbetrieben* [Operating sustainable in craft enterprises] [CD-ROM]. Düsseldorf: Author.
- Winzier, D. (2009). Berufliche Bildung für eine nachhaltige Entwicklung. Meilensteine, Vereinbarungen und Ergebnisse [Vocational education for sustainable development. Milestones, agreements and results]. In *Nationale Agentur Bildung für Europa beim Bundesinstitut für Berufsbildung (BIBB). Europäische Kompetenzentwicklung zum nachhaltigen Wirtschaften in der Ernährungsbranche* [Education for Europe – National Agency at Federal Institute for Vocational Education and Training (BIBB). European competence development for being able to operate sustainable in the sector of food and nutrition] (pp. 28–32). Bonn: Ministerium für Schule und Weiterbildung des Landes Nordrhein-Westfalen.

### Correspondence:

Anna Bliesner, PhD, Wuppertal Institute for Climate, Environment, Energy. Doeppersberg 19, 42103, Wuppertal, Germany. Tel: +49-(0)202/2492-152. Email: [annabliesner@wuppertalinst.org](mailto:annabliesner@wuppertalinst.org)

## REORIENTING LEADERSHIP STYLES FOR SUSTAINABLE EDUCATION

**Christianah Oluwatoyin Oyetunji**

Limkokwing University of Creative Technology, Botswana

### **Abstract**

*This paper describes the leadership style which can sustain education in Botswana community junior secondary schools (CJSS). The concept was examined based on the policy of education in Botswana, Botswana's vision for 2016 and the current situation in schools. Data was collected by means of a questionnaire and semi-structured interviews from a random sample of community junior secondary school teachers and head-teachers in Botswana. The data suggests that the head-teacher's leadership style affects teachers' and pupils' attitude towards a job and studies and that a participatory leadership style promotes sustainable education in schools. These findings can be useful for education policy makers, school administrators and researchers seeking to promote sustainable improvement in education.*

**Key words:** *leadership style, sustainable education, head-teacher–teacher relationship, school improvement, vision 2016*

### **Introduction**

The progress of a school reflects the head-teacher's leadership (Dubin, 2006) and a continuous improvement in a school is one of the tools for measuring the effectiveness of the head-teacher's leadership (Fullan, 2006). While there is evidence that head-teacher–teacher and teacher–teacher relations affect school improvement, the nature of these relationships has not been given due attention in the area of research (Barnett & McCormick, 2004). In some Botswana secondary schools, improvement in both teachers' and pupils' performance is more an ideal than a reality. Worse still, the situation in some schools is deteriorating as both the teachers and pupils are failing in their responsibilities.

For many decades, the system of education in Botswana was 7+3+2+4; that is, 7 years of primary education (usually referred to as Basic Education), 3 years of junior secondary, 2 years of senior secondary and 4 years of university education. The mid 1980's saw a change in the education system; a 7+2+3+4 structure was introduced to replace the existing system of 7+3+2+4 as a transitional step to 6+3+3+4. In essence, Basic Education was ex-

panded from seven to nine years. Botswana views Basic Education as the foundation of lifelong learning and human development (Molosi, 1993). However, there were major disadvantages with this structure and with the envisaged 6+3+3+4; for instance, the public was highly critical of the quality of Basic Education as many of the junior secondary school leavers were not absorbed in the labour market for lack of adequate communication, numeracy and life skills. Therefore, the 7+3+2+4 system was reintroduced (Ministry of Education, 1993). In the 1990's, the government encouraged community participation in the running of junior secondary schools through the formation of local Board of Governors. The community, however, was not forthcoming in its support for the schools and in 2004 the Ministry of Education decided to take full control of all the community junior secondary schools (CJSS).

In Botswana secondary schools, the head-teacher is responsible for the supervision of staff and for efficient administration of the school. It is the duty of every teacher to exercise the functions of their post in accordance with the standard of professional conduct and to promote the education and welfare of students and the general efficiency of the school. A teacher is required to give the head-teacher their fullest support and loyalty at all times and to obey any lawful order given by the head-teacher or any other teacher to whom he/she has delegated his/her authority (Ministry of Education, 1976). In essence, the head-teacher is expected to work with teachers in a manner that enhances effectiveness in the school. Despite the importance of the relationship between the head-teacher and teachers within a school, only one study has been conducted on this relationship in Botswana. Beleme's (2005) study indicates that teachers believe sympathy and support characterise female head-teachers' leadership styles while their male counterparts were perceived as domineering and forceful.

Botswana policy on education stresses the need for the school to mould and produce reliable and productive citizens (Ministry of Education, 1994). However, Phaswana (1996) and Mungoo (2003) observed that pupils are disinterested and disoriented. In addition, Nduchwa (1998) and Isaiah's (2006) findings suggest that some Botswana CJSS male teachers lack professional ethics as they have unhealthy relationships with pupils. Many secondary school teachers have a negative attitude towards their profession which has caused concern among parents and stakeholders who note absenteeism and negligence of duties among CJSS' teachers (Isaiah, 2006).

Both pupils' and teachers' attitudes are causing a gradual decline in the performance of secondary school pupils (Phaswana, 1996). In addition, a lack of incentives from the government and unsatisfactory conditions of service such as low remuneration, unaddressed teachers' welfare issues and slim chances of progress are contributing to the low self-esteem of Botswana teachers (Isaiah, 2006).

Nevertheless, Botswana is working towards realising an ambitious set of goals by 2016. The country projects that by the year 2016, Botswana should achieve a better quality life, compete at international level in all areas and obtain adequate competent manpower in all fields. In other words, the country is working towards achieving a sustainable society and providing quality education is one of the main strategies to realise that goal (Presidential Task Group, 1997). Thus, a crucial question to consider is what can be done to improve the situation within schools so that Botswana can accomplish this dream in 2016? What

factors are contributing to the teachers' negative attitude in schools? Could one major factor be the head-teachers' lack of effective leadership skill and styles? This research investigates the effect of leadership style on teachers' morale in relation to school improvement. An appropriate head-teacher leadership style may help improve teachers' attitudes and ability to focus on the core functions of schooling and contribute to the education sector's ability to lead the nation in its effort to achieve its goal by 2016.

### *Leadership style*

Various leadership approaches are found within the literature. The empirical research reported in this paper is based on the Hersey and Blanchard's situational approach to leadership which encompasses two key forms of leaders' behaviour: employee-centred/consideration and production-centred/initiating structure. This approach was initiated at the University of Michigan and Ohio State University in 1945 (Hersey & Blanchard, 1988) and various studies sought to identify the behaviours that account for leaders' effectiveness. Findings show that employee-centred or highly-considerate leaders are sensitive to subordinates' feelings and strive to make things pleasant for them. In contrast, production-centred or highly initiating structure leaders emphasise task completion (Schermerhorn, Hunt, & Osborn, 2000).

Leadership style is the behaviour pattern the leader exhibits in the process of influencing the activities of followers as perceived by the followers (Hersey & Blanchard, 1993). This approach stresses that there is no single effective style in all situations and that effective leadership depends on the ability of the leader to determine the readiness level of the subordinates before selecting the appropriate style (Hersey & Blanchard, 1977). The approach is used to determine which one of four leadership styles (telling, selling, participating and delegating) suits the situation (readiness level of subordinates to perform and complete a specific task) to improve performance (Hersey, Blanchard, & Johnson, 2001). Hersey & Blanchard (1993) single out the readiness level of subordinates as the main situational factor over and above other factors which moderate leadership styles and effectiveness.

The *telling* style is characterised by high task and low relationship. It is effective when dealing with subordinates with low readiness level. The subordinates lack both job-related skills and motivation. The manager gives detailed instructions on the task to be performed, provides support and closely supervises subordinates' work. He/she makes decisions without the subordinates' input, thus communication is one sided (Dubrin, 1998). The style is not effective when the manager is seen as an individual who imposes methods on others or who is only concerned with output (Hersey & Blanchard, 1993).

The *selling* style comprises both high task and high relationship behaviour. It is appropriate when leading subordinates who have low to moderate readiness level. The manager gives specific instructions, supervises subordinates' work and provides the necessary support. Two-way communication is encouraged. It is ineffective if subordinates do not believe that the manager is genuine in his/her relationship and perceive him/her to be initiating more jobs than are needed (Hersey & Blanchard, 1993).

The *participating* style is characterised by low task and high relationship behaviour. It is appropriate when leading followers with high-to-moderate readiness level. The manager demonstrates trust in the subordinates and focuses on facilitating goal accomplishment. He/she provides support and builds subordinates' self-esteem by giving them freedom to utilise their initiative while the manager acts as a facilitator in problem-solving and decision-making processes (Prerez, Milstein, Wood, & Jacquez, 1999). It is ineffective when subordinates perceive the manager as an individual who is interested in peace and harmony at the expense of task accomplishment (Hersey & Blanchard, 1993).

The characteristic of the *delegating* style is low task and low relationship behaviour. It is used effectively when leading subordinates with high readiness level. The subordinates are very competent and highly motivated. Therefore, the manager tells them what to do and provides little or no direction. Innovations are encouraged by the manager who demonstrates trust and confidence by supporting the subordinates. This style is ineffective when subordinates feel that the manager is providing little structure (Hersey & Blanchard, 1993). In each case, the choice of leadership style depends on subordinates' readiness level and the use of the appropriate style is pivotal to subordinates' performance.

## **The concept of sustainable education**

Sustainable education means education that is capable of continuing on at a certain level (Bodnar, 2007). The idea of sustainable education emerged because of the need to close the gap between the existing situation and the desired goal (Hearthstone, 2007). This author opines that the difference between the desired goal and the current reality should propel sustainable education and that the process of setting desired standards is the first step towards sustainable education.

## **Methodology**

### *Research questions*

This paper investigates the different leadership styles head-teachers use, their effect on teachers' efficiency and, hence, upon school improvement. The paper addresses three questions: *What different leadership styles are used by head-teachers? What is the effect of head-teachers' leadership styles on teachers' commitment? How can the present situation in Botswana secondary schools be improved?*

### *Participants*

35 schools from the 206 CJSS, spanning both rural and urban areas in Botswana, was selected using stratified technique. Based on Teaching Service Management statistics, 168 schools are in rural areas while 38 schools are in urban areas, which correspond to 82 percent and 18 percent respectively of the total number of schools (206 schools). 29 schools

(82 percent of 35) in rural and six schools (18 percent of 35) in urban areas were randomly selected. There are 6621 teachers in rural areas and 1727 teachers in urban areas: 79 percent and 21 percent respectively of the whole population of 8348 teachers in community junior secondary schools in Botswana. 474 teachers (79 percent of 600) and 126 teachers (21 percent of 600) in rural and urban areas respectively were randomly selected making a total of 600 teachers. A total of 20 head-teachers in both rural and urban areas also participated in the study.

### *Research instrument*

Data was collected through the use of the Leadership Effectiveness Adaptability Description (LEAD-Other) questionnaire which was adapted for the purpose of this study. The LEAD instruments are specifically designed to measure leadership behaviour and have been proven effective for measuring the leadership style of managers (Hersey & Blanchard 1993). Hersey & Blanchard (1977) assert that the LEAD-Other instrument is appropriate for measuring leadership style because it is based on the followers' perceptions of the leader's behaviour. The LEAD-Self measures the leaders' perception of their behaviour rather than their style. Thus, the LEAD-Other instrument was used. However, it would be useful to compare leaders' and followers' perceptions of the leader's style so as to identify the dissimilarity between self-perception and others' perception (Hersey & Blanchard, 1988). To capture this discrepancy, a semi-structured interview guide was used to gather information from 20 randomly selected head-teachers regarding how they perceived their leadership styles. The interview guide questions were coined from the LEAD-Self questionnaire.

The LEAD-Other instrument consists of 12 situations which are divided into four groups. Each group describes a different readiness level of followers. The following are examples of situations from each of the groups: (a) The staff are not responding lately to this leader's friendly conversation and obvious concern for their welfare. Their performance is declining rapidly (Low readiness level), (b) the observable performance of the staff is increasing. The leader has been making sure that all members are aware of their responsibilities and expected standards of performance (Low-to-moderate readiness), (c) The staff is struggling to solve a problem. The leader has normally left them alone. Staff performance and interpersonal relations have been good (Moderate-to-high readiness) and (d) The leader is considering a change. The staff has a fine record of accomplishment. They respect the need for change (high readiness level). Four alternative actions were provided for each situation and arranged in order of their effectiveness for each situation.

## **Results**

Table 1 provides the information about the leadership styles of all the participating schools.

Table 1. A summary of the LEAD-Other responses

School	Telling	Selling	Participating	Delegating
1	42	57	27	6
2	25	53	36	18
3	59	78	69	22
4	20	57	43	0
5	51	107	63	7
6	46	64	63	7
7	64	97	57	46
8	75	88	40	13
9	27	18	19	32
10	56	122	115	7
11	18	24	34	8
12	62	66	85	63
13	27	19	26	12
14	48	79	60	5
15	19	67	59	23
16	21	74	65	8
17	37	72	30	5
18	29	21	41	29
19	54	92	57	37
20	33	35	58	18
21	27	69	74	10
22	46	48	52	22
23	48	85	51	8
24	26	62	55	13
25	62	70	31	5
26	66	87	47	16
27	21	41	61	21
28	35	77	67	25
29	49	83	54	18
30	16	30	36	14
31	29	21	41	29
32	21	49	46	4
33	101	86	30	23
34	20	81	67	0
35	70	89	58	23
Total	1450	2268	1817	597
Total (%)	23.65	36.97	29.63	9.74

The highest scores of 65.7% of the head-teachers are located in a quadrant two which represents a high relationship and high task leadership behaviour. This implies that the majority of the head-teachers that participated in the study used the *selling* style in their relationship with teachers.

The highest scores of nine schools (25.7%) are situated in quadrant three which is characterised by high relationship and low task orientation. These head-teachers used the *participative* leadership style. The highest scores of two schools are found in quadrant one which represents a high task and low relationship orientation. Thus, the dominant style of 5.7% of the head-teachers under study was *telling*. The highest score of one school falls in

quadrant four which represents a low relationship and low task orientation. That is, 2.8% of the head-teachers used the *delegating* style of leadership in running their schools.

### *Interview data*

The majority of the head-teachers reported that they completely depend on the support of other members of staff for the successful implementation of any change and running of school in general. Therefore, they consult and encourage active participation of other members. This suggests that consultative and participative styles of leadership are exercised by most head-teachers when dealing with issues that concern the school.

The comparison of head-teachers behaviour, as perceived by their teachers in Table 1, and how the head-teachers thought they behaved as gathered from their responses to the interview questions, indicate that there is a difference between the teachers' views and the head-teachers' opinions: what the teachers said did not correspond with the head-teachers' perceptions about their style of leadership. Based on the perceptions of teachers, the majority (65.7% in LEAD-Other) of the head-teachers used the selling style whereas the head-teachers claimed to use the consultative or participative.

## **Discussion**

As indicated above, 65.7% of the head-teachers used the *selling* leadership style. This style stresses a high task and high relationship orientation which suggests that head-teachers may assume that teachers have not yet reached a readiness level at which less emphasis can be placed on task. The need for high emphasis on relationships suggests that the head-teachers are not satisfied with staff members who will just perform tasks but are probably interested in having staff members who are mature, conscientious, approachable and devoted, teachers who take pleasure in their job (Hoy & Sabo, 1998). As a result, the head-teachers look for opportunities to reinforce appropriate behaviour and encourage a two-way communication (Hersey & Blanchard, 1993). This *selling* style should have an impact on the atmosphere that prevails at these schools. The teachers who realise that their head-teachers are not only concerned about the accomplishment of tasks but are equally concerned about their personal welfare would, most likely, endeavour to satisfy their head-teachers by willingly working hard to meet their head-teachers' expectations. This supposes, however, that everybody stands to gain from this kind of relationship.

Nine (25.7%) of the head-teachers used the *participating* style of leadership. This style is high relationship and low task oriented because head-teachers may assume that the teachers are at or above average level of readiness, that they are capable even though they are not performing. The assumption is that they lack motivation that can bring them to the level of effectiveness of which they are capable. One of the things that could contribute to the teachers' lack of motivation is a situation where head-teachers attempt to influence teachers to like them at the expense of the work to be done. If teachers work according to the level of their readiness, the anticipated atmosphere will be one of trust in which teachers express a willingness to do the work for which they are equipped. On the other hand, if the head-

teachers try to buy teachers' affection at the expense of task accomplishment, the atmosphere is likely to be friendly, but the work will suffer (Hersey & Blanchard, 1993).

Only one (2.8%) of the head-teachers used the *delegating* style of leadership. The atmosphere in this school should be characterised by trust, self-esteem and personal worthiness. However, if the head-teacher delegates when the teachers are at low level of readiness, which Hersey & Blanchard (1977) describe as abdication where the head-teachers abandon their responsibilities, the expected atmosphere will be one of lawlessness and unproductivity. For instance, if the task of organising a sport day is given to a group of teachers which neither has relevant experience nor interest in sports, positive results are likely only if the head-teacher provides direction, support and supervises closely. Otherwise, the teachers may be confused, may do what they like with their time and in the midst of the confusion, some of them may become frustrated, lazy or apathetic.

Two (5.7%) of the head-teachers used the *telling* style of leadership. This indicates that the teachers are no more performing at their readiness level, and, therefore, their performance is declining. The use of *telling* style of leadership with the set of teachers in this study may lead to a decline in teachers' performance. This is because the teachers have the required skills and knowledge to perform effectively. The teachers were probably not performing because the head-teachers were telling them what they already knew. If the teachers were given the opportunity to use their acquired skills and given necessary support by their head-teachers, the unproductive atmosphere would be likely to change for the better. For instance, most professionally trained teachers may not enjoy listening to detailed teaching procedures in a staff development workshop; some teachers may see it as a waste of their precious time, some may think that the head-teacher does not have confidence in them and some may think the head-teacher is too rigid wanting things done according to his/her specifications. All these perceptions may affect the teachers' attitudes towards their job. On the one hand, if trained teachers are given free hand to use their knowledge, skills and initiatives to manage teaching in their classrooms while the head-teacher provides tips and facilities to facilitate their work, their performance should be enhanced.

In addition, the discrepancy in the head-teachers' and teachers' perceptions of the behaviours of head-teachers may have contributed to teachers' low morale, lack of motivation and commitment and the prevailing situation in many schools. The teachers' lack of response to what the head-teachers believed to be a participative/consultative style underscores the notion that leadership style is determined by the followers' perceptions of their leader's behaviour. In attempting to identify leadership styles, how the head-teachers perceive their behaviour is unimportant because leadership style refers not to how leaders think they behave but to how their followers perceive that behaviour. How teachers perceive their head-teachers matters because it is those perceptions which determine how they respond to their head-teachers' leadership behaviours.

According to the findings of the paper, the majority of the head-teachers used the *selling* style of leadership. The Teaching Service Management statistics show that more than 95% of teachers in community junior secondary schools are well qualified. It follows that the *selling* style of leadership used by most head-teachers may not be suitable since the teachers studied most likely possessed the necessary skills to function effectively at that level. Most trained teachers are expected to have necessary job-related skills, although

some may have the skills but not use them effectively. For the *selling* style to be effective, the readiness level of the followers should be low to moderate. That is, they should lack of necessary skills but be willing (Hersey & Blanchard, 1993).

As mentioned above, many of the head-teachers used the *selling* style of leadership and a substantial number used this style inappropriately. Because the teachers who participated in this research were trained to be professional and work in collaboration with their head-teachers, the *participating* rather than the *selling* style of leadership may be more appropriate in dealing with them. To this end, the unprofessional behaviour of teachers in most of the schools could be linked to the inappropriate use of the *selling* style of leadership by many head-teachers.

Improvement in the relevance and quality of education is at the core of Botswana vision 2016. Therefore, the head-teachers in Botswana CJSS have a significant role to play in order for the country to realise this vision; they need to adopt the leadership style that will help both teachers and pupils improve their behaviour and performance and sustain that improvement. When the head-teacher involves teachers, pupils and other stakeholders in the running of the school, it should bring about improvement. When teachers realise that their contributions are sought and valued, it will boost up their self-esteem, give them a sense of belonging and cause them to live up to their responsibilities as professional teachers and increase their commitment to their jobs and pupils.

Teachers' commitment will most likely influence pupils' attitude towards school and their studies. They are likely to work hard to meet their teachers' expectations. As the country strives to become a sustainable society come 2016, constant improvement of teachers and pupils' behaviour and performance in school indicates a movement towards sustainable education, a path the country of Botswana needs to follow to reach her destination. The situation in schools reflects the effectiveness of the head-teacher's leadership style which is crucial to achieving the country's desired goals, not only in the education sector but in other sectors of the government.

## Suggestions

In the light of these findings the Ministry of Education should organise extensive in-service development programmes and/or encourage the head-teachers to go for short courses in educational management with specific emphasis on leadership skills and appropriate use of styles so that schools are run in a manner that will motivate teachers to be more productive and pupils to be more achievement oriented. Because education is the pillar of the Vision 2016, teachers' efficiency cannot be compromised if that vision is to be realised. Therefore, it is imperative for the government to attend to some of the teachers' requests to encourage them to take their rightful positions in the nation's journey to a better Botswana in 2016.

Head-teachers should embrace a participative, collaborative style and involve teachers in the decision-making and execution of plans; teachers should handle their job concerns with maturity, use proper channels and exercise patience while waiting for the government to address issues. Teachers must share in the nation's vision and their full participation in

planning and accomplishing the plans towards Vision 2016 is critical. Thus, teachers are encouraged to be committed, faithful and to see to the success of the pupils they teach.

## Conclusion

The head-teachers of the schools studied used different styles of leadership namely: *telling*, *selling*, *participating* and *delegating*. The majority of the head-teachers (66%) used the *selling* style of leadership in their relationship with teachers, but they seemed to use it inappropriately as their teachers did not respond positively to this style. The *selling* style of leadership is characterised by directive head-teacher behaviour which does not appear to be suitable for professional teachers; the calibre of the teachers who participated in this study. Thus, the inappropriate use of the *selling* style of leadership is a major factor contributing to teachers' unenthusiastic behaviour. The need for the head-teachers to interact with teachers appropriately cannot be overemphasised. The head-teachers need to adopt the *participating* leadership style which promotes inclusion of teachers in decision-making, teachers' development, collaboration and power sharing, thus enhancing collegiality and positive attitude to school and work. They need to provide the kind of leadership that will spur teachers to work with enthusiasm, rekindle pupils' interest in schooling so that they focus on achieving their educational goals and increase the possibility of realising the country's vision for the year 2016. Now is the time for all stakeholders to embrace and actively practise sustainability in the education system so that the new picture of Botswana can come to be as envisaged.

## References:

- Barnett, K., & McCormick, J. (2004). Leadership and individual principal-teacher relationships in schools. *Educational Administration Quarterly*, 40(3), 406–434. DOI: 10.1177/0013161X03261742.
- Beleme, O. (2005). *Teachers' perceptions about the performance of a female head of school: A case of Molepolole community junior secondary schools*. Unpublished Master's dissertation, University of Botswana, Gaborone, Botswana.
- Bodnar, E. (2007). *Sustainable education*. Retrieved from <http://www.blog.ethanbodnar.com/2007/06/22/sustainable-education>
- Dubin, A. E. (2006). *Conversations with principals: Issues values and politics*. London, UK: Sage Publications.
- Dubrin, A. J. (1998). *Leadership: Research, findings, practice and skills* (2nd ed.). Boston, USA: Houghton Mifflin Company.
- Fullan, M. (2006). *Turnaround leadership*. San Francisco, USA: Jossey-Bass.
- Hearthstone, J. (2007). *Ecologically and socially sustainable education: Creating a sustainable world*. Retrieved from <http://www.modelearth.org/ecosocsused.html>
- Hersey, P., & Blanchard, K. H. (1977). *Management of organizational behaviour: Utilizing human resources* (3rd ed.). New Jersey, USA: Prentice Hall.

- Hersey, P., & Blanchard, K. H. (1988). *Management of organisational behaviour: Utilizing: Human resources* (5th ed.). New Jersey, USA: Prentice Hall.
- Hersey, P., & Blanchard, K. H. (1993). *Management of organizational behavior: Utilizing human resources* (6th ed.). New Jersey, USA: Prentice Hall.
- Hersey, P., Blanchard, K. H., & Johnson, D. E. (2001). *Management of organizational behavior: Leading human resources* (8th ed.). New Jersey, USA: Prentice-Hall.
- Hoy, W. K., & Sabo, D. J. (1998). *Quality middle school: Open and healthy*. California, USA: Corwin Press Inc.
- Isaiah, M. N. (2006). *Factors influencing teachers' job satisfaction in CJSS in south central region of Botswana*. Unpublished doctoral dissertation, University of Botswana, Gaborone, Botswana.
- Ministry of Education. (1976). *Code of regulations governing the conditions of service of teachers*. Gaborone: Botswana Government Printer.
- Ministry of Education. (1993). *Report of the National Commission on Education*. Gaborone: Botswana Government Printer.
- Ministry of Education. (1994). *Revised national policy on education*. Gaborone: Botswana Government Printer.
- Molosi, P. O. (1993). Current government policy on education and analysis of the implementation of the White Paper No 1 of 1977. In S. Seisa & F. Youngman (Eds.), *Education for all in Botswana* (pp. 41–54). Gaborone: Botswana Government Printer.
- Mungoo, J. K. (2003). *Nature and causes of student indiscipline in secondary schools*. Unpublished Master's dissertation, University of Botswana, Gaborone, Botswana.
- Ndutchwa, B. (1998). *Problems of teenage pregnancy in community junior secondary schools: A case study of Ipeleng CJSS*. Unpublished Master's dissertation, University of Botswana, Gaborone, Botswana.
- Phaswana, K. (1996). School effectiveness. In R. Charakupa, J. Odiharo & M. Rathedi (Eds.), *Botswana's challenge for quality education into the 21st century* (pp. 135–141). Gaborone: Botswana Ministry of Education.
- Prerez, A. V., Milstein, M. M., Wood, C. J., & Jacquez, D. (1999). *How to turn a school around: What principals can do*. California, USA: Corwin Press Inc. Press.
- Presidential Task Group. (1997). *Vision 2016: Towards prosperity for all*. Gaborone: Botswana Government Printer.
- Schermerhorn, J. R., Hunt, J. G., & Osborn, R. N. (2000). *Organisational behaviour* (7th ed.). New York, USA: John Wiley & Sons.

### Correspondence:

Dr Christianah Oluwatoyin Oyetunji, Faculty of Communication, Media and Broadcasting, Limkokwing University of Creative Technology, P.O. Box 70277, UB Post Office, Gaborone, Botswana. Email: ctoyetunji@yahoo.co.uk

## COLLABORATION, MENTORING AND CO-TEACHING IN TEACHER EDUCATION

**Gertrude Tinker Sachs**

Georgia State University, the United States of America

**Terry Fisher**

Georgia State University, the United States of America

**Joanna Cannon**

University of British Columbia, Canada

### **Abstract**

*Collaboration at the university level is a fundamental element needed to enhance teaching (Cochran-Smith & Fries, 2005) and reflection is a critical component of teacher education (Dewey, 1933, 1938). A case study is presented of one senior university faculty member's experiences co-teaching with two doctoral students seeking to understand the impact of shared decision-making and authentic collaboration on individuals entering the academy. An analysis of the authors' shared experiences indicated that, through this mentoring, collaborative and mutually beneficial relationships were built. An analysis of the authors' experiences also indicated that these collaborative relationships were built upon several key factors, specifically (a) a strong sense of individual accountability and professionalism; (b) the mutual creation and demonstration of respect; (c) affirmation and overt participation in reciprocal growth and development; (d) attention to issues of power and abeyance. The findings of the study highlight the need for further exploration into the role of mentorship of junior faculty and the efficacy of co-teaching processes in the development of professional identities of junior faculty entering the academy.*

**Key words:** *co-teaching in teacher education, mentoring in teacher education, collaborative teaching in teacher education, mentoring doctoral students in the academy*

### **Introduction**

In this standards-driven era of education, it is more critical than it ever has been for educators at all levels to resist individualism and isolationism and work together to create collaborative and supportive communities of practice in institutions of learning (Brisk, 2008).

Mentoring and collaborative teaching are vital to the success of learners in educational settings where differences necessarily exist in educators' expertise, knowledge, experience, and cultural resources and adaptability. Faculties that work to cultivate a collaborative spirit and to mentor each other are more likely to be successful in promoting student learning and job satisfaction (Cobb, Fox, Many, Mathews, McGrail, Taylor, Sachs, Wallace, & Wang, 2006a; Cobb, Fox, Many, Mathews, McGrail, Taylor, Sachs, Wallace, & Wang, 2006b). This case study chronicles our ventures co-teaching teacher education courses in an institution of higher education. Through this analysis of our experiences, we critique our shared efforts to co-construct curriculum and co-teach, specifically addressing some of the challenges of collaborative teaching. It has been said that we in teacher education do not report on our own practices (for instance, Rossiter, 1993; Anderson & Herr, 1999; Zeichner, 2005a; Brisk, 2008). This case study is an attempt to examine and articulate what we have done through critically reflecting upon our processes and understandings. The case study method which we have employed in this work is particularly suitable for sustainability research as it allows us to look at "real-world phenomena which have both physical and social aspects" and it helps us to understand "...ideas and initiatives that are expressed within a context or milieu which has multiple influences, actions and potential outcomes" (Evans, 2011, p. 57).

### **The need for collaboration in the academy**

Cochran-Smith and Fries (2005) emphasised the call of the American Council on Education's President's Task Force on Teacher Education for college and university presidents to strengthen teacher education through "increased collaboration between faculty members" (p. 91). Collaboration, however, comes in many forms (Nunan, 1992) and in this paper we will address two forms of collaboration namely the co-teaching and mentoring models. Both models can coexist in any educational community and in this paper we speak specifically of the teacher education community with applications to the elementary through high school settings, particularly for educators who work with English language learners.

We three writers come from diverse backgrounds and are at various points in our career as teacher educator professors. The first author is an associate professor of African descent and the second and third authors are of European descent and were at the time of our classes, doctoral students in different programmes in the college of education at an urban research institution in the south-eastern United States. In the tradition of universities, most professors are used to working in isolation as they select their textbooks, develop their curricula and teach their courses. Collaboration between instructors, in the public schools and the academy alike, requires time to engage in frequent discussions in order to prepare curriculum and instructional engagements and time to engage in ongoing self-evaluation as well as students' evaluation. Collaboration also requires that both parties demonstrate patience as they strive to include their colleagues within the teaching act and repertoire of activities, respect and affirm the other's knowledge and expertise and attend to equitable roles in the shaping of the class and impacting students' learning. In institutions where advancement is based primarily on the number of publications that one garners per year, much

time is needed for conducting research and preparing manuscripts while time spent on other endeavours is not accorded the same status in annual faculty evaluations. This implicit statement of institutional priorities begs the question of how we can build up our workplaces and live up to our institution's mission if we rarely engage in collaborative activities and fail to mentor less-experienced colleagues and faculty at all stages of their professional development (Cobb et al., 2006a). The tensions of needing isolated and focused time to engage in the type of scholarly writing required for tenure and promotion creates significant disquietude in faculty who simultaneously value collaboration and recognise the significant investment of time required for true collaboration. In spite of these challenges with narrowly articulated priorities in institutions of higher education, we believe that a workplace cannot thrive on isolationism and competition but can become truly innovative and generative through the collaborative efforts of colleagues who work together by mentoring and supporting each other on a regular basis to achieve mutual satisfaction as well as group and individual success (Sachs, Clarke, Kinuthia, McGrail, & Verma, 2011). In talking about collaboration in writing groups, Vandrick (2009) puts it this way:

*Some of the benefits of collaboration are the same benefits derived from other types of groups: exchange of information and ideas, drawing on each member's individual area of expertise, giving each other feedback on ideas and drafts, providing a regular time to meet and move forward on projects and more (p. 137).*

Our collaborative efforts are steeped in our collective endearments to the common essence of our humanity and womanhood. Our humanism encourages us to live purposeful and meaningful lives through valuing and respecting our common humanity (Davies, 2008; Cave, 2009). Maddi and Costa (1972) expand on our common humanity to assert, "...humanism takes a very optimistic, laudatory view of man (sic)" (p. 4) and recognises the uniqueness and individuality of humankind that must be examined not in isolation but "by putting all the parts together and employing a knowledge of the characteristics of whole" (p. 4). When humanism is translated into our classroom practice, this means that we strive to recognise the individuality of our teaching and learning styles as well as the centrality of meeting pupils' interest in our subject area. We believe, as Bernard and Huckins (1974) state, that "teachers must be good examples as learners and as persons. They teach what they *are* quite as much as what they *do* and *say* (p. 7, original italics). Simultaneously, our dispositions draw us to "building structures of inclusiveness and positive interrelationships" while relying on "dialogue to establish and negotiate relationships" (Phillips, 2006, p. XXV).

### **Co-teaching and mentoring**

In our work together, we have co-taught several different classes in our English to Speakers of Other Languages (ESOL) master and doctoral programmes. Co-teaching in the teacher education academy provides an excellent opportunity to demonstrate how collaborative teaching strategies can be utilised for ESOL teacher candidates and practising teachers alike

that may have opportunities to adopt these practices when they commence teaching (Doheny & Sachs, 2007). Pre-service teachers also learn by an apprenticeship of observation and engagement within the teacher education classroom (Lortie, 1975) and the work of two faculty members collaborating in their preparation/development programme can provide a space to observe and consider the possibilities and potentialities of co-teaching.

Co-teaching has come to be defined as two professionals teaching together with a joint delivery of instruction, a heterogeneous group of students and shared responsibility for planning, instruction and evaluation (Friend & Cook, 2007; Friend, Cook, Harley-Chamberlain, & Shamberger, 2010). Co-teaching and collaborative teaching are often used interchangeably. In his 1992 text on collaborative language learning and teaching, Nunan (1992) also uses the term “collaborative” interchangeably with “team approaches to teaching”. He cites the work of Armstrong (1977) to clarify the nature of team teaching which “permits members to take advantage of individual teacher strengths in planning for instruction and in working with learners” (p. 6).

Friend and Cook (2007) identify six models of co-teaching. These models include three large group models: One Teach/One Observe, One Teach/One Assist and Team Teaching and three small group models: Station Teaching, Parallel Teaching and Alternative Teaching. All three large group models can be used in the general education classroom or higher education classroom with two teachers and up to thirty students, but in the small group models the class is divided up between the two teachers.

In the first model *One Teach/One Observe*, one teacher manages the overall class discipline and instruction and the other teacher systematically observes one student, small groups, or the whole class to gain important information on students. In the second model “One Teach/One Assist” there is again, one primary teacher that manages the overall class discipline and instruction while the other teacher circulates throughout the room, redirects students’ attention and helps individual students. The third model, “Team-teaching”, as a mutual teaching engagement, involves two teachers having joint responsibilities for teaching and assessing all content to all students (Friend & Cook, 2007).

In the small group variations of co-teaching, there are: (1) *Station Teaching* which utilises stations with different aspects of the lesson for students to circulate to and from; (2) *Parallel Teaching* which involves dividing the class into two heterogeneous groups and both teachers teaching the same content at the same time; (3) *Alternative Teaching* which is when one teacher manages a larger instructional group while the other manages a smaller group of heterogeneous students (Friend & Cook, 1997). However it is defined, co-teaching has a range of benefits which includes the infrequently discussed opportunity to mentor less experienced or new faculty into the community of practice in the academy. Friend, Cook, Harley-Chamberlain and Shamberger (2010) believe that despite the benefits, the potential for further research and the applications of co-teaching in education remain virtually unexplored.

Mertz (2004) in her article *What’s a mentor anyway* uses the phrase “bewildering array of relationships and roles” (p. 541) to refer to the many definitions and terms ascribed to mentoring in the literature and likens the conception of it to the biblical “Tower of Babel.” Mertz (2004) suggests that mentoring is essentially conceptualised as a supportive work relationship that is hierarchically arranged based on primary intent and level of in-

volvement which encompasses a broad range, variety and context for mentoring. Mertz distinguishes between levels of involvement on the part of a mentor distinguished by the focus and intent of the relationship and the levels of investment and involvement on the part of the mentor and trust on the part of the mentee. She posits that the level of mentorships are indicated by six levels of supportive collaborations and are as follows: (1) the role model, peer pal or supporter, (2) the teacher or coach, (3) the counsellor, advisor, or guide, (4) the sponsor or benefactor, (5) the patron or protector and (6) the mentor. Mertz stated that levels four through six particularly include support and brokering for mentees career advancement. Mertz recognised that any level of involvement in mentoring another could be marked by intensity and could be highly complex and require significant emotional and personal cost. Mertz explained that the highest and “ultimate” expressions of mentoring are marked by mutual trust. While Mertz’s conceptualisation of mentoring can be useful, it does not begin to capture the complexity of relationships as they develop and shift over time. Contrastingly, Van Dyne (1996) provides a rather straightforward explanation and views mentoring as “helping an individual adjust to the organisation’s expectations” (p. 160) explaining that “the best mentors develop their students and socialise them into the academic profession” (p. 160).

Smith, Basmadjian, Kirell and Koziol (2003) contend that just as pre-service and in-service teachers need mentoring, doctoral students need training to become teacher educators because the “lack of attention to the development of... doctoral students for their roles as teacher educators is particularly problematic when we recognise the substantial role these students play in teacher preparation” (p. 9). The varying degrees, types and contexts of mentoring new and experienced professors is an important aspect of our work in teacher education (Mullen & Kealy, 2000; Cobb, et al., 2006a; 2006b) and this important work must be recognised by those who are in positions of authority within the academy. Even though simple definitions of mentoring are elusive, attention needs to be given to the mentoring of future teacher education professors. Explorations inquiring into the particularities and potentialities of those relationships need to occur in order to illuminate the reflections of those becoming teacher educators (Aker, 1997; Mullen & Kealy, 2000; Reybold, 2003) and to gain an understanding of the specific issues and challenges that novice teacher educators face (Murray & Male, 2005).

## **Methodology**

Reflecting has a long established tradition within the teaching profession (Dewey, 1933, 1938; Munby & Russell, 1993; Halton & Smith, 1995). Like many practicum requirements for pre-service educators, teacher educators can also benefit from reflecting on our work (Tabachnich & Zeichner, 1991; Dinkelman, 2003) because these reflections can produce new processes and deeper understandings of our practices (Cochran-Smith, 2003; Loughran & Berry, 2005; Zeichner, 2005b). In keeping with sustainability research, we draw on case study and self-study methodologies to report our reflections. Simultaneously, we implicitly employ constructivist principles which promote shared and collaborative exploration of issues with participants and generate co-constructed data and lead to an empowerment of all

research participants. Reflecting on what we have done promotes sustainable values in the academy and building relationships through collaboration is one way that that we can fulfil our moral imperative to improve schools and the academy (Dinkelman, 2003; Fullan, 2011). In the next section we provide a reflective case study of three educators' experiences collaborating longitudinally in teacher development courses over the course of three years. This study focuses specifically on reflections on co-teaching in the teacher education academy.

## **Participants and setting**

The three participants were engaged in different co-teaching experiences from the summer of 2006 to the fall of 2008. All the courses that were taught were for ESOL pre-service and in-service teachers in our master's and doctoral programmes. These courses were: Applied Linguistics, Immersion in the Classroom, TESOL Methods and Approaches and ESOL Practicum in the homes of refugee families (Sachs, Hendley, Klosterman, Muga, Roberson, & Soons, 2008). The first author, Author 1, is an associate professor of ESOL, Language and Literacy and was the instructor of record for the four courses. The second author, Author 2, was a doctoral fellow in the area of ESOL, Language and Literacy at the time the courses were co-taught. Author 2 was involved in co-teaching three of the four courses and due to her field of interest had a more extensive engagement with the first author. The third author, Author3, was a clinical professor and doctoral student who specialised in Special Education with a concentration in Deaf education when she co-taught the course Immersion in the Classroom. Author 3 and Author 1 utilised several co-teaching models, including One Teach/One Observe, One Teach/One Assist, Team Teaching and Station Teaching (Friend & Cook, 2007). All the courses were taught at a large urban research university in the southeast. Based on our experiences and our reading of the literature, we believe that while mentoring exists in many forms and is more commonplace, co-teaching is not as common in most colleges of education (McKenzie, 2009).

## **Case study narratives: Critical reflections on co-teaching in the academy**

**Author 2's reflections.** As a doctoral fellow with an emphasis on teacher education, I have worked collaboratively with Author 1 in a variety of courses and contexts. During my first semester in the programme, I worked with Author 1 as her teaching assistant in Applied Linguistics as I was preparing to teach on my own the following semester. It was my first time really teaching adults, and I was rather unfamiliar with the material. Though we spoke about the planning of the course and the aspects of applied linguistics that we would address, I did not have the expertise, the background, or the confidence to make any substantive suggestions. While no stranger to collaborative work in teaching, I questioned my ability to make meaningful suggestions and contribute to the learning of adults in a subject in which I initially felt unprepared. As a former student in the ESOL programme I had taken the course and was familiar with the content, however, I did not feel as if I could compe-

tently teach it to someone else. It is also important to note that I was literally days out of the first grade classroom, and I was quite intimidated by my new role. Additionally, this course was my first contact with Author 1, and, since I was hired for this role for three years, I was eager to make a good impression on my new colleague.

We divided the readings, the content and the presentation of material based on my wishes and what I felt most comfortable with. One of our texts was significantly rooted in classroom practice while the other was more theoretical. The vast majority of the content I volunteered for was centred on classroom practice and pedagogy as it allowed me to build upon what I did know well and to share insights from my own experience teaching in elementary through high schools contexts. Author 1 modelled her processes and practices and gave me latitude to present the material as I chose. After a few weeks of collaborative teaching, she encouraged me to plan an entire class session. In truth, however, my knowledge base was limited. While I had the practical classroom application and the connections to students and their learning, I did not know all of the theories and therefore poured over the texts mere days before students were learning the same material. My limited knowledge of the content forced me to rely heavily on summary of the material rather than synthesis and I did not feel like the teacher educator I wanted to be. At the end of each class period, Author 1 would sit with me and we would debrief, how things went, what we would do next, how we might change things. Gradually, I began to find my voice and realise that though I didn't know all of the professional discourse, once I appropriated the linguistic terms, I was able to make strong theory to practice connections from my many years working with pupils in a range of contexts. Author 1 provided me with scaffolds and support as I learned what it meant to teach people my age and older, which was in many ways a challenge. It is also important to recognise that I was met with some level of resistance by the students. My obvious inexperience in higher education and my age was a point of contention for some. Author 1 consistently modelled respect for me and my contributions in front of the class, enabling me to navigate the often murky waters of higher education for beginning teacher educators. Notably, this was the first time Author 1 taught this course in this setting so we both were learning as we went. We sat together and compared grading. We collaborated on nearly everything, and we discussed our questions, concerns and ideas. When I suggested changes to the syllabus so we could make some variations in the order of the readings (I had no idea then what a significant issue changes in the syllabus might be in students' evaluations) she agreed to be flexible and work with my ideas. I believe that this gradual release of responsibility, the feedback, suggestions, scaffolding, and guidance I was provided gave me both the skill and the reflexive abilities to begin teaching independently. This time, while extremely challenging, was a necessary and empowering part of my transition from a teacher of pupils to teacher of teachers.

Two years later, after working closely with Author 1 in a variety of settings, we sat around her kitchen table, covered with books, articles, readings and notes we had both brought to our day long planning retreat. We had a white board and two computers going, taking notes on our ideas and trying to re-conceptualise our programme. During the past two years, I had completed my coursework for my Ph.D., taught 14 courses at our university and coordinated our master's programme for a year. At this point, frankly, I considered Author 1 a dear friend and a trusted mentor. I knew that she believed in me, valued my

ideas and opinions and would also challenge me when I was not authentically representing what she knew I was trying to be and become. In short, our relationship had evolved significantly through two years of close collaboration. In our years advising students, teaching coursework, supervising pre-service teachers and soliciting feedback on our programme from our teacher candidates and their mentor teachers, both Author 1 and I had gained a clear vision of ways we wanted to reshape our programme. We brainstormed, thinking about the things we most wanted our graduates to know and be able to do, we envisioned ways to reconstruct the practicum experiences to align more coherently and comprehensively with our coursework and our programme philosophy. We worked with the big picture in mind, weaving theories, methods and pedagogies together. We completely reconceptualised much of the work that we had done. We left with notes and ideas, lists and assignment descriptions, invigorated and excited. We decided to divide and conquer, both working on the actual syllabus construction for one of the courses incorporating the ideas from our discussions.

In our second round of collaborative teaching, two full years after our first venture into collaboration, Author 1 and I shared the same context and professional discourse, knew the same students and had developed a large repertoire of common experiences. Through our intense and long-term partnership, we had become very different in our collaboration than when we began. There was less “turn taking” and tag team teaching, where she taught one thing, then I taught another. Instead we were both able to chime in, to contribute and to add different perspectives, ideas or understandings. We became much more responsive, both to the teaching of the other and to the needs of our students. We checked in frequently, quickly, and often non-verbally, taking cues from the other and codetermining our next steps. This was much more of a dance, weaving back and forth, anticipating and augmenting the moves of the other. This type of synergy enabled each of us to contribute and to creatively problem solve both the complexities of our content and the intricacies of our collaborative pedagogy with a focus on the development of our future teachers. As a collaborative team, we had come a long way. Through the opportunities and support I have been afforded, I have developed an identity as a teacher educator. Collaboration provided each of us, novice and experienced professional educators, an opportunity to re-envision, re-imagine and re-conceptualise our teaching and our own learning.

**Author 1's reflections.** The first time I worked with Author 2 was in a very intense summer course. We taught in an extremely large classroom with a console which included internet access, a video projector and DVD/CD equipment. We had two huge screens and a small chalkboard. There was enough equipment and space to be genuine teacher educators, modelling excellent teaching practices to our mixed group of pre-service and in-service teachers by using old and new teaching resources. We had a large class of 25 students whom I considered to be very bright and eager to learn. Because of the volume of content to be covered in a very short period of time, we set up cooperative learning groups with expert groups and home-based groups. While I was familiar with the content of applied linguistics, I had never taught the course and so this was also the first time for me to develop a new curriculum or syllabus in the vast field of Applied Linguistics. I welcomed Author 2 to co-teach this course because she could draw on her local teaching experience to balance my theoretical perspectives and lack of preschool through 12th grade classroom

teaching experiences rooted in the system of education of the United States. I appreciated having her to balance the course content and to make the theories applicable to real teaching contexts in the U.S. Author 2 was willing and eager to learn and was an enthusiastic teacher and co-teacher. We shared a great deal of laughter as we struggled through the course content and found our footing for building a collaborative relationship.

The second time we co-taught together we did not have to go through the process of getting to know one another. Due to our extended working relationship, we were more attuned to each other's ways of being. We knew each other's teaching orientations and philosophies and because they were so closely aligned, we could speak for each other. This knowledge of each other based on mutual respect for each other's assets, created the symphony effect, so that in teaching we were "in sync" in our classroom discourse. Our students knew this by our whispered consultations during teaching and by our eye contact to one another when we felt the other might want to "jump in". Everything was shared and neither of us felt put upon because one was doing more than the other. Again, mutual respect, friendship and professionalism were the foundations for the effectiveness of our discourse.

As the older, senior and Black international professor in our dyad, I could not help but wonder sometimes if the majority of my students who were Caucasian would have preferred working with a younger Caucasian American instructor with a similar background as they. Being the senior professor I could have easily quelled these mental meanderings by asserting my authority but there was no need to as Author 2 was sensitive enough to our classroom culture and took action to reduce any tendency for the majority students to prefer coming to her for advice or clarification. We both openly dissuaded students from playing one professor against the other or openly showing preference or deference to one of us over the other instructor, instead we helped our students understand that we were a team.

**Author 3's reflections.** As a clinical instructor and doctoral student I co-taught a course on collaboration and co-teaching with Author 1 in our department. My area is special education, while Author 1 has a specialty in working with ESOL teachers. To develop the course material and syllabus, we had several co-planning sessions prior to the start of the semester and then weekly meetings during the semester to plan our activities. By both working on PowerPoint presentations and our own reading assignments separately and then coming back together to finalise plans for each class session, we were able to conduct the course with a true collaborative relationship. Grading of student work was shared and Author 1 used my input when returning the work to students, often returning two copies of papers so that they could see how we both edited them (I tended to focus on the editing details while Author 1 examined the overall research alignment of the assignment). We were also intentional in trying to share the development of this collaborative relationship with the students in the course throughout the semester so that we were modelling a positive co-teaching environment. This environment included mutual respect for each other's ideas and creativity as well as content expertise and continual reflective conversations about how we planned lessons, shared responsibilities and demonstrated co-teaching models during the course.

**Author 1's reflections.** Author 3 was very easy to work with not just because of her personality but because we came from different academic backgrounds and I wanted to

learn from her. Because of our different specialisations, we immediately ruled out a potential source of conflict – our areas of expertise would not necessarily be challenged by the other. Both Author 3 and I were respectful of each other and I believe that Author 3 also wanted to learn more about my field as she often conducted workshops on co-teaching for our ESOL teachers. As a clinical professor in the department and doctoral student, Author 3 was very professional. She willingly did her share of the work and was enthusiastic about teaching. Our shared professionalism was conveyed to our students who knew that they needed to submit two assignments for double grading. Students instinctively spoke to both of us in the classroom, establishing eye contact with us both, addressing both of us and seeking advice equally from both when needed. Thus there were no problems with students deferring to one professor over the other which could easily happen in a co-teaching situation.

## Results

Based on our experiences, we believe that a synergistic collaborative and/or co-teaching experience must be built upon several key factors, specifically (a) a strong sense of individual accountability and professionalism; (b) the mutual creation and demonstration of respect; (c) affirmation and overt participation in reciprocal growth and development; (d) attention to issues of power and abeyance. These factors, while theoretically simple, are exceedingly complex and are in our experiences the hallmarks of effective and productive collaborative teaching situations.

**Individual accountability and professionalism.** Professionalism and individual accountability are in many ways impossible to disentangle. As we interpret these factors, individual accountability is more than just pulling one's own weight, it means taking agency, ownership and being fully engaged, involved and committed. It means modelling pedagogies we hope our students will take up, creating assignments that cause students to reconsider long held beliefs and re-imagining new ways of being and acting in classrooms. This belief was embodied in our cooperative learning/teaching approaches that were incorporated in our ESOL courses. Individual accountability suggests that even when working in groups, each member's contribution plays a vital role in contributing to the success of the whole group (Slavin, 1985; Kagan, 1992). A particular strength of our partnerships is that all three of us were particularly committed to going beyond what was required. Our own standards were most generally more challenging than any externally imposed requirements, and we held ourselves exceedingly accountable, not only for the success of our students, but also for the success of our students' pupils. We viewed our roles in this profession as individuals working to transform not only classrooms and pedagogy, but also to shape policies and communities. Professionalism for the three of us was intimately linked to our individual sense of purpose and constructs of vocation that Fullan (2011) alludes to in his book *The moral imperative realized*.

Our own experiences with collaboration in a variety of contexts and with a range of colleagues caused us to posit with relative surety that many partnerships flounder when there is not a shared understanding of professionalism or individual accountability. Very

often one member of the partnership takes the reins, by choice or by necessity, which leaves the other one running to catch up or lead in a direction that is not personally or fully authentic. While it is certainly true that WHO we are working with is a critical factor, it is also critical that we consider HOW we are working together, if the partnership is one in which there is discord (either articulated openly or kept in silence), or one in which individuals work in concert and in harmony. Individual accountability and professionalism are, we believe, a critical foundation if a partnership is to have the potential to move into more developed aspects of collaboration.

**Mutual creation and demonstration of respect.** Mutual respect was a critical aspect of our partnership which was particularly evidenced in our relating to each other and positioning each other as collaborators in front of our students. In the academy as well as in elementary through high schools, the time required for individuals to really talk about ideologies, pedagogies, instructional goals, and students are limited and difficult to carve out of the daily/weekly routine. A critical part of our collaborative processes included developing patterns and processes for communication and reflexivity. At different stages in our collaboration, these protected spaces looked very different, however, at each stage of our developing partnerships we found time to sit, to think aloud and to debrief. This was a critical part of our reflection as individuals and as an instructional team. These frequent opportunities to touch base and to get (and stay) on the same page enabled us to provide more nuanced and creative engagements for our students and also ensured that we were able to be more thoughtful, comprehensive and consistent in our interactions with them.

Additionally, we demonstrated our respect for the other in front of our students, consistently positioning each other as collaborators, openly affirming the other, asking for feedback, corroboration, recommendations and opinions. In many ways we modelled a reflection in action and a reflection on action (Schon, 1984) simultaneously and aloud to students. As educators, we recognised and taught the importance of think-alouds and demonstrated for learners. We realised that by modelling practices of making thinking and collaborating explicit, visible and shared, we were not only providing an opportunity for developing teachers to consider the content of the course but also to imagine the complexities and possibilities of co-teaching. We consistently strove to demonstrate respect for each other as people and colleagues, but also to overtly position each other as a knower who clearly had much to contribute to the learning of the class. These interactions, this demonstration of mutual respect in public spaces and in patterns of communication, were not only indications of our professional respect for the other, but also exemplified our real care for the other as an individual. Our interactions were rooted in relationship and in constructs of care (Noddings, 1984; Phillips, 2006).

**Overt participation in reciprocal growth and development.** Another critical aspect of our collaboration was the fact that our co-teaching experiences served as a mutually reciprocal space for growth and development. As evidenced in our narratives above, each of us recognised and utilised the particular strengths, knowledge, skills and contributions of the other. Author 1 and Author 3 came with significantly different expertise and were able to provide insight to each other and to their students from a range of perspectives. Author 1 and Author 2 came with similar pedagogical backgrounds and ideologies but had worked in very different classroom contexts and were able to complement each other and build a very

robust set of experiences and theory to practice connections for their students. Through both of these collaborative situations, co-teaching provided an opportunity to build on each individual's areas of expertise and to share that knowledge base with each other and with the pre-service and in-service teachers in our courses. All parties felt that they not only had much to offer, but also that they had gained much as they learned from the expertise and skills of the other.

**Power and abeyance.** Our conversations about our collaborative work enabled us to reflect on issues of power and how they could impact and shape relationships (Foucault, 1967; Schon, 1984; Sheared, 2006). Power in this instance refers to how one uses and embraces "authority" in establishing and developing respect in the classroom. Power, as in the case of this report, also refers to the most senior person or "the institutional authority" as recognised in the university setting. When power is judiciously exercised and/or held in abeyance, it can allow someone else to hold the reins or be recognised as an authority also. Author 1 and Author 3 moved back and forth effortlessly in sharing power but Author 2 and Author 1 navigated this terrain over time as Author 2 grew more comfortable in establishing herself as a teacher educator. Giving power to a novice is crucial in assisting students in recognising the novice as competent and knowledgeable. Because manifestations of authority may be tentatively emerging in the novice, it is important for the senior to affirm the assets of the novice publicly and in private so that s/he as well as students recognise(s) the knowledge and skills of the novice.

This is particularly important when one is trying to establish and develop power or reputation as a novice needs to do in the classroom. The more experienced person then needs to know when to hold back "power" and when to accord the novice "power" so that his or her role as "teacher" may emerge. Similarly, the novice also needs to know when to accord the senior person power and when to take an opportunity to demonstrate power.

## **Conclusions**

The juxtaposition of these stories, along with our reflections upon our experiences co-teaching, brings to the fore several issues and challenges which we comment on in our post reflections. The traits and characteristics discussed in the post-reflection of this case study are examples of what co-teachers need to be able to work together in any classroom environment. It became evident, through our exploration, that specific dispositions and commitments must be in place for co-teaching experiences to be authentically collaborative and mutually beneficial.

**Author 3 and Author 2's post-reflections.** In her work with us as a collaborator and mentor, Author 1 was extremely deliberate in her actions as she enabled us to take risks. She willingly and intentionally empowered us to hypothesise, to create, to experiment, to occasionally falter, to reflect and to regain our footing and reset our paths. It has been evident that her investment in us, both personally and professionally, was both authentic and longitudinal. It has also been evident that her acknowledgement of us as unique individuals first, with experiences and strengths, coupled with our ideological stances enabled our collaboration to be both constructive and generative. While we certainly have learned a tre-

mendous amount, not only about our fields, but also about the academy, from her friendship and ongoing support, we have also felt that we have been able to contribute to her learning and growth, and we both simultaneously learned and shared our knowledge and understandings with the other.

### **Post-reflections – final words from author 1**

My work with Author 2 and Author 3 indicates the power of what could happen when doctoral students are full time in the academy and choose to make use of the resources that are there to support their development. It is easier to become more fully immersed in the life of the academy and to learn the life of academics by being present and around them. Full time doctoral students are more easily initiated into the life of the academy and are therefore privileged in the kinds of support that they can receive. For the majority of my part time doctoral students this level of support is missing because they are full time teachers and/or administrators with limited time to engage in academic activities. At the same time, this work demonstrates what could take place if more professors were prepared to break the bonds of isolationism and become more collaborative in building and maintaining relationships with their mentees. Teacher educators need to see their role as not only supporting the pre- and in-service teachers in their courses, but also nurturing, encouraging and mentoring the novice teacher educators in their departments. Broadening our understanding of our roles empowers each of us to be more authentic members of community. Even in contexts where research takes precedence for tenure and promotion, teacher educators are still called to teach in particular ways that exemplify culturally sustainable, morally and ethically appropriate best practices since we are teaching teachers how to teach (Britzman, 2007; Franklin & Blyton, 2011; Fullan, 2011). Fostering the development of collaborative communities requires the valuation and embodiment of practices such as co-teaching and mentoring.

### **Summary and recommendations for future research**

Through analysis of these case study reflections and our many conversations about the processes and promise of co-teaching and mentoring in the academy, we have come to the conclusion that senior faculty who serve as collaborators and mentors must have specific dispositions to see and bring out the abilities of novice faculty. They must value and understand the nuances of collaboration and co-teaching so that they may help novice faculty navigate the complex roles and responsibilities of the academy while sharing their own professional knowledge, skills and contributions both with their new colleagues and with the students in their courses. Mentors and collaborators with experience in the academy must have an ability to negotiate a variety of tensions inherent when individuals who have previously worked autonomously co-create and carry out a cooperative curriculum. For beginning teacher educators, the opportunity to teach in a collaborative setting in the uni-

versity provides a vision of the potentialities and challenges of the academy and the support needed to navigate those challenges while developing as a teacher educator.

We each feel certain that our professional lives have been enhanced through collegiality of collaboration. Through analysis of our experiences we conclude that the troubling teacher/learner duality (Freire, 2000), so often in place in the academy, can instead be replaced by providing opportunities for apprenticeship and collaboration. This type of environment may provide novice teacher educators with experiences that will better prepare them to succeed in and stay in the academy. Findings from this study indicate the need for further nuanced exploration into the role of mentorship of junior faculty and the efficacy of co-teaching processes in the development of professional identities of junior faculty entering the academy. Drawing on methodologies inherent in sustainability research such as case studies and self-studies will go a long way in helping us to uncover the knowledge and understandings that can enrich our work in education in general and teacher education in particular.

## References:

- Acker, S. (1997). Becoming a teacher educator. Voices of women academics in Canadian faculties of education. *Teaching and Teacher Education, 13*(1), 65–74.
- Anderson, G. L., & Herr, K. (1999). The new paradigm wars: Is there room for rigorous practitioner knowledge in schools and universities? *Educational Researcher, 28*(5), 12–21; 40.
- Armstrong, D. (1977). Team teaching and academic achievement. *Review of Educational Research, 47*(1), 65–86.
- Bernard, H. W., & Huckins, W. C. (1974). *Humanism in the classroom. An eclectic approach to teaching and learning*. Boston, MA: Allyn and Bacon.
- Brisk, M. E. (Ed.). (2008). *Language, culture, and community in teacher education*. New York: Lawrence Erlbaum.
- Britzman, D. (2007). Teacher education as uneven development: Toward a psychology of uncertainty. *International Journal Leadership in Education, 10*(1), 1–12.
- Cave, P. (2009). *Humanism*. Oxford, England: Oneworld.
- Cobb, M., Fox, D., Many, J., Mathews, M., McGrail, E., Taylor, D. L., Sachs, G., Wallace, F., & Wang, Y. (2006a). Mentoring in literacy education: A commentary from graduate students, untenured professors and tenured professors. *Mentoring and Tutoring, 14*(4), 371–387.
- Cobb, M., Fox, D., Many, J., Mathews, M., McGrail, E., Taylor, D. L., Sachs, G., Wallace, F., & Wang, Y. (2006b). Mentoring in the political and cultural world of academia. An exploration of the experiences of literacy educators. *National Reading Conference Yearbook, 55*, 1–16.
- Cochran-Smith, M. (2003). Learning and unlearning: The education of teacher educators. *Teaching and Teacher Education, 19*, 5–28.

- Cochran-Smith, M., & Fries, K. (2005). The AERA panel on research and teacher education. In M. Cochran-Smith & K. M. Zeichner (Eds.), *Studying teacher education* (pp. 37–68). Mahwah, NJ: Lawrence Erlbaum.
- Davies, T. (2008). *Humanism*. New York: Routledge.
- Dewey, J. (1933). *How we think*. New York: Heath & Co.
- Dewey, J. (1938). *Experience and education*. New York: Collier Books.
- Dinkelman, T. (2003). Self-study in teacher education: A means and ends tool for promoting reflective teaching. *Journal of Teacher Education*, 54(1), 6–18.
- Doheny, C., & Sachs, G. T. (2007). The state of ESOL teacher education in the state of Georgia. *The GA Journal of Reading*, 30(2), 32–39.
- Evans, R. (2011). Case study method in sustainability research. In A. Franklin & P. Blyton (Eds.), *Researching sustainability. A guide to social science methods, practice and engagement* (pp. 54 – 70). Abingdon, Oxon: Earthscan.
- Foucault, M. (1967). *Madness and civilization*. United Kingdom: Tavistock.
- Franklin, A., & Blyton, P. (Eds.). (2011). *Researching sustainability. A guide to social science methods, practice and engagement*. Abingdon, Oxon: Earthscan.
- Freire, P. (2000). *Pedagogy of the oppressed*. (M. B. Ramos, Trans., 30th anniversary ed.). New York: Continuum. (Original work published 1970).
- Friend, M., & Cook, L. (2007). *Interactions: Collaborations skills for school professionals*. Boston: Pearson Education.
- Friend, M., Cook, L., Harley-Chamberlain, D., & Shamberger, C. (2010). Co-teaching: An illustration of the complexity of collaborating in special education. *Journal of Educational & Psychological Consultation*, 20(1), 9–27.
- Fullan, M. (2011). *The moral imperative realized*. Thousand Oaks, CA: Corwin.
- Halton, N., & Smith, D. (1995). Reflection in teacher education. Towards a definition. *Teaching and Teacher Education*, 11(1), 33–49.
- Kagan, S. (1992). *Cooperative learning*. San Juan Capistrano, CA: Kagan Cooperative Learning.
- Lortie, D. C. (1975). *Schoolteacher*. Chicago: University of Chicago Press.
- Loughran, J., & Berry, A. (2005). Modelling by teacher educators. *Teaching and Teacher Education*, 21, 193–203.
- Maddi, S. R., & Costa, P. T. (1972). *Humanism in personology: Allport, Maslov, and Murray*. Chicago, IL: Aldine and Altherton.
- McKenzie, R. G. (2009). A national survey of pre-service preparation for collaboration. *Teacher Education and Special Education*, 32(4), 379–393.
- Mertz, N. T. (2004). What's a mentor, anyway? *Educational Administration Quarterly*, 40, 541–560. DOI: 10.1177/0013161X04267110.
- Mullen, C. A., & Kealy, W. A. (2000). Opportune encounters: Hosting extramural mentoring programmes for new scholars. *Mentoring & Tutoring*, 8(3), 221–240.
- Munby, H., & Russell, T. (1993). Reflective teacher education: Technique or epistemology? *Teaching and Teacher Education*, 9(4), 431–438.
- Murray, J., & Male, T. (2005). Becoming a teacher educator: Evidence from the field. *Teaching and Teacher Education*, 21, 125–142.

- Noddings, N. (1984). *Caring, a feminine approach to ethics and oral education*. Berkeley, CA: University of California Press.
- Nunan, D. (Ed.). (1992). *Collaborative language learning and teaching*. Cambridge, UK: Cambridge University.
- Phillips, L. (2006). Womanism on its own. In L. Phillips (Ed.), *The womanist reader* (pp. XIX–LV). New York: Routledge.
- Reybold, L. E. (2003). Pathways to the professorate: The development of faculty identity in education. *Innovative Higher Education*, 27(4), 235–252.
- Rossiter, A. (1993). Teacher educators in classroom research. Practising what we preach. In J. Edge & K. Richards (Eds.), *Teachers develop, teachers research: Papers on classroom research and teacher development* (pp. 136–146). Oxford: Heinemann.
- Sachs, G. T., Hendley, M. L., Klosterman, S., Muga, E., Roberson, A., & Soons, B. (2008). Integrating funds of knowledge in the ESOL practicum: The missing element. *GATE-SOL*, 21(2), 23–30.
- Sachs, G. T., Clarke, P., Kinuthia, W., McGrail, E., & Verma, G. (2011). Disclosure, dialogue and coming of age in the academy. In S. Robbins, S. Smith & F. Santini (Eds.), *Bridging cultures: International women faculty transforming the U.S. academy* (pp. 80–101). Lanham, Md.: University Press of America.
- Schon, D. (1984). *The reflective practitioner*. New York: Basic Books.
- Sheared, V. (2006). Giving voice: An inclusive model of instruction – a womanist perspective. In L. Phillips (Ed.), *The womanist reader* (pp. 269–279). New York: Routledge.
- Slavin, R. E. (1985). An introduction to cooperative learning research. In R. Slavin, S. Sharan, S. Kagan, R. Hertz-Lazarowitz, C. Webb & R. Schmuck (Eds.), *Learning to cooperate, cooperating to learn* (pp. 5–15). New York: Plenum.
- Smith, E. R., Basmadjian, K. G., Kirell, L., & Koziol, S. M. (2003). On learning to teach English teachers: A textured portrait of mentoring. *English Education*, 36, 6–34.
- Tabachnick, B. R., & Zeichner, K. (Eds.). (1991). *Issues and practices in inquiry-oriented teacher education*. Bristol, PA: Falmer.
- Van Dyne, L. (1996). Mentoring relationships. A comparison of experiences in business and academia. In P. J. Frost & M. S. Taylor (Eds.), *Rhythms of academic life. Personal accounts of careers in academia* (pp. 159–163). Thousand Oaks, CA: Sage.
- Vandrick, S. (2009). *Interrogating privilege. Reflections of a second language educator*. Ann Arbor: University of Michigan.
- Zeichner, K. M. (2005a). A research agenda for teacher education. In M. Cochran-Smith and K. Zeichner (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 737–760). Mahwah, New Jersey: American Educational Research Association, Lawrence Erlbaum.
- Zeichner, K. M. (2005b). Becoming a teacher educator: A personal perspective. *Teaching and Teacher Education*, 21, 117–124.

**Correspondence:**

Gertrude Tinker Sachs, PhD, Language and Literacy Unit leader, ESOL endorsement & ESOL Eds coordinator, MSIT department, College of Education, Georgia State University, P.O. Box 3978, Atlanta, GA, 30302-3978, the United States of America. Tel: 4044138384. Email: [gtinkersachs@gsu.edu](mailto:gtinkersachs@gsu.edu)

## **TEACHER-CARRIED RESEARCH AS A TOOL FOR TEACHERS’ PROFESSIONAL GROWTH**

**Dzintra Iliško, Svetlana Ignatjeva and Iona Mičule**  
Daugavpils University, Latvia

### **Abstract**

*Inquiry among the schoolteachers’ needs to be embedded, cultivated, sustained and nurtured as a tool for a better understanding of the processes in the education and for fostering teachers’ ongoing professional growth. This study explores teachers’ self-evaluation of their competency to conduct research and to incorporate it in the classroom. Both qualitative and quantitative research methods were employed to seek answers about teachers’ engagement with research and to explore the factors of resistance for carrying out research in the classroom setting. This study also dwells upon some mechanisms that lead teachers to carry out research. The focus group interviews which were conducted reflect on the factors that encourage teachers to become more involved in the research and point to the advantages they perceive as emanating from the research. The qualitative part of inquiry reflects teachers’ narrative ways of construction and reconstruction of their personal and professional knowledge. The authors discuss the processes that foster teachers to move from the fragmentary use of research strategies to the ability to live in the inquiry, practice new behaviours in the classroom, unlearn the old ones, reflect in action and stay open to a range of new initiatives.*

**Key words:** teacher-carried research, professional growth, sustainability perspective

### **Rationale for conducting research – the sustainability perspective**

The United Nations Research for Sustainable Development identifies research as an important tool for enabling education for sustainable development (ESD) in practice (UNESCO, 2005). As stated in UNESCO documents, the primary objective of ESD is to re-orient education in the direction of a more sustainable society with the intention of enhancing the quality of education (UNESCO, 2005). Sustainability is highlighted as a priority in the United Nations Decade of Education for Sustainable Development (DESD, 2005–2014) with the aim of addressing social, economic and environmental issues. UNESCO states that education is the major pathway towards sustainability (UNESCO, 2001). Agenda 21 (United Nations Conference on Environment and Development, 1992) also recognises Edu-

cation as a tool for sustainable development with its role of developing students' values, attitudes, skills and behaviours that are consistent with sustainable development. Hill and co-authors (2003) relate sustainability to ways of thinking about the world as social and personal practice. This encourages ethical, empowered individuals who act responsively in participatory and just communities of practice.

Sustainability can be conceptualised as: *ecological sustainability*, *economic sustainability* (sustainable use of resources), *socio-cultural sustainability* (respect of diversity amidst learners and the diversity of worldviews) and *political sustainability* (participation and agency) (Carr & Kemmis, 1986). Research as a tool covers all areas of sustainability with the aim of developing the values, attitudes and behaviours of students and teachers towards sustainability, particularly political sustainability. By overcoming a sense of alienation and fears that constrain teachers' ability to exercise freedom in the decision-making processes regarding their teaching, teachers actively engage in a transformative action with the aim of improving their stance and develop their existential sense of responsibility towards students.

It is also essential for teachers to be aware of the unsustainability of their practice: *discursive unsustainability* (false and misleading discourses), *social unsustainability* (placing limits or constraints of self-expression of individuals involved), *personal unsustainability* (undervaluing students' capacities, bodily integrity, resources and time) and *political sustainability* (students' and teachers' agency in creating a more sustainable future through transforming ways of thinking and acting) (Adams, 1990; UNESCO & UNEVOC, 2004; Edwards, 2005; Kemmis, 2009).

The main features of sustainable education as viewed from epistemological point of view are the following: the emphases on the learner and his/her meaningful questions, constructivist modes of learning implemented through the inquiry, a democratic learning community where each participant is involved in active decision-making concerning his/her learning; multidisciplinary teaching with a goal of integrating environmental, social, political, economic dimensions of sustainability and metocognition. Education for sustainable development means not only changing the content that we teach but also the traditional notions about how we teach.

Huckle (2003) emphasises that "education will need to reorient itself radically, shifting its emphasis from the past, industrialism, modernity... to the future, post-industrialism, postmodernity, and global society" (p. 5). For this transition to take place, teachers need to develop a deep awareness of alternative worldviews and ways of doing things. Hargreaves (1994, 2003) emphasises that in a new "creative-interpretive" mode of teaching teachers needs to be able to generate creativity and ingenuity among students by experiencing creativity and flexibility themselves. Learning viewed as an inquiry starts from experience already present in the learner, generation of themes of research by learners themselves and an active process of negotiating meaning and values critically and reflectively. By encouraging teachers to be active agents of change by doing research themselves and integrating inquiry in their classrooms, they will incorporate complexity as an interpretive and constructivist paradigm. This will lead to introducing flexibility and contextualisation of the learning process; new teaching and learning methodologies, creation of more space for reflection and democratic participation, as well as working with alternative perspectives and scenar-

ios. Teachers' involvement in doing research with the aim of improving their own classroom practices and gaining a deeper understanding about the processes in education develops confident teachers who engage in new processes, adopt new approaches towards teaching and support students' learning in innovative ways.

Research helps to generate vital themes and to question "taken-for-granted" assumptions; it raises awareness of new perspectives and actions that contribute to the transformation of old structures, practices and meanings. Research is aimed at transformations of teachers' practices and the way they understand their practices and fosters reflective thinking that gradually becomes a habit of mind. Teachers gain new insights and understandings and engage in an ongoing dialogue and meaning to enhance the quality of education. They develop the skills of critical thinking of what is occurring in their classrooms and reflect on processes going on within the classroom setting and beyond, which leads to innovative solutions. Ultimately, teachers negotiate meanings, purposes and values critically, reflectively instead of passively accepting the social realities defined by others" (Mezirow, 2000). By embracing tensions and opportunities for the democratic transformations in their classrooms, teachers also experience risk, potential discomfort and anxiety. The main tensions, which teachers need to overcome, are between safety and challenge, confidence and uncertainty, action and intent, telling and growth. Therefore, teachers need to acknowledge the spaces, tensions and opportunities for transformations to take place in their everyday activities.

Researchers and scholars often disagree regarding how education can best be conceptualised. Scholarly analyses have articulated tensions between dominant approaches and emerging sustainability perspectives. These tensions can be summed up by saying that education is essentially transmissive, with the results being prescribed by a small group of experts. The consequence is a "deprofessionalisation" of teachers who become technicians, return to didactic teaching, decline in teacher-led innovations. Teachers share less experience and time responding to the different needs of students (Sterling, 2004). In contrast, more transformative approaches are being practised by some teachers who encourage knowledge that is co-constructed by learners.

Creation of more sustainable learning communities involves a change in teachers' attitudes towards sustainability, as well as re-visioning and re-orienting educational praxis. Both teachers and students need to develop such qualities as flexibility, creativity, participation skills and a sense of responsibility to handle transitions in society. Organisation of teaching as the inquiry emphasises genuine participation, flexibility, diversity and development of "creative learning communities" (Sterling, 2004, p. 46). Active engagement with the inquiry helps teachers to regain ownership of their teaching and organise it as more meaningful, engaging and participatory, rather than passive and prescriptive. Teachers' engagement in research supports students' learning; teachers learn to take risks and to tolerate a level of vulnerability and ambiguity in order to enact productive change. Teachers' involvement with the research also has a number of benefits for professional growth and self-enrichment because it contributes to a new knowledge base (Pring, 2000) and provides a reflexive learning experience (Wood & Bennett, 2000). It allows a closer examination of a work environment that encourages teachers to bring more sustainable changes into their practice.

Teacher-carried research positions teachers' work in a sustainability perspective: it allows teachers to overcome the sense of powerlessness, disconnectedness and marginality (Freire, 1993; Allan & Turner, 2000; Gerretson, Iliško, & Fortino, 2010); it helps teachers to create inter-subjective meaning with others to contribute responsibly to the world. It allows teachers to re-evaluate and overcome the reductionist foci on teaching that leads to exercising responsible agency in the world. Schon (1983), Kincheloe (1991), Cochran-Smith (2001) and Grišāne (2010) have emphasised the integral connection between teaching and research and the need to develop teachers' ability to engage in a reflective activity as a part of professionalism. They argue that it is essential for each teacher to develop a habit of questioning and critical thinking. As Stenhouse (1981) and Salīte (2008) argue, teachers need to be active meaning makers by selecting areas of concern for themselves and by exploring those issues teachers can resolve in their own classrooms.

## Research methodology and participants

The authors chose a questionnaire to gather quantitative data about teachers' engagement with the research as well as studied teachers' self-evaluation of their research competency in all stages of doing research. The teachers who participated in the study (N=133) represent all parts of the country in the age group from 19 to 59, (Mean=37.5) that comprise 50% of all the participants. The participants in the research are either pre-school (34%) or primary school teachers (65%).

In the study, 91% of all teachers claimed that they had experience doing some kind of research. From all the teachers who took part in the study, 25% teachers were the teachers who have a secondary school education, 57% of the teachers held a bachelor's degree and 17% of teachers a master's degree. The questionnaire helped to reveal teachers' competency to carry out research.

The qualitative part of the study reflects on data gained in the focus group interviews that support quantitative data from the questionnaire. The data illustrates the driving forces that lie behind teachers' educational practice (Maclure, 1996). The authors conducted, transcribed and analysed focus group interview data and identified key issues emerging from three one and a half hours long interviews with the group of teachers with the aim of understanding the obstacles and motives that are behind teachers' willingness or unwillingness to organise their teaching as an inquiry. The authors gathered data using a multi-step and co-operative procedure (Rubin & Rubin, 1995). The authors also paid a close attention to epistemic, sociolinguistic and psychological factors that shape teachers' meaning perspectives.

## Research findings

The quantitative part of this study seeks to answer the following questions: *Are there any statistically significant differences between teachers with a different period of work experience and education regarding their engagement with research and implementing research in their classroom setting?* and *Are there any statistically significant differences between*

*the teachers who are at different stages of their professional development and education, in relation to the stage of the research where they evaluate their competency as the highest?*

In the quantitative part of the study, the authors identified the following groups of teachers:

1. teachers currently studying to obtain teacher's qualifications – the teachers who have a secondary school education and no experience of work (30 respondents, 63% of all respondents);
2. teachers with a secondary school education and from one to six years of experience currently studying to obtain a teacher's qualification (27 respondents, 20%);
3. teachers with a bachelor's degree and from seven to 20 years of experience (31 respondents, 23%);
4. teachers with a bachelor's degree and 20 or more years of experience (25 respondents, 19%);
5. teachers with a master's degree and more than 21 years of work experience (20 respondents, 15%).

After the teachers completed the questionnaire, the authors conducted focus group interviews with each group that comprised of 25 teachers. The goal was to obtain a more detailed information about the teachers' views regarding their motivation and obstacles to engage in research. For the statistical analyses of data, the authors used IBM SPSS Statistics 19 program.

Teachers' self-evaluation of their research as well as teachers' education and experience were two key factors of success in teachers work as researchers.

The authors are aware that years of service are not the only criterion that effects teachers' professional development as related to their ability to reach the highest level of competency. All the teachers who are highly competent do not necessarily function at the highest level in all situations and areas of professional work at all times

Years of work and education do seem to be the most important factors directing teachers to engage with research. Younger teachers who are just entering the teaching profession concentrate on classroom management issues and the establishment of their position of power in the classroom. Still, they are open to experimenting, new ideas and new commitments. Their experience of doing research is updated after the experience of writing a diploma paper, but their initial passion for innovations appears to decrease very soon. Teachers soon become more confident (2nd and 3d group), stay with a routine and prefer traditional approaches and methods. Their interest in research decreases, and they are less engaged and less enthusiastic.

Teachers with a master's degree and work experience of more than 20 years evaluated their competency to carry out research quite highly. They are mostly prepared to participate in improvement of their classroom practice; they judge the value of research according to applicative value and its potential for improving practice.

By taking into account the assumption of the homogeneity of variance, the one-way ANOVA showed statistically significant differences between teachers with different period of work experience regarding their self-evaluation of their research competency in the following phases of the research: planning the research, preparing for the research, processing the results, reflecting and presenting the research findings.

Teachers were asked to evaluate their competency of conducting research on a 5-level scale:

1. My competency of doing research is not sufficient;
2. My skills and competency to carry out research is satisfactory;
3. I have enough skills and competency to carry out a research activity in my classroom setting;
4. I have all skills and competencies needed to carry out research better than my colleagues;
5. I can teach others to do research.

The teachers evaluated eighty statements about their research competency. All statements were classified according the type of activity: intellectual competency, communicative competency, information, analytical competency and reflective competency. In addition, all types of research activities were classified in the following stages of carrying out the research, for instance, to formulate the theme of the research, to prepare for the research, to conduct the process of the research and to present research findings.

The indicators that allow evaluating the level of competency correspond to diverse types of research activity in different stages of the research as represented in Tables 1, 2, 3, 4. The level of competency has been evaluated as Mean of the corresponding indicators.

Table 1. Indicators of the intellectual research activity

Setting the theme of the research	to formulate the research question;
	to discover the undiscovered aspect in the research;
	from all the themes suggested to choose the most topical and up-to-date theme;
	to discover cross-curricular connectedness;
Preparing for the research	to identify new problems and issues in the frames of recently studied issues
	to divide processes in research stages;
	to find out the most appropriate methodology for one's research topic research;
	to choose the methods of the research that match the chosen theme;
The process of the research	to choose the type of research (qualitative and quantitative);
	to choose a representative sample in line with the chosen type of research
	to find out the most optimal ways of solving the problem, based on the existing algorithms;
	to combine familiar algorithms when the typical solution is not possible;
Presentation	to compare, classify, contrast and range objects;
	to combine and to use interchangeably qualitative and quantitative methods of research;
	to use conclusions formulated for the solutions of one's own question
	to summarise the research findings;
Presentation	to discover a new aspect in one's own research;
	to see the practical application of the research findings;
	to choose the most topical results of the research;
	to interpret the results of the research

The acquisition of cognitive skills develops systemic thinking. It involves learning basic concepts through discovery and understanding the reciprocal relationship between the con-

cepts and articulation of one's own theory based on solid arguments. By working in a systemic context, the students have a better grasp of the research concepts.

The results of the research indicate that the level of intellectual competency in all stages of the research is sensitive both to the level of education of the respondents and to their work experience ANOVA,  $p < 0.001$ . The lowest teachers' self-evaluation of intellectual competency was for the teachers who have a secondary school education, and this evaluation was significantly different from the self-evaluation of respondents with a master's degree (Multiple Comparisons, Scheffe,  $p < 0.001$ ).

Teachers' work experience significantly influenced the level of intellectual competency related to the stages of research that set the theme (ANOVA,  $p = 0.001$ ) and the process of the research (ANOVA,  $p = 0.007$ ). The lowest evaluation of the intellectual aspect in carrying out the research was among the teachers who had no work experience. During the preparatory stage of the research, the influence of teachers' work experience was on the level of a statistical tendency (ANOVA,  $p = 0.062$ ), but, in the stage of the process of doing research, the work experience had no significant influence on teachers' level of intellectual competency in doing research (ANOVA,  $p = 0.259$ ). Independent of teachers' work experience, self-evaluation of their competency for doing research in this stage was particularly high. The analyses of the influence of both, the level of education and the work experience of teachers were studied by comparing the competencies of respondents in five selected clusters.

The lowest level of intellectual competency for all stages of the research is characteristic of the respondents in the first cluster who had a low level of education and no educational experience of work. The highest level of intellectual competency was among the respondents from the 5th cluster that comprised of teachers with a master's degree: 45% of respondents in this group had more than 20 years of work experience.

Table 2. The indicators of the information research competency

Setting the theme of the research	to see the unusual in usual things; to formulate the research themes in the process of doing research; to discover different aspects of the issue of the discussion; to demonstrate interest in the scientific literature; to suggest interesting themes of research
Preparing for the research	to formulate interview questions; to design a questionnaire; to find out information from diverse sources; to design the necessary research instrument; to work with scientific categories
The process of the research	to carry out content analyses of the text; to read diverse types of texts; to analyse the results of the questionnaire; to work with diverse sources of information; to analyse the results of interviews
Presentation	to present research findings orally; to formulate research finding in a written form; to formulate conclusions of the research; to analyse the information in graphs, tables and diagrams; to offer results of one's own research for the practical usage

The level of information competency and intellectual competency depended on teachers' work experience and their education. The information competency on the research stage – setting the theme of the research – for all respondents in all clusters was evaluated as low, and there were no statistically significant differences in those evaluations (ANOVA,  $p=0.130$ ). On the research stage: preparing for the research, the differences in the evaluation reached the level of statistical significance (ANOVA,  $p=0.083$ ).

Table 3. Indicators of the communicative research activity

Setting the theme of the research	<ul style="list-style-type: none"> <li>to carry out a dialogue with adults and interesting people while choosing the theme of the research;</li> <li>to make listeners interested in one's theme of the research;</li> <li>to discuss publicly the topicality of the chosen theme;</li> <li>to formulate the themes of the research in the process of communication with other people;</li> <li>to find the themes of the research in internet</li> </ul>
Preparing for the research	<ul style="list-style-type: none"> <li>to distinguish between facts and opinions;</li> <li>to evaluate ethical aspects of communication while doing the research;</li> <li>to compare the opinion of different respondents about the chosen theme;</li> <li>to do piloting of the interview questions;</li> <li>to probe professionals for a deeper and more thorough study on the issue of the research</li> </ul>
The process of the research	<ul style="list-style-type: none"> <li>to carry out the interview;</li> <li>to listen attentively the opinions and the ideas constructively expressed by other people on the theme of the research;</li> <li>to exchange the information via technology;</li> <li>to work on a team;</li> <li>to formulate questions about the chosen theme with experts in the field</li> </ul>
Presentation	<ul style="list-style-type: none"> <li>to formulate one's views in a logical way while presenting research findings;</li> <li>to discover creative ways of presenting the results of the research;</li> <li>to present one's research findings publicly (monologue, discussion, polemics);</li> <li>to follow ethical norms and rules while carrying out the dialogue;</li> <li>to discover the practical applications of the results of the research</li> </ul>

By incorporating inquiry in teaching, the main shift takes place from what is taught to what the students acquire – both cognitive and meta-cognitive skills, knowledge, understandings, interpersonal skills and ethical values. Research contributes to strengthening students' ethical competencies – the capacity for dialogue, social skills and the ability to transform the environment. Students internalise values of co-responsibility, solidarity and cooperative attitudes, which are all basic from the sustainability perspective. In teaching, the main emphases should be put on values, ethical motivation and ability to work with others to build a sustainable future. Open 'communicative space' allows open communication and discus-

sion to take place, sharing thoughts, experiences and challenges to promote ideas and knowledge and communicating those ideas (Carr & Kemmis, 1986; Kemmis & Smith, 2008). Collaborative inquiry and being a part of like-minded people can become a source of joy and inspiration.

From all types of competencies, communicative competency is the least sensitive to the combination of such factors as education and work experience. The respondents with the highest level of education and the work experience evaluated their communicative competency higher than other competencies in doing research although the differences are not statistically significant (ANOVA,  $p > 0.05$ ). The highest self-evaluation of communicative competency was among the respondents in the research stage called the process of the research; the lowest self-evaluation of the communicative competency was in the stage of preparing for the research.

Table 4. Indicators of the reflectivity during the process of the research

Setting the theme of the research	to discover one's interests; to formulate one's attitude to the issue of the study; to see the global aspect of the theme of the research; to evaluate the chosen theme; to analyse ethical aspects of the chosen theme
Preparing for the research	to set the main goal and to discover the methods of research; to analyse necessary methods for the study of one's research problem; to evaluate the representativeness of the sample; to evaluate the quality of the questionnaire; to evaluate the possibility of solving the issue using the availability of limited resources
The process of the research	to discover the causes of difficulties in the process of the research; to relate the efforts employed to obtain the results of one's research issue; to compare conclusions formulated with the available ones on the theme of the research; to analyse the validity of the research findings; to use known patterns and to discover innovative aspects of the issue of the study
Presentation	to evaluate one's achievements; to evaluate one's research in light of ethical norms and values; to critically analyse the issue of the research; to analyse research findings in light of their practical usage; to relate research results to one's theme of the study

Constructivist educators reject the notion of teaching as a one-way linear activity and to view learning as a collaborative problem-posing process of inquiry that fosters higher forms of reflection such as dialogical (Biggs, 1999), critical (Carr & Kemmis, 1986; Kincheloe, 1991) and meta-reflection (Hatton & Smith, 1994; Jacobs, 2008; Schon, 1987). Meta-reflection is the highest form of reflection that requires students' ability to question their reflective and learning process during the process. Dialogical reflection requires interaction between the learners and the teacher in the process of knowledge construction where the

teacher has an important role of a facilitator who invites comments, encourages ideas and gives feedback. Critical thinking skills can be fostered by providing an active learning environment and dialogical and collaborative learning process in order to increase students' critical understanding. The sustainability perspective requires critical thinking and reflection on issues from the environmental, economic and political perspectives, which implies a re-constructivist approach to knowledge supported by ethically informed values that leads to change. The sustainability perspective draws on constructivist theory and actively engages learners in the process of reflection through democratic, cooperative and collaborative strategies where all participants learn from each other in the process of seeking change for sustainability. For the reflexivity to become the teachers' habit of mind in their professional lives, it is necessary to promote the development and a renewal of the teachers' own philosophy of teaching and to change their epistemic stances.

The level of reflective competency for the respondents from different clusters differed significantly on the research stage: preparing for the research (ANOVA,  $p=0.003$ ), but, on the research stage, the process of the research, the differences were seen at the level of statistical significance (ANOVA,  $p=0.077$ ). The lowest level of reflective activity was for the respondents of the 1st and the 2nd clusters who had only a secondary school education.

From all types of competencies, the most sensitive towards the level of education and the experience of work was intellectual and information competency. The reflective competency of the respondents from all clusters had the lowest evaluation, and this competency was statistically significant (ANOVA,  $p=0.251$ ).

The comparison of the respondents from different clusters in different stages of research indicated the differences on the level of statistical tendency as observed in the stage – setting the theme of the research (ANOVA,  $p=0.068$ ) and the process of the research (ANOVA,  $p=0.081$ ). The respondents with an insufficient education (a secondary school education), comprising the 1st and the 2nd clusters, evaluated reflective competency lower than others.

All types of competencies were significantly connected. All correlations were not less than  $r=0.75$ , and all connections were direct. The closest connection was among the intellectual and information competencies ( $r=0.858$ ).

The process of inquiry is influenced by a number of factors. Inquiry is influenced by cultural and social background, our values and beliefs and the way we approach the issue. Our psychological characteristics also influence the way the approach the issue.

### **Teachers' motivation to engage in research-based activities**

From the data gained in focus group interviews, it becomes evident that a variety of activities that teachers perform mirror their research. Preparing the lesson plan requires teachers to engage in some kind of research and to do some scholarly reading of the latest literature in the field. The project week and mentorship of students' research requires teachers to do some kind of research, though teachers are frequently unaware of the linkages that exist between research and teaching.

The data obtained from the focus group interviews indicates that there were a number of contextual factors that influenced how and why teachers integrated teaching and research in their practice. They are as follows:

1. understanding the broader meaning of the research;
2. perceiving research as a collaborative venture;
3. the supporting environment;
4. the support of administration in their institution.

In addition, some crucial conditions were acknowledged for the efficient work of a teacher as a researcher.

1. To become active agents in their own classrooms, teachers needed to know the basics of good research, the latest developments of the educational research as well as to comprehend the broader meaning of the research (Stenhouse, 1975; Cambell, 2003). Even in making the decision not to carry out research, teachers needed to critically analyse the available research and to judge it to make a well-informed decision. Teachers trained in a positivistic research tradition needed to be exposed to a broader meaning of the research base using a more pluralistic and constructivist epistemology with its emphases on *phronesis* (Eisner, 2002) and teaching as *art* (Stenhouse, 1975).
2. The other factors that motivated teachers' engagement with the research were perception of inquiry as a collaborative venture and availability of a supportive environment (King, 2002; Campbell et. al., 2003; Loughran, 2003). Loughran (2003) suggests that teacher-carried research needs to be genuinely collaborative, problem-solving and reflective (Schon, 1987) and should be a venture where the teacher can communicate with others in a friendly and non-threatening environment. Research is a collaborative venture that includes dialoguing with others, spurred on to a greater insights and creativity by the excitement of dialogue, alternative options and ending with a serendipitous discovery of a new insight or 'aha' moment.
3. A supportive environment includes cooperation among all participants involved and respect for diverse opinions. Such an environment allows taking into account other peoples' perspectives and constructing an interpretation of the situation. In constructivist classrooms, teachers create environments where students engage in an activity, foster student-to-student interaction and structure learning within relevant and realistic environments.

Using the stories told, it is possible to trace a few stories of good practice if making research as an everyday venture. Teachers' efforts in integrate inquiry type of learning can be traced in their efforts to make students active participants in the learning process, to engage students in sense-making processes, while taking into consideration students' interests and needs.

## Constraints and tensions of engagement in the research

In focus group interviews, teachers shared their struggles in overcoming several epistemological tensions caused by institutional and epistemological causes: the dichotomy of teaching as a normative venture and innovations in teaching, the dichotomy of the emphases on the result vs. the priority of both the process and the result, the dichotomy of limited time and space, the curriculum demands, the need for exploration, understanding, critical reflection and reflection on the meta-cognitive level of teaching.

Among the other constraints of doing research mentioned by the teachers were the following: a low status of the teaching profession, low salary, time constraints, domestic responsibilities, anxiety, pressures, teachers' previous experiences as students, a lack of support from the administration, burn-out and frustration related to leaving profession. Teachers commented that even if they chose to do research with the aim of improving their practice, it is added on top of their existing work and thus became a burden for them because of the increased workload.

Teachers' previous experience in learning and work in non-constructivist classrooms were also a serious obstacle to building teaching as inquiry. The traditional view of learning is comfortable, predictable and a long-standing tradition among teachers. Teachers, being custom-bound, overemphasised traditional ways of doing things, with too much reverence for the past. A 'fear of the unknown' philosophy of teaching leads to teachers avoiding situations that lack clarity and to striving towards certainty before moving forwards. This leads teachers to rigidity in problem-solving responses. Traditional approaches towards teaching do not allow teachers to discover the essence of things and leads to polarising opposites.

One teacher, who was deeply committed to integrate research into her everyday reality, shared her worries about difficulties the students faced in adjusting to an inquiry type of learning.

*I spend hours in preparing materials, made the lessons intriguing, [but] the students were not getting as much as I wanted" ... "Still, I continued to experiment until I felt at a comfort level..." She continued: "I come to gradual awareness about how I could better engage my students in meaningful learning." "I have learned to wait, to be patient until the desired changes occur.*

She shared her success that can be clearly read in the response of one of her students who stated:

*I did not like this lesson because I could not participate fully in this lesson, because I did not spend enough time at home preparing for this lesson.*

The most often mentioned constraint is the pressure of time. Time constraint relates to practical, emotional and explanatory factors. Time also has to do with priorities, possibilities and teacher's professional identity. The limited availability of time and space of doing and integrating research indicates what is prioritised by the teachers.

The other obstacles impeding integration of research in the classroom setting mentioned by teachers were orientation of teaching towards students' achievements, social expectations, administrative demands, time pressures and burn out. The teachers stressed the ambiguity, discomfort and anxiety faced while introducing research in a classroom setting.

As Montuori (2008) remarked, the research process is "spiritual practice" that involves "both – divergence and convergence, order and disorder, risk and safety, boredom and anxiety" or the experience of "riding on the wave of the paradox of boredom and anxiety, innovation and tradition" (p. 21).

The teachers pointed to the tensions to resolve the shifting emphasis from searching for a better instructional technique to improve practice to focusing on a more sophisticated understanding about the processes and sense-making about the existing reality. One teacher who was identified by others as successful in her teaching, reported that her focus gradually moved from "what to do and how to do it" towards paying more attention to what is going on and why. The teacher commented:

*First, when I introduced inquiry, I come across the misunderstanding on the part of the students about the different approach towards teaching that I have introduced. Later, the students gradually adjusted to new approaches. This required them to spend more time analysing how they are thinking and how they come out with this particular solution to the problem.*

## **Conclusions: Implications for teacher training institutions**

Using research as a tool to work towards the sustainability perspective as a *frame of mind* in our vision and reality requires adopting a perspective based on the most fundamental ethical, epistemological and metaphysical considerations, essentially concerned with values embedded in them (Bonnett, 2002). Integration of research with the goal of improving classroom practice for teachers means embracing "epistemology in which knowledge is situated, plural and contested" (Jacobs & Murray, 2010, p. 332). Teacher training programmes should offer frames for teachers for examining their own teaching in regard to educational purpose and social vision as well as preparing teachers to become reflective researchers who can investigate problems that arise in their teaching practice.

The quantitative part of the study indicated that there are any statistically significant differences between the teachers who have a longer period of work experience (21 years and more) and a master's degree and their engagement in the research and implementing research in their classroom setting. There are statistically significant differences between the teachers who are at the different stages of their professional development and education and the stages of the research where they evaluate their competency as the highest.

Successful integration of teaching and research depends upon certain factors: teachers' views about possibilities and practicalities of doing research, consideration of the teacher's workload and multiple responsibilities and roles, the supportive environment of the institution in which teachers work, the support and the encouragement or the lack of support

teachers receive from the administration and a long-term institutional strategy for developing research-based curriculum in their schools.

One of the major challenges in teachers' professional development is to overcome a teacher-centred transmission mode of delivering knowledge and to move towards building a research-based teaching practice that allows teachers to generate personal knowledge.

There are only a few cases of transforming curriculum as inquiry and building one's work as ongoing research for the purpose of improving practice among the participants of the focus groups. This still remains a modest activity carried out by enthusiastic teachers who do not gain control of broader institutional agendas.

Still, teacher training programmes fail to prepare teachers to become reflective practitioners and critical researchers who can work towards improving their classroom practice in a thoughtful and nuanced way. Teacher training programmes should narrow the gap between teaching and research, since both overlap in values and skills, and the difference lies in positional constraints and practices. Teacher trainers in teacher training institutions need to be sensitive to the traits and hopes that teachers bring with them.

The transition from being a teacher to accepting the additional role of the researcher in the classroom setting becomes a major challenge for teachers, and this requires a change in professional priorities as well as a shift from normative to a more theoretical, conceptual, reflective and process-oriented approach to teaching. This requires adding new perspective and joy to teachers' repertoire rather than abandoning something else.

Teachers' readiness to change involves the teachers' awareness that change is necessary and their willingness to overcome fears, doubts and resistance to make this change possible. Teachers need to be aware of which curriculum models (transmission, constructivism) are dominant in their teaching practice and to gain understanding that higher levels of learning (application, integration and synthesis) are more learnable though inquiry-based modes of teaching in a constructivist curriculum model.

The emphases in teacher training programmes should be put on developing a mindset of a teacher-researcher and a reflective practitioner. The acquisition of the mindset of a teacher-researcher is more important than any other skill or knowledge that teachers gain in the teacher education programme because it can help teachers to negotiate the challenges they encounter in daily teaching. Embracing this mindset can lead teachers to think at a meta-level about their goals, lessons, methods and can help them to overcome estrangement and deal with complex educational reforms.

Facilitation of teacher research involves not only disseminating tools and strategies for doing research, but reshaping and redesigning teachers' subjectivities, dispositions and identities. This also includes leading teachers out of comfort zones, creating new spaces and encouraging teachers' ownership of research.

## References:

Adams, W. M. (1990). *Green development: Environment and sustainability in the third world*. London: Routledge.

- Allan, K., & Turner, J. H. (2000). A formalization of postmodern theory. *Sociological Perspectives*, 43, 363–385.
- Biggs, J. (1999). *Teaching for quality learning at university*. Buckingham: SRHE & Open University Press.
- Bonnett, M. (2002). Education for sustainability as a frame of mind. *Environmental Research*, 8(1), 9–20. DOI: 10.1080/11350462012019619.
- Campbell, A., Freedman, E., Boulter, C., & Kirkwood, M. (2003). *Issue and principles in educational research for teachers*. South Well: British Educational Research Association.
- Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge and action research*. London: Falmer Press.
- Cochran-Smith, M. (2001). The outcomes question in teacher education. *Teaching and Teacher Education International Journal of Scholarship and Studies*, 17(5), 527–546.
- Edwards, A. (2005). *The sustainability revolution: Portrait of a paradigm shift*. Gabriola Island, Canada: New Society Publishers.
- Eisner, E. W. (2002). *The arts and the creation of mind*. New Haven, CT: Yale University Press.
- Freire, P. (1993). *Pedagogy of oppressed* (30th anniversary edition). New York: Continuum.
- Gerretson, H., Iliško, D., & Fortino, C. (2010). Sustaining self-regulated learning through inquiry – driven mathematics and science instruction. *Discourse and Communication for Sustainable Education*, 1(1), 3–17.
- Grišāne, O. (2010). Sustainability in pupils' research activity by integrating opportunities of formal and non-formal education in secondary school. *Discourse and Communication for Sustainable Education*, 1(1), 39–50.
- Hargreaves, A. (1994). *Changing teachers, changing times: Teachers' work and culture in the postmodern age*. Toronto: OISE Press.
- Hargreaves, A. (2003). *Teaching in the knowledge society: Education in the age of insecurity*. Maidenhead: Open University Press.
- Hatton, N., & Smith, D. (1994). Reflection in teacher education – towards definition and implementation. *Teaching and Teacher Education*, 11(1), 33–49.
- Hill, S. B., Wilson, S., & Wateson, K. (2003). Learning ecology – a new approach to learning and transforming ecological consciousness: Experiences from social ecology in Australia. In E. Sullivan & M. Taylor (Eds.), *Transforming practices: Learning towards ecological consciousness* (pp. 45–54). New York: Palgrave Press.
- Huckle, J. (2003). *Education for sustainable development: A briefing paper for the TTA*. London: Teacher Training Agency.
- Jacobs, G. C. (2008). The development of critical being? Reflection and reflectivity in an action learning programme on empowerment for health promotion practitioners in The Netherlands. *Action Learning*, 5(3), 221–235.
- Jacobs, G., & Murray, M. (2010). Developing critical understanding by teaching action research to undergraduate psychology students. *Educational Action Research*, 18(3), 319–335.

- Kemmis, S. (2009). Action research as a practice-based practice. *Education Action Research, 17*(3), 463–474.
- Kemmis, S., & Smith, T. J. (2008). *Enabling praxis: Challenges for education*. Rotterdam: Sense.
- Kincheloe, J. L. (1991). *Teachers as researchers: Qualitative inquiry as a path to empowerment*. Bristol: Falmer Press.
- King, M. B. (2002). Professional development to promote school wide inquiry. *Teaching and Teacher Education, 18*, 243–257.
- Loughran, J. (2003). In search of meaning in teaching about teaching: Self-study of teacher education practices. *International Journal of Educational Policy, Research & Practice, 4*(2), 3–37.
- Mezirow, J. (2000). Learning to think like adult: Core concepts of transformation theory. In J. Mezirow and Associates (Eds.), *Learning as transformation* (pp. 3–34). San Francisco, CA: Jossey Bass.
- Montuori, A. (2008). The joy of inquiry. *Journal of Transformative Education, 6*(1), 8–26.
- Rubin, H., & Rubin, I. (1995). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA: Sage.
- Pring, R. (2000). The ‘false dualism’ of educational research. *Journal of Philosophy of Education, 34*(2), 247–260.
- Salīte, I. (2008). Educational action research for sustainability: Constructing a vision for the future in teacher education. *Journal of Teacher Education for Sustainability, 10*, 5–17.
- Schon, D. A. (1983). *The reflective practitioner*. New York: Basic Books.
- Schon, D. A. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Stenhouse, L. (1975). *An introduction to curriculum research and development*. London: Heinemann.
- Stenhouse, L. (1981). What counts as research? *British Journal of Educational Studies, 29*, 103–114.
- Sterling, S. (2004). *Sustainable education. Re-visioning learning and change*. UK: The Schumacher Society.
- United Nations Conference on Environment and Development (UNCED). (1992). *Agenda 21, Chapter 36 “Education, Awareness and Training”*. Paris: UNESCO.
- UNESCO. (2001). *Education for sustainable development*. Retrieved from [http://www.unesco.org/education/justpublished\\_desd2009.pdf](http://www.unesco.org/education/justpublished_desd2009.pdf)
- UNESCO, & UNEVOC. (2004). *Orienting technical and vocational education and training (VTET) for sustainable development: A discussion paper*. Bonn: Authors.
- UNESCO. (2005). *United Nations decade of education for sustainable development international implementation scheme*. Paris: UNESCO. Retrieved from [http://www.unesco.org/education/justpublished\\_desd2009.pdf](http://www.unesco.org/education/justpublished_desd2009.pdf)
- Wood, E., & Bennett, N. (2000). Changing theories, changing practice: Exploring early childhood teachers professional learning. *Teaching and Teacher Education, 16*(5/6), 635–647.

**Correspondence:**

Dzintra Iliško, PhD, Institute of Sustainable Education, Faculty of Education and Management, Daugavpils University, Parādes Street 1, Daugavpils LV-5401, Latvia. Email: dzitra.ilisko@du.lv