Most significant change technique: a supplementary evaluation tool

Sarojni Choy[*]
Griffith University
John Lidstone
Queensland University of Technology
Brisbane, Australia

Abstract

A primary purpose of evaluating education and training courses is to assess how well their design and delivery aspects have met the predetermined learning objectives in order to make improvements. Thus traditional approaches to evaluation provide data on what is mainly of interest to the course designers and facilitators. Consequently, conventional data collection techniques do not necessarily seek in-depth self-reflection by the learners or what is of most significance to them. So, the real impact of course completion is not fully understood. The Most Significant Change approach to evaluation is participatory and collects stories on the impact of the training experienced by the learners, supplementing data that provides a more holistic and richer picture of the learning outcomes from learners' perspectives.

This paper reports on the use of the Most Significant Change technique to supplement data from conventional sources in order to evaluate a leadership capacity building course. Eighteen participants completed a Master of Education course over a period of two years. The Learning Experience Surveys provided mainly quantitative and some qualitative data on the students' experiences and satisfaction with teaching and learning. Stories about the most significant changes experienced by the students were recorded during interviews, and from reflective essays and focus groups.

The findings highlight the value in using the Most Significant Change as a tool for a more comprehensive evaluation of capacity building programs. The tool offers potential for VET practitioners to extend their evaluation techniques and learn more about the impact of education and training that they offer.

Conventional evaluation practices

The main goal of course evaluations is to continuously improve content and teaching effectiveness (Sproule, 2000). Conventional evaluation of learning programs habitually focuses on what the pre-defined objectives propose to achieve. Data is regularly gathered mainly using surveys, normally at the end of a teaching and learning episode. Less frequently interviews, focus groups and student learning journals (Wagner, 1999) are also used. Traditional surveys usually require learners to indicate their level of satisfaction to sets of items based on the learning content, aspects of teaching, and method of delivery -

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[*] Sarojni Choy was an employee of the Queensland University of Technology during the time of the research for this paper.

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all of primary interest to the facilitators and their institutions, not necessarily the students or their sponsors. There tends to be a reliance on mostly quantitative data. Denson, Loveday and Dalton (2010) maintain that conventional surveys focus largely on teaching rather than learning. As such, the learning processes and outcomes that are of most significance to the learners or sponsors are often disregarded. Moreover, standard data does not fully inform the impact of education and training.

Arguably, the survey responses indicate aspects that need adjustment, but a meta-analysis by Frick, Chadha, Watson and Zlatkovska (2010) found that current evaluations provide little practical information for instructors on how to improve new teaching strategies around learner-centred instruction, problem based learning and complex learning. Several other researchers have also highlighted the limitations in current approaches (see for example Cohen, 1981; Denson, Loveday & Dalton, 2010; Feldman, 1989; Frick, Chadha, Watson, Wang & Green, 2008a, 2008b; Kulik, 2001; and Spiel, Schober and Reimann, 2006). Shortland and Mark (1987), Wagner (1999) and Spiel et al. (2006) have stressed the lack of a systematic approach to evaluation and went on to strongly recommend extending data collection beyond student ratings in order to obtain greater insights. Despite calls for improved evaluation approaches, conventional surveys with student ratings to indicate their success on mastery of the course objectives remain the norm. Although the objectives are established through wide consultation and a rigorous institutional process so as to meet the quality standards for the course and the supposed learning needs of the majority, they may not necessarily align with the diverse learning needs of the individuals, nor support what is of importance when translated into their socio-cultural contexts. Given these limitations, supplementary tools are needed for insights into what and how learning is valued by learners and what are the most significant outcomes from their perspectives.

Tools such as the Most Significant Technique (MSC), developed by Dart and Davies (2003), extend outcome measures beyond the pre-determined objectives of the course and present a more holistic evaluation. Although it has not been used much for the evaluation of education and training, this supplementary tool could help designers and facilitators gain a broader view of what aspects of the course content need to be reviewed and how to re-design the delivery in order to improve alignment with learner needs, whilst still maintaining the quality standards for education and training providers.

This paper reports on how MSC was used for gathering qualitative data on the impact of the course for the evaluation a Master of Education to develop leadership capacity of 18 senior education officers in a Pacific nation. While some illustrative data are presented, there is little discussion around these because essentially the focus of this paper is on the use of MSC as a tool for evaluation, not the findings themselves.

Most Significant Change

The MSC technique was first developed by Davis (1996) to monitor and evaluate complex participatory rural development programs with diverse implementation and outcomes. The technique is based on stories about changes that participants experience

during and as a result of a particular project or program, rather than pre-defined indicators alone. Its effectiveness in highlighting the secondary outcomes, such as those of personal significance to the participants, has increased popularity and use of this technique with developmental programs across the world. In 2000 Dart advanced the approach using the theory of evolutionary epistemology (Campbell, 1969) which has its contingency on the learning process. She re-conceptualized it within a constructivists' subjective epistemology explaining that the meaning of stories on the most significant changes experienced by individuals and groups of learners are constructed and derived from their socio-cultural contexts as explained by Lave and Wenger (2003). The benefits are therefore translated and constructed in socially meaningful outcomes. It is this perspective (constructivist subjective epistemology) on learning that offers scope for MSC to be used as a supplementary technique to evaluate capacity building through education and training courses. The qualitative nature of data from MSC provides an understanding of a diverse set of outcomes that have wider implications for developments within specific socio-cultural environments.

Because MSC is non-threatening (does not have a right or wrong answer and recognises two sets of opposing outcomes: expected/unexpected; and agreed/ disputed meanings) it offers genuine input from the participants' perspectives. The technique provides numerous benefits in addition to those afforded by existing evaluation methodologies. For example, it is participatory in nature and supplies data on impact and outcomes, and often highlights unexpected changes reflecting distinct values to individuals and their organizations or communities. Dart and Davies (2003) contend that this dialogical story based evaluation tool identifies the unintentional, complex and diverse outcomes beyond the objectives of the course. Stories allow people to share their experiences in a holistic yet concise manner, in a way that is powerful and promotes dialogue. Stories describing MSC also enlighten people's value systems and the broader influence of the learning program. In cultures where story telling is a key mode of communication (eg. in the Pacific), MSC de-formalises evaluation and encourages participants to openly express what is valuable and most important within their socio-cultural contexts. The participants themselves are best placed to relate stories about the most significant changes or outcomes because they are the cultural insiders with knowledge and understanding about the dynamic and multifaceted contexts of their environments. The stories are analysed from the perspective of the participants, not cultural 'outsiders' such as many evaluators who remain at the periphery of the socio-cultural boundaries where adult learners apply what is learned.

Although use of the MSC technique has gained popularity with developmental programs (see for example Sigsgaard, 2002; Kelly, Kilby & Kasynathan, 2004; Fehring, Pettenon, Fagan, Goyen & Connor, 2006; and Willetts & Crawford, 2007) some may argue that the personal or groups stories do not present the rigour or have scientific validity. Dart and Davies (2003) defend that the rigour of the ten steps of MSC process acknowledges, qualifies and dignifies anecdotal evidence. The ten steps of MSC are:

1. Getting started: establishing champions and getting familiar with the approach
2. Establishing 'domains of change'

3. Defining the reporting period
4. Collecting stories of change
5. Reviewing the stories within the organizational hierarchy
6. Providing stakeholders with regular feedback about the review process
7. Setting in place a process to verify the stories if necessary
8. Quantification
9. Conducting secondary analysis of the stories en masse
10. Revising the MSC process.

The process around these steps challenges participants to critically reflect and analyse the outcomes and changes they experience or observe. Traditional education and training evaluation tools do not allow this level of in-depth criticality. Another added advantage is that the process for MSC is relational and interactional, hence readily leads to transformational learning which is particularly important for leadership development.

The developers of MSC, Dart and Davies (2003), advise that MSC be used in combination with other techniques and approaches. In the case of this paper Step 4 and secondary analysis in Step 9 were most appropriate to learn about aspects that conventional data sources did not bring to light.

Master of Education for Leadership Capacity Building

Eight study units of the Master of Education (MEd) course offered by an Australian university were customised for 18 senior education officers (7 females and 11 males) from a developing country in the Pacific. Among them were ten standards officers and eight education planners. The pre-determined objectives of the customized course were to:

1. develop high level understandings and skills that reflect issues pertaining to government policy development, curriculum implementation and research in relation to education planning and inspections activities;
2. develop professional-as-researcher skills in the work contexts of the learners;
3. develop skills of observation, evaluation and appraisal to facilitate professional work and creative working environments;
4. develop management and supervision skills that promote effective work practices, learning and teamwork in the workplace;
5. facilitate work with learners' colleagues, in a collaborative context, to develop more enhanced understandings related to their specific work contexts; and
6. reflect upon, develop and value personal and cultural values, beliefs and goals as they relate to learning and knowing in learners' work places.

These objectives also reflect the broader graduate capabilities of the university. The conceptual framework of the course originated from a need to enhance leadership capacity of senior education staff, at a time of implementing the new education reform agenda in the students' country. Appropriately, the course was adapted to meet, where possible, immediate organisational and individual needs.

Successful completion of eight study units led students to gain skills in: reflective practice; analytical & critical thinking; leadership; policy analysis, research skills including research critique; mentoring; supervision; performance management; professional development; human resource management; financial management; business processes and analysis; and project planning, management, evaluation and reporting. The pedagogical design of each unit was founded on transformation learning (Mezirow, 1991). All the units were delivered using a blended approach involving a two week long face to face sessions each semester as well as distance learning. The course was completed in two years - two units per semester.

In the first year of study, the students developed a broad knowledge base on the theories of leadership and research. The assignments challenged them to demonstrate theoretical application of the new knowledge in the context of their respective functional roles as education leaders, but within a framework of the education reform agenda in their country. The applications were mainly at the level of the individual study units. In the second year they were required to demonstrate a more holistic application of knowledge and expertise drawn from the first year study units. Accordingly, the assessment tasks required them to integrate key elements from the various study units to complete a ten month long project (by way of two facilitated study units). Additionally, the pedagogical structure of the second year units facilitated greater transformational learning.

Aspects of teaching, study content and delivery approaches were evaluated routinely each semester using a list of items from the Learning Experience (LEX) survey, the university's conventional evaluation instrument. The items were not altered to preserve validity and reliability, thereby maintain uniformity with the university-wide data set. Hence, the data obtained from the surveys was sufficient to meet the purposes of LEX which was of interest to the academics and the university – perhaps less to the students who were encouraged to complete the survey for improvements during and after the course. Unquestionably the LEX survey items were not designed to understand the outcomes of an Australian funded aid program to develop leadership capacity of the 18 participants. It certainly did not capture the benefits experienced by a group of international students who had distinct learning styles, and values and cultures quite different to the mainstream on-campus students studying similar units. Furthermore, it did not fully capture an appreciation of the diverse contextual applications and outcomes that were significant to the participants. Seeing the inadequacies of LEX, the authors adapted the MSC technique to supplement the LEX data. The use of this technique was fully supported by the university as well as the students' employer – the department of education of their country.

Data collection and analysis

It was important that all students understood the theory and application of MSC. Accordingly, in the third semester (of four) they learned these not only for the purpose of the evaluation, but also to add MSC to their repertoire of evaluation techniques. Data was collected from individual interviews, two reflective essays and focus groups. Stories on

the Most Significant Change were collected from purposive interviews during semester 3 and focused around three questions:

1. What positive or negative changes have you observed in you and your working life during the time that you have been studying for the Master of Education degree?
2. Which of these changes do you consider to be the most significant?
3. Why do you consider it to be the most significant?

Each interview lasted about 20-30 minutes and was recorded on digital video. The conversations were transcribed for analysis. Using an inductive approach suggested by Tesch (1990) and Creswell (2008) text segments from each participant's interview and were coded and analysed to narrow these into common themes. First the data was coded independently by two analysts (first author and a research assistant), using the NVivo software. The codings were compared and discussed to reach an agreed set of codes before analyzing the data and comparing the two sets of analysis. The independent analysis here is analogous with the peer review process that Lincoln and Guba (1985) recommend. Given that the first author is originally from the Pacific region, her general knowledge and understanding of the cultural and social contexts, and values contributed to the interpretation and explanation of the findings.

Two reflective essays, guided by the three questions, were collected at the end of the final two semesters. The students were able to reflect on and assess their own learning as they completed their essays. The first set of reflective essays were coded and analysed using a process similar to that used for the interview data. Then, the two sets of analysis (of the interviews and reflective essays) were compared before merging to condense the list of most significant changes experienced by the students. This approach of corroborating evidence from different sources reflects triangulation and counteracts threats to validity (Berg, 1995; Glesne 1999; Creswell, 2008; Gibson & Brown, 2009).

The findings were then presented to separate focus groups of ten standards officers and eight education planners. This served three purposes: first, for member check as recommended by Glesne (1999); second, for verification of major themes; and thirdly, for further shortlisting of the most significant changes. Limited guidance for discussion was provided by the moderator (second author) to allow for the free-flow of discussion and debate over 30 minutes. The standards officers and education planners were separated to establish if the most significant changes effected their roles in different ways. The whole group of 18 was then called together for final discussions on a short list of most significant changes and explanations on why these were significant. The research assistant and the second author took notes during the focus groups. Finally, the second reflective essays were coded using the same codes as the first, and analysed in a similar manner. The data reaffirmed the list of significant changes drawn from the focus groups, and first essays so no new codes were required. Moreover, the second reflective essays confirmed the existing list.

Findings and discussion

The students listed an overwhelming number of significant changes that were positive with only a few negative changes. The final short-list of most significant positive changes were reported in six areas: increase in self confidence (89 references); change as a person (63 references); recognition and respect by others (33 references); ability to make more informed decision making (24 references); engaging others more than before (19 references); and now accepting others' views (11 references). Interestingly, none of these mention the learning objectives of the course or achievement of their Masters degree as the goal. Negative changes that were considered significant by the students were: envy (5 references); increased workload (3 references); and lack of recognition/appreciation of the 'new leaders' by a few work supervisors (3 references). According to the students the potency of the positive changes minimized the impact of imminent negativity.

Of the six most significant changes experienced by the students, the most fundamental of all was a boost in their self confidence which led to major transformations within oneself which in turn stimulated and facilitated changes in other areas.

Most significant change – self confidence
The sample attributed an increase in confidence to initial responses from their peers, supervisors and the community. This inspired them to openly engage in conversations, to gather and share information. They are now able to participate in meetings and events without fear, as well as challenge current thinking by asking critical questions. One student related this as follows:

Well the positive changes is [sic] *my bosses now have a high regard for me. Yes. Because then I can speak confidently in meetings. I can contribute. I can share some of the knowledge that I acquired during my course of study with them. So they tend to appreciate that.* [P10]

The women in the group seemed particularly confident, as noted in the stories by participants 09 and 06.

It has given me the confidence as a lady, a female leader amongst all men to take on any challenges that may come. [P 09]

Being a female as well, working with all the males, I don't have the guts to talk and I don't have the guts to really display myself as a leader, but after going through and after studying all this I think I have the courage to do so now… Yeah, so I can beat the men. I don't care who those men are, I can still work to beat them... I can make some strategic decisions; to have strategic thinking and then make some strategic decisions about the plans or the whole operation of planning in that system. [P 06]

Although the Pacific students expressed a degree of surprise about their levels of confidence, from the academic team's perspective this was an expected outcome of the course. The knowledge and skills have boosted the leadership capacity of the entire group and empowered them with enhanced capabilities.

The way we can think and what we know has moved from one level to another. We can speak with some command because we have the knowledge power behind us. It's really helping us. [P 05]

The cohort agreed that each person underwent a significant self transformation, as explained by a student:

I'm a changed person… I do not talk like the way I used to talk. I do not think like the way I used to think. [P04]

Indeed this was largely a result of critical reflective exercises embedded in the entire course and a distinct dimension of the first study unit when they critically reflected on personal and professional theories about knowledge and learning in professional educational contexts. This was the first time they engaged in such an exercise which increased an awareness of themselves as leaders and how best to lead and supervise staff in order to achieve better outcomes under the reform agenda for education in their country.

Increased self-confidence and personal transformation not only underpinned the development of a range of knowledge bases, skills and attributes that the leadership capacity building course intended, these also stimulated changes in their perceptions and practices. One student expressed this as a change from his 'old' self to a 'new' self'.

The old me is waiting for things to happen but the new me is taking the initiative to do things, so I think there's been a lot of change in me. [P05]

As described by two students, the transformation translated to a new standing in the students' professional, community and family circles.

This made big change in the way I do things, even in my family people are respecting me more than before. Even when I walk to the village - when I walk to the village I am respected as someone big in the department or something. [P02]

When you're at my college, people who know me, they're beginning to respect me… they've seen a change in some of the things I used to do as we leading…, changing what we are doing… I'm trying to do some things with an extra ordinary way of getting things done. [P08]

These statements are not surprising because leaders and learned persons are highly respected and valued in Pacific cultures, and given higher status in the community. With such elevation come expectations of role modeling, high performance and delivery- all well known to the students who were expected to demonstrate changes as they completed their post graduate degree. Hence self transformation was anticipated.

For the women in the group the course has enhanced their placement in a male dominated society. The explanation by one of the women from a remote province reflects the views of four others from similar regions:

As a woman in a society where male dominance is entrenched, sometimes you can hardly find a place to raise your voice or find an identity in the place of work. But I think I have grown to a certain degree where I can stand up and put out the voice there and even I have the support of my training inspectors… Now that I'm doing my masters, they are looking at me as if I'm an important person and I think that's an advantage for me… the

principal advisor is - he realises that I'm around... He has never invited me to attend a senior's sectional meeting, but this year he has invited me to go to the meeting. [p04]

These statements offer rich evidence of respect for women – an equity issue embedded in the national education reform agenda that students are familiar with. Although of significance to the student and their country, the conventional evaluation tools failed to capture such impact of the leadership development course.

Over the course of the study the participants' perceptions of leadership expanded and they no longer felt constrained by local cultural expectations to solve all the problems because they were the leaders. A change from old to new leadership practices was related by two students:

I've always thought leaders to be somebody who goes out and give instructions to people and tells them what to do and things like that. But with this course I began to understand myself as not somebody in authority all the time to go and give instructions, but I'm someone who is to go and give, facilitate new ideas things like that... I have to make the people understand that these things can improve their work, so they have to transform themselves. [P01]

Before I took up this program – the Master's program – leadership, to me, was just about myself – doing things myself. Did not have much wider knowledge of what leadership really was. After the program, I began to realise that leadership is not one person, but a lot of people, working together, to make a lot of difference. That I applied in my workplace by getting the inspectors to get – to plan together, work together, more of a teamwork approach of our projects. [P07]

Another consequential outcome of self transformation was a greater awareness of the need to treat others with dignity and respect, and the importance of getting people to work well together. As leaders the students began to apply the theories around leadership, supervision, team work and value the importance of listening and considering other people's problems and concerns, and give people opportunities to show what they are capable of. Notably, they began to openly engage with diverse staff and stakeholders and accepted others' views to work in partnership and achieve better results. This type of engagement and consultation for change management for reforms in education is highly recommended by Kotter (1995). Not surprisingly, the inclusive approach also leads to more informed decision making. They now have greater appreciation of responding to others in helpful and supportive ways, and the need to inspire and support others in order for them to promote and accept change. In the main they not only challenge themselves, but also their staff to try out new and innovative ways to work.

The self transformation described by the students is not surprising, particularly when they had not engaged in formal learning for some time and now felt rejuvenated. However, their energy and enthusiasm would remain short-lived unless their workplace cultures support and resource not just the creation of new and imaginative approaches, but also facilitates implementation (Schein, 2004). Otherwise things revert to old practices and become the norm, consequently limiting the scope of reforms needed by the country. The participants who gained the declarative, procedural and conditional knowledge (Biggs, 2003) from the course, have a good grasp of local knowledge and are well enculturated

into the work contexts, are also best positioned to know what will or will not work. Above all, they (not the researchers) have a better idea of what is significant.

Although self transformation underpins the achievement of the six course objectives and is most significant to the students, its impact on increasing self confidence, enhancing recognition and respect by others, fostering ability to make more informed decision making, and better engaging others was not captured through conventional evaluations of teaching, learning content and delivery approaches. The MSC technique draws attention to the importance of self transformation for leadership capacity building. The findings from the technique stress the importance of fostering self transformation as a fundamental outcome of leadership training.

Conclusions

While the reported changes experienced by students offer some evidence of outcomes relating to the collective objectives of the course, the details behind the transformation and its significance to the individuals and to leadership in the Pacific country would not be known without using the MSC technique. The technique has served well three advantages listed by Davies and Dart (2003). First, it has clearly identified the values that prevail in the cultural, workplace and community contexts of the students. Second, the technique has encouraged students to critically evaluate the changes they experienced and explain which were most important. Third, their stories have delivered a richer picture of the immediate impact of the course. However, the data reflects the views of only the students. Although strongly recommended by Denzin (1988) and Glesne (1999), other stakeholders were not engaged in the evaluation so the wider impact of the course remains unknown.

The findings suggest that the adapted MSC technique forms a useful tool for gathering qualitative data for a comprehensive evaluation of capacity building courses. It extends beyond conventional data to highlight the social benefits of education and training programs. The tool offers potential for practitioners to add MSC to their repertoire of evaluation techniques and tools.

Acknowledgements

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