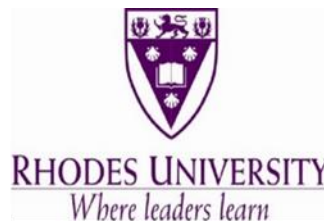




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Higher Education and Training  
REPUBLIC OF SOUTH AFRICA



## Research Chair for M&E in a SETA Environment: Project 9

### DELIVERABLE 2: TRAINING MATERIALS

<b>TITLE OF RESEARCH</b>	<i>Project 9: Develop a Capacity Development Programme</i>
<b>CONTRACT NUMBER</b>	<i>475.4710.644</i>
<b>START DATE</b>	<i>23 July 2018</i>
<b>END DATE</b>	<i>01 March 2020</i>
<b>CONTACT DETAILS (PROGRAMME MANAGER):</b>	<i>Prof Eureta Rosenberg (Research Chair)</i> <i><u><a href="mailto:E.Rosenberg@ru.ac.za">E.Rosenberg@ru.ac.za</a></u></i>

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## Purpose of Project 9: Develop a Capacity Development Programme

This project, part of the Research Chair for M&E in a SETA Environment, aims to develop and implement a capacity development programme for SETA representatives (research and M&E staff) using, and supporting the use of, the outputs of the other 8 projects undertaken by the M&E Chair.

Based on consultation with SETAs and an interview with DHET and the NSA, the purpose of the project as outlined in the Research Plan (August 2018) is refined below.

Consultation with SETAs (workshop convened by Collaborative Research Working Group Secretariat) indicated that a number of initiatives have already been undertaken to improve M&E in a SETA environment. These have not always been implemented. Research in general is not always implemented. Participants therefore recommended a process of change management to accompany the research undertaken by this Chair, if it is to be more successful than previous initiatives, in making a difference. A change management process could be linked to Project 9, Capacity Building. It could involve introducing the recommendations resulting from the other 8 projects (e.g. new M&E frameworks or guidelines) to SETAs over time, with opportunity for them to engage, give feedback, consider and comment on the implications, and generally prepare the ground for the recommendations to take root within the SETA environment, and bear fruit. This needs to be a co-construction process, with both researchers and SETA stakeholders learning from each other.

Change management is ideally less a process of consultants coming in to 'manage' organisations to change. It is ideally more a process of consultants and stakeholders together preparing the ground for agreed-upon organisational change to take root, and bear fruit. We could call this 'change support'.

In the consultation with the NSA and DHET (group interview) Dr Thabo Mashongoane and Dr Hersheela Narsee mentioned a planned post-graduate diploma in M&E (to be offered by the School of Governance) and suggested that the content generated by the SETA M&E Chair in this initiative, be included in the new course. Therefore, a more formal training component ('long short course') is also envisaged, along with a more informal and inclusive 'change management' or rather 'change support' process. The two could be linked, as described in the Curriculum Framework for the Capacity Development project (below).

In summary the purpose of the capacity development project would be to:

- Involve SETA representatives in the refinement of M&E resources in a way that builds the participating individuals' and the SETAs' capacity (praxis)
- Familiarise SETA representatives with the M&E frameworks and guidelines produced so that they can confidently use them and guide others in their use, and where relevant, adjust them in own contexts
- Provide a *course-activated learning network* in which the SETAs and other roleplayers in the SETA system can work through the challenges of taking on board new frameworks and processes.
- Share the training material content and implementation lessons learnt with wider audiences.
- Promote SETAs as learning organisations in the national PSET and international contexts.

In keeping with the purpose of the Research Chair for M&E in a SETA Environment, capacity building must enable SETAs to be accountable to their stakeholders and in equal measure, to learn from M&E in order to increase their positive impact within their sphere of influence. This project is an opportunity *to develop an aligned, implementable M&E framework that sees PSET as a system and supports systemic and institutional learning as much as organisational accountability.* The capacity development project and training materials produced within it, should ideally be broad enough to be also used in a future PSET landscape.

## **Curriculum for the Capacity Development Project (Course Component)**

### **Intended Participants**

Participation in the course and the learning network intended to emerge from the course, will be open to research and M&E representatives of all SETAs. It is possible and perhaps ideal for more than one person from any one SETA to attend, as this may make it easier for new initiatives to be introduced and embedded in the workplace (the learners' home SETA). Participation could also be opened, with motivation, to colleagues who work in the SETAs environment, but are staff in another entity e.g. in DHET. All participants should be from government; ideally at a graduate level; and with some background knowledge of and experience in M&E.

### **Limitations of the Course and How to Address Them**

It is unlikely that everyone who needs the capacity to understand, manage, guide and implement new M&E frameworks and tools in a SETA environment (the outcomes of the other projects) will attend the course, or attend it in full, given how busy SETA employees often are, especially at particular times in the year. Other consultative meetings that would form part of the change support process, while they will hopefully be well attended, will be shorter and not suitable for developing an in-depth understanding. The resultant gaps in capacity can be addressed by making materials and tutorials available on line and to run the programme regularly as an annual accredited 'long short course'.

### **Intended Learning Outcomes**

1. Technical competencies – develop knowledge and skills to:
  - Design and/or commission monitoring and evaluation frameworks and plans
  - Choose suitable methodology for specific evaluation questions
  - Draw up a theory of change
  - Design M&E instruments for quantitative and/or qualitative data
  
2. Relational competencies – develop knowledge, skills and attitudes to:

- Manage the implementation of an M&E plan / evaluation
  - Resource the implementation of an M&E plan
  - Communicate about key aspects of M&E including purpose and suitable design and methodology
  - Use M&E instruments to gather quantitative and/or qualitative data from stakeholders.
3. Transformational competencies – develop knowledge, skills and values to:
- Envisage suitable ways of doing M&E in a post-school context
  - Introduce a new M&E process in an organisational context
  - Implement a new M&E process in an organisational context

## Approach to Capacity Development in Project 9

In this project, capacity development will not be based on a deficit model. That is, we will not assume that participants have no relevant knowledge. Instead, we will follow a *constructivist* adult education approach. Course participants will have some prior knowledge and starting assumptions about M&E in a SETA environment, because they have had some exposure either to M&E, or to working in a SETA environment. Facilitators will draw out and draw on learners' existing understandings, at the same time determining whether some starting assumptions have to be 'un-learned', e.g. when people have only narrow (positivist) framings of M&E. The course will be based on general *adult learning principles* and is likely to include strategies like 'each one, teach one' and peer learning, including facilitators co-learning with SETA staff.

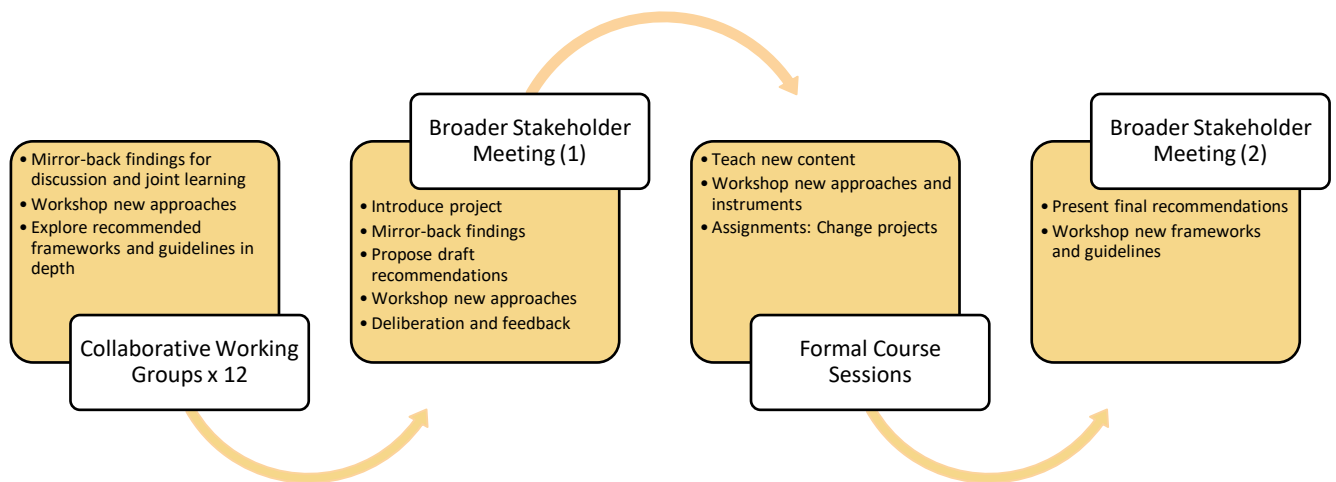
Secondly, we will assume that much of the available technical information about M&E is useful, but that we need *generic M&E content complemented by customised content* that is developed specifically for this context, including its transformative intent, and that participants need more than technical know-how.

Thirdly, since efforts to improve the performance of the post-school education and training system, and the performance of M&E in a SETA environment have been made before, we know that solutions are not sitting 'ready-made' on a shelf, simply to be delivered in a course; addressing systemic problems will require an ongoing and collective process of learning. Here we draw on the theories and models of *social learning and expansive learning* developed by Arjen Wals, Heila Lotz-Sisitka, Etienne Wenger, Yro Engeström and others, which are in turn informed by the work of Lev Vygotsky. Such learning is iterative and facilitated by the 'course-activated learning network' design described below.

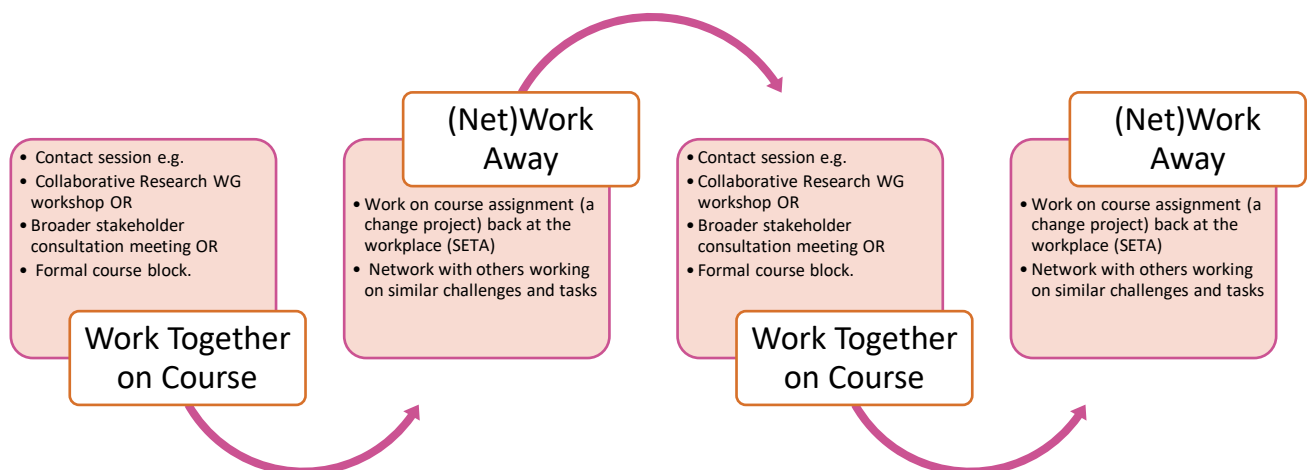
Finally, we will draw on the *action-reflection* tradition for professional development and learning in adult education contexts (promoted e.g. by Donald Schön and Steven Kemmis among others), and set assignments constituting change projects customised to the learner's particular organisational context, in which learners try out an innovative M&E approach and reflect on its application in their chosen change project.

## Proposed Process

The proposed process from the project management point of view is as follows:



The process from the point of view of a SETA participant in the course activated learning network is:

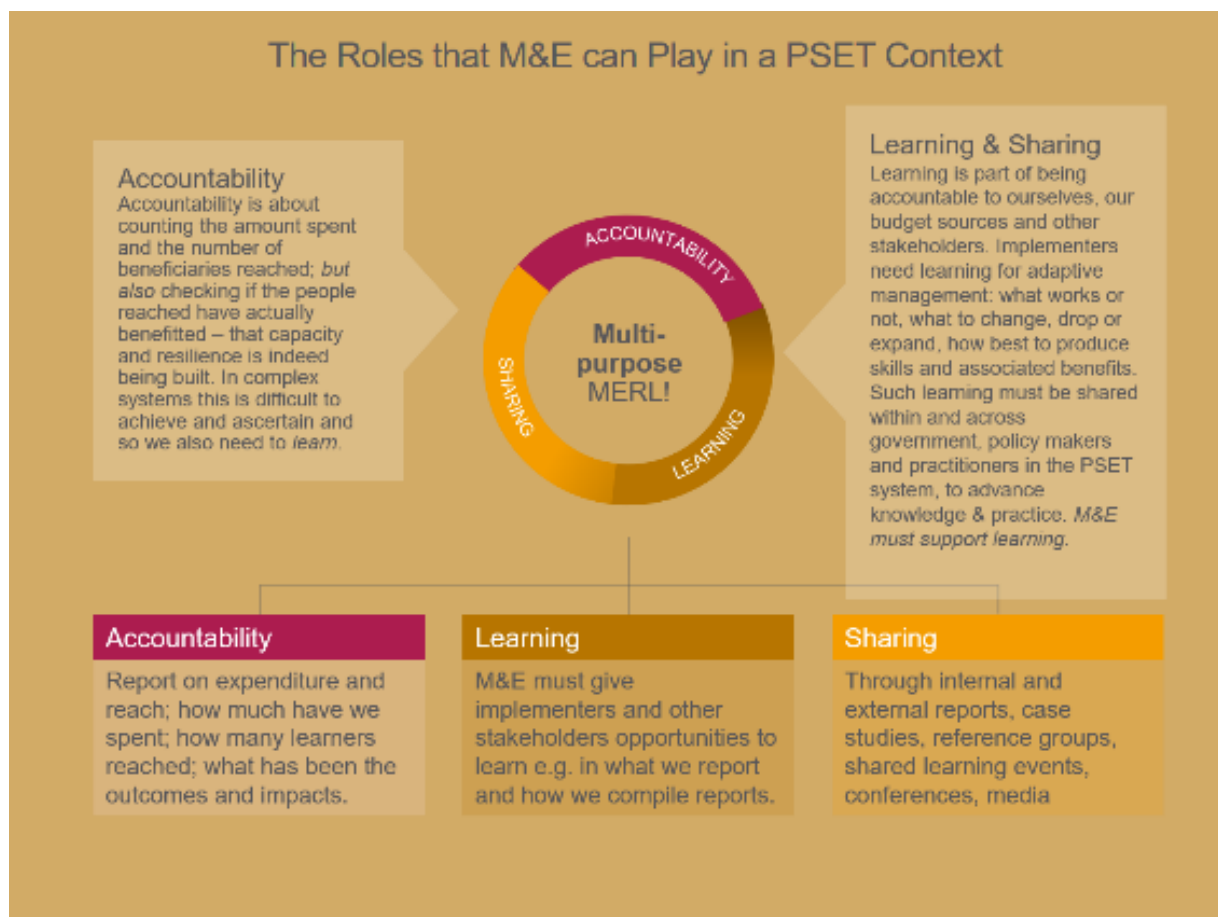


# Capacity Development / Training Materials for SETA M&E

## 1. Purpose and Scope of M&E in a SETA Environment

Before embarking on the design, implementation or evaluation of an evaluation, the purpose(s) needs to be very clear. Consider the following purposes commonly ascribed to evaluations, and how each applies in the context of post-school education and training generally, and SETAs specifically:

- Accountability purposes (accounting for resources received)
- Learning and development (at project or programme level)
- Learning and development (at organisational level)
- Learning and development (at national or international system level)
- Decision-making (e.g. should a particular intervention be continued or not)
- Communication and Promotion, Advocacy
- Formative and Summative evaluations



Discuss: Why would we want to share evaluation findings? How best to do so?

## 2. Types of Evaluation and Basic Concepts in M&E

The OECD defines an evaluation as: “a systematic and objective assessment of an ongoing or completed project, program, or policy, its design, implementation and results”.

- What is meant by systematic?
- How can evaluators be objective?
- Give examples of projects and programmes in PSET contexts
  
- What is being assessed? We can assess ...
  - Activities, outputs, different levels of outcomes and impacts
  - Efficiency
  - Effectiveness
  - Quality
  - Relevance
  - Sustainability

Define each of these standard evaluation concepts and terms (refer to Sida, 2004) with a PSET example.

Evaluations can also involve the examination of performance against appropriately defined standards, an assessment of actual and expected results, and the identification of relevant lessons (Sida, 2004).

How is evaluation different from monitoring?

MONITORING	EVALUATION
Continuous or periodic	Episodic, ad hoc
Programme objectives taken as given	Programme objectives are assessed in relation to higher-level goals or to the PSET problem to be solved
Pre-defined indicators of progress are assumed to be appropriate	Validity and relevance of pre-defined indicators are open to question
Tracks progress against a small number of pre-defined indicators	Deals with a wide range of issues
Focus on intended results	Identifies both unintended and intended results
Uses mostly quantitative methods	Uses qualitative and quantitative data
Data routinely collected	Multiple sources of data
Does not answer causal questions	Provides answers to causal questions, explanatory answers
Usually an internal management function	Often done by external evaluators

**Table: Comparing Monitoring and Evaluation. Source: Sida, 2004, p.11**



TYPICAL QUESTIONS	EXAMPLE, REPHRASED AS EVALUATION PURPOSE	TYPE OF EVALUATION
What is the current situation and root cause of the problem?	To assess unemployment in South Africa and the root cause of the problem	Diagnostic
Is the logic of the intervention design robust and likely to work?	To review the likely success of the design of the intervention on SETA offices at TVET Colleges	Design
Is the intervention being implemented as specified (and in some cases are the outcomes being achieved), and why?	To assess whether an enterprise development programme is being implemented as specified and intended outcomes achieved, and to explain the performance	Implementation
What is the programme progress and outcomes thus far, and what are the next steps?	To assess the progress and outcomes of the short course in M&E performing after its first year of implementation, and recommend whether any changes should be made during its second year of implementation	Developmental / Formative
How have beneficiaries' lives changed as a result of the intervention?	To assess whether the reskilling programme is leading to sustained impacts on the levels of education and employment for the retrenched workers	Impact
What are the costs in relation to the benefits? Is the programme providing value for money?	To assess the costs in relation to the benefits of internships of six months' duration, compared to internships of 12 months' duration.	Economic
What is the evidence from all evaluations related to the topic in question?	To assess what is emerging from all evaluations undertaken on public entity governance and the implications for future SETA governance	Synthesis
What is working well for whom, under what circumstances and why?		Theory building

**Table: Core Questions (Purposes) for Different Types of Evaluation. Adapted from: DPME Evaluation Guideline 2.2.1, 2016, p.3**

### 3. Orientations to Evaluation and the Premises of Realistic Evaluations

Evaluation is a form of research. Historically, different orientations to research and evaluation have applied and today there are, in different fields, differing and often strongly contested views of what ‘proper’ evaluation is about and how it should be done. Research design is informed by different philosophies. These philosophies have ontological and epistemological components. Ontology involves philosophical assumptions about reality (what exists). Epistemology involves philosophical assumptions about credible (believable) knowledge (such as evaluation findings).

In a *positivist approach* to research and evaluation, only that which can be empirically observed and preferably measured, is regarded as real. Everything else is regarded as ‘made up’ or constructed and ‘not real’. A philosopher of science, Roy Bhaskar, called this a shallow epistemology, because possible deeper layers of reality, which can’t be observed, but may still exist, is ignored as ‘not real’. In a positivist approach to research, the methodology for producing knowledge (including evaluation findings) is based on a scientific experimental approach that is easiest to apply to the non-social world e.g. crop production in agriculture. Although randomised trials similar to agricultural experiments are regarded by many as the ‘gold standard’ for social evaluations, others regard this approach as not suitable for a social context.

Critics have argued that in the bio-physical world, evaluations can be done in closed systems. Bhaskar (1978, 1989) has asked: “What must the world be like for experimentation to be possible?” When an experiment is set up to determine the effectiveness of (for example) organic fertilizer for the production of mealies, researchers can compare two batches of identical mealies with and without the addition of the fertilizer. The researchers can control the variables like time, light, water, temperature and soil that the growing mealies are being exposed to, and they can make sure the mealie plants are identical at the start, to the point of cloning them from the same seed stock. That way they can make sure that any improvement in the growth and yield of those mealies exposed to the fertilizer, in comparison to the control group which does not receive fertilizer, can be attributed to the intervention, i.e. the fertilizer.

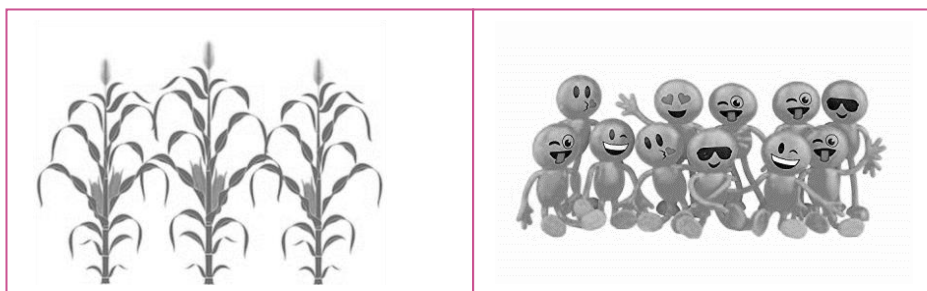
However, in the social world (of which PSET is part) the subject of study or evaluation (people) are never as simple as a mealie plant, and social systems like PSET are never as closed as a crop production experiment. Consider the complex and ‘radically open’ nature of a learning programme for interns working in a greenhouse laboratory for experimenting with mealies. While the mealie plant might be a *simple* system, the greenhouse laboratory with various controls is a *complicated* system, but if one knows how everything works, it can be managed with a set of instructions that never need to vary, because things work ‘like clockwork’ (as in a Newtonian view of the universe) in the physical set up of the laboratory.

*Complex* systems, on the other hand, are neither simple nor complicated. They are complex because they are radically open, involving very many variables that interact with each other in ways that can give emergence to unpredictable outcomes. Consider the interns working in the greenhouse laboratory. Unlike cloned mealie plants, they would be quite different from each other, even if they come from the same cultural, educational and socio-economic backgrounds. They would still have different personalities and family backgrounds. In many internship programmes, the learners differ considerably from each other in terms of such ‘variables’, which then influence how they respond to the programme on offer.

That is, the success of the programme offered to interns will not only depend on the programme (the mentor(s), materials and activities), but also on the interns themselves. Many mentors know this and make changes, big or small, to meet the differing needs of different interns, in the same programme, and in the same programme offered from time to time. Thus, to know whether the internship programme is a success, one would have to take the different contexts of the learners into account, as well as the different strategies used by the mentors, to know “what works for whom, and under what circumstances”.

To add to the complexity, changes in people as a result of learning programmes cannot be as easily observed as the growth in a mealie plant, which can be measured with a ruler. Learning and the development of new competencies can to some extent be observed, but often one has to rely on reporting by the interns or their mentors. This brings into play the (sub)consciousness of the human being. Unlike mealies, people can exaggerate, under-report, misunderstand, mis-represent, forget, fake, and intentionally or unintentionally distort situations when they complete questionnaires or speak to an interviewer. Mostly, they simply try to present the best case scenario, leaving the evaluator to deal with the ‘double hermeneutic’ of social science.

### **PLANTS VERSUS PEOPLE!**



The positivist orientation which tends to treat people like plants and programmes like fertilizer, has alternatives. One alternative is *the constructivist orientation*. It values people’s constructions, like perceptions, feelings and understandings as a valid basis for generating evaluation findings. Fourth generation evaluation and some participatory methodologies are examples of constructivist approaches to evaluation. A limitation of this orientation is that, if the evaluation’s conclusions are entirely based on the participants’ ideas and feelings, it can be relativist and hard to conclude. What if different participants contradict each other? What if they contradict other evidence? For example, the interns or their mentors may *feel* or *say* that the internship has made them competent to run the laboratory, which could be contradicted by ‘hard’ evidence that every time an intern is in charge, the laboratory’s water pumps break down.

Evaluation findings can be hard to believe or trust if they are based on a constructivist (or post-structural) ontology and epistemology which implies that there is no real truth, only perceptions, and that evaluations of human activities by other humans can only be subjective.

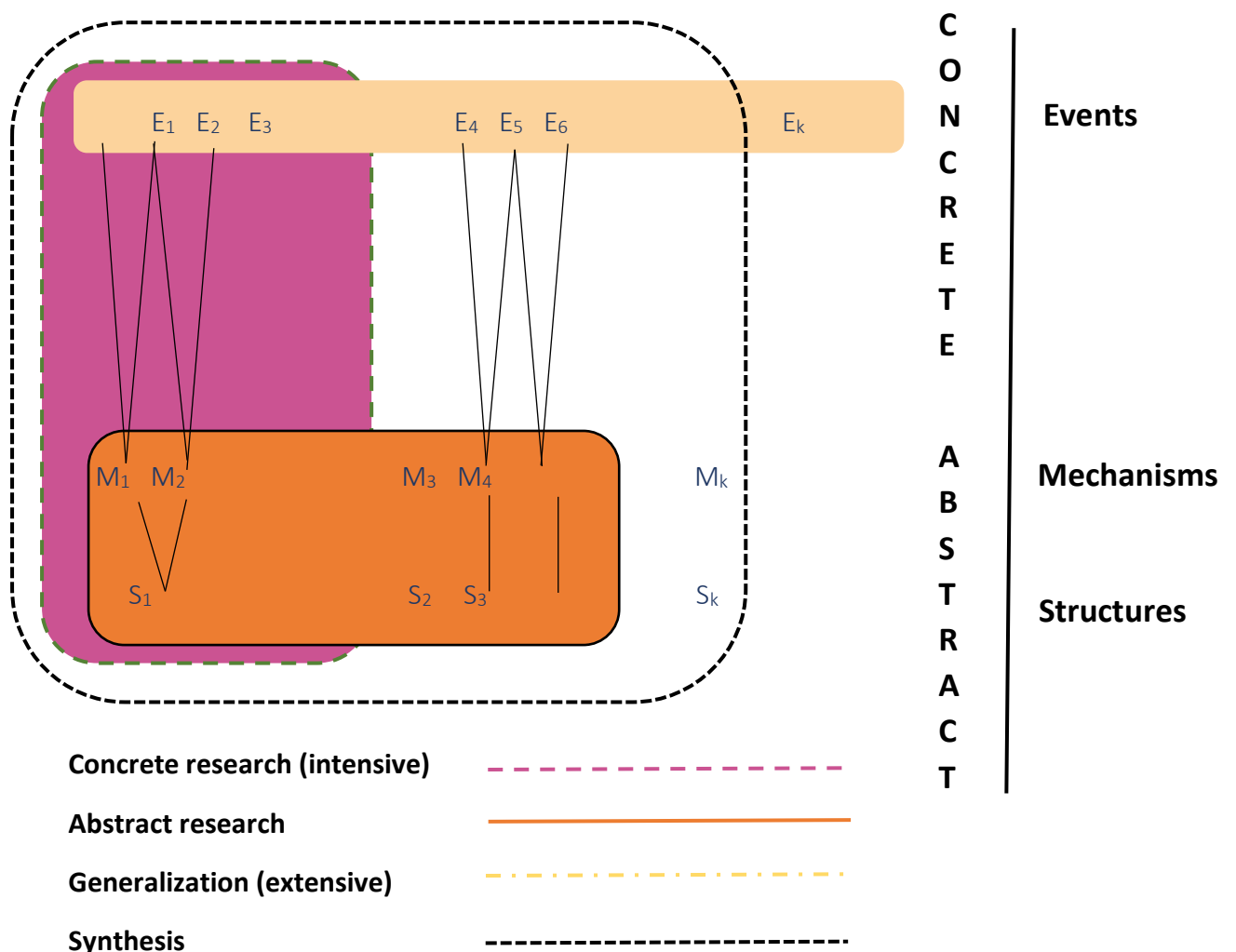
*A realist approach to evaluation* overcomes these limitations, because it takes both people’s constructions, and other evidence, into account, to achieve a form of objectivity (see figure by Sayer, below).

A realist ontology (Bhaskar) is layered. It argues that there is an empirically observed layer of reality (the laboratory pumps are broken – this can be observed) and beneath that, deeper layers of reality

that may or may not be accessible to our understanding. These layers are the Real and the Actual. The intern on duty may have real competence (a potentiality) to run a laboratory, but what actually transpires on a given day, may or may not be competence. She may have had bad news rendering her unable to apply her competence, so that she actually acts incompetently and breaks the pumps.

What is the evaluator to make of this evidence? Sayer argues that researchers need to look for the empirical but also the deeper layers of reality, which can be found in people's constructions (e.g. the interns' or mentors' explanations) and the mechanisms (in a programme) which either trigger or fail to trigger the actualisation of real potential.

**Types of Research.** Source: Sayer, A. 1984/1992. Problems of Explanation and the Aims of Social Science. In *Method in Social Science: A Realist Approach*.

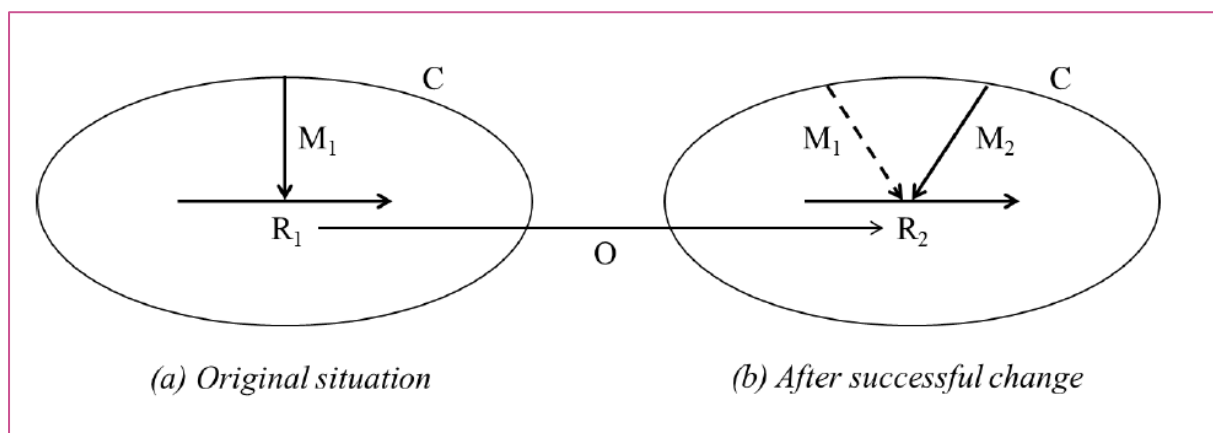


*“Realist evaluation has adopted for its explanatory focus, ‘what works for whom in what circumstances’ (Pawson and Manzano-Santaella, 2012: 177). Such an explanatory focus seeks to understand the workings of social programs and evaluations of their operational successes and failures for various interest groups functioning in a certain context. Where methodology is concerned, implicit within such a focus is a social theory about individuals being in society – how individual and society are related and the possible interactions between them that might bring about or hinder change in the social context of interest. Realist social theory provides an explicit, though rather challenging framework for this social interaction that realist evaluation can draw on.” (de Souza, 2013)*

Realistic Evaluation (Pawson and Tilley, 1997) draws on realist theory and offers a number of useful tools for evaluative work. (Pawson & Tilley, 1997): 71) summarise social enquiry as follows:

*The basic task of social inquiry is to explain interesting, puzzling, socially significant regularities (R). Explanation takes the form of positing some underlying mechanism (M) which generates the regularity and thus consists of propositions about how the interplay between structure and agency has constituted the regularity. Within realist investigation there is also investigation of how the workings of such mechanisms are contingent and conditional, and thus only fired in particular local, historical or institutional contexts (C).*

They go on to consider the “vexatious matter of social change” (ibid: 72). Here they note that social systems have an ‘open system’ nature (Bhaskar, 1979)” (Pawson & Tilley, 1997: 72). The aim of social intervention programmes (such as PSET) is to replace some prevailing, problematic social regularity (R1) – e.g. unemployment - with another, desirable regularity (R2) – e.g. high employment levels. The shift from R1 to R2 represents the outcome (O) of an intervention. The initial regularity (R1) is sustained by the mechanism (M1). In order to bring about change, a programme must transform or overturn M1 with the new mechanism M2.



*Realist depiction of change. Source: Pawson and Tilley, 1997*

This can be summarised as “causal outcomes follow from mechanisms acting in contexts” or (C)ontexts+(M)echanisms=(O)utcomes. Realist evaluators construct explanations around these three elements while also recognising variations in patterns of outcomes. Realist Evaluation methodology provides a way of explaining the relationship between the context within which projects take place, the underlying mechanisms for bringing about change, and the outcomes. This CMO configuration is often used to explain ‘what works, for whom in which contexts and how’.

## 4. Systematic Review/Evaluation

Systematic reviews or evaluations summarise the findings of other evaluations that have studied a particular question. It asks the question: What is the evidence from all evaluations related to this question? For example, if a SETA wants to know whether mentoring increases the employability of interns, one would review the findings of all studies which have evaluated the impact of mentoring on interns' employability. The purpose is synthesis, using secondary data. As a form of meta-evaluation, systematic reviews are therefore aimed at making the most of available knowledge – what is already known?

A systematic approach is taken to identify, select and map the studies/evaluations to include in the review, and to collect *and analyse data from the included studies*. This is where systematic reviews differ from literature reviews, which do not involve further analysis, and are not restricted in what they include in their review. Statistical analysis (meta-analysis) may be used to analyse and summarise the results.

When they are done thoroughly, systematic reviews are time consuming and require big teams to complete. Deciding on the scope is vital. Two different meta reviews, with two different scopes, can come to opposite conclusions. For example, in the 1960s, Smith and Glass (an educational psychologist) asked whether psychotherapeutic work makes a positive difference. They reviewed more than 1000 studies and concluded that yes, it did. At the same time, a group in Social Work asked the same question, also did a review, and concluded that no, it did not. The difference was in the scope of studies included in the two reviews.

Clegg (2005) argued from a realist perspective that systematic reviews are often based on a narrow (positivist) interpretation of what counts as credible evidence. Often only studies based on the “gold standard” of the randomised control trial / experiment are included. Such studies try to eliminate contextual influences through the use of control groups. Yet context can be extremely important in determining whether an intervention (such as mentoring) ‘works’ in terms of increasing interns’ employability, or not.

Another problem lies in how the findings from the different studies are synthesised. When they are simply added up or aggregated and analysed for statistically significant, quantitative differences in outcomes, the conclusions can be less than useful. For example, 100 evaluations of mentoring can show a very significant *improvement* in employability of the interns in those studies (due to the nature of the mentoring, the interns, or context, or both), while 100 other evaluations of mentoring under other conditions may show only a slight increase or no change in the employability of interns (again because of features of mentoring, interns or context). If the 200 studies are simply aggregated, the systematic review will conclude that: “mentoring makes very little difference”. Then one ignores that under some conditions, it does make a big difference. Clegg argues that in education, the nuances and influences of many variables must be taken into account, so findings are “non-cumulative” and require interpretation by experts in the field, rather than statistical summation.

A more useful approach to systematic reviews would be to first articulate a programme’s theory of change (why and how would mentoring make a difference) and then test or review the outcomes of the *mechanisms* associated with mentoring and interns’ employability in different contexts. At the end of such a review one could hopefully conclude whether a particular mechanism ‘works’ according to studies, for whom (what kinds of interns) and under what conditions (contextual influences). [Cross reference to *Orientations to Evaluation* and *Theories of Change*.]

## 5. Programme Logics, Theories of Change, and Indicators

After the purpose of an M&E process has been established, one has to decide *what to monitor and evaluate*. Often a log frame is used for this purpose. The basic structure of a log frame (logical framework) is as follows:



Figure: Simple log frame example

The programme logic in this example is as follows: If SETAs make an *input* in the form of bursaries to educators in the school system, educators will achieve PhD degrees (an *output*), and obtaining the degree will have the *outcome* of them being motivated and knowledgeable educators, which in the long run will improve the learning outcomes from the students in the school system, the ultimate *impact* intended by the bursaries.

How valid is the *programme* logic of the bursary scheme in the log frame example? The schooling and teacher education (PSET) systems intersecting in this example are complex; and interventions to improve the outcomes of schooling are often complex. Many variables influence learning outcomes in schools, including governance, socio-economic profiles of learners, teacher: learner ratios, resources; and more, along with teachers' knowledge and motivation (which influence, e.g., the time they spend teaching). These variables – and how they may interact with the bursary scheme – cannot be captured in a simple log frame.

This is one reason for concerns about how suitable the simple programme logic captured in the standard log frame is for the design of M&E for complex projects, programmes and systems such as those featured in PSET. Funnel and Rogers (Australia and New Zealand School of Government) argue that the programme logic should match the degree of complexity in a system, and that alternatives to simple log frames should be considered.

Referring back to earlier modules, discuss the differences between simple, complicated and complex systems.

Type of System	Example	Suitable Programme Logics
Simple	Plants growing in a greenhouse under controlled conditions	Simple log frame
Complicated	Apparatus used and maintained to control variables in a greenhouse	Expanded log frame or linear outcomes maps or results framework



<b>Complex</b>	Running an PSET programme e.g. internships, bursary schemes	Non-linear outcomes maps and results frameworks, consisting of flow diagrams and narratives
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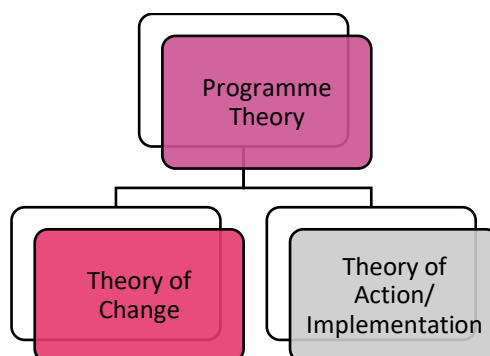
Table: Comparing Simple, Complicated and Complex Systems and Appropriate Programme Logic Frameworks

Other criticisms of the standard linear log-frame, is that complex interventions in complex systems are often not linear; multiple inputs lead to single outcomes, outcomes can reinforce each other in positive feedback loops, and so on. Furthermore, log-frames often assume large leaps from outcomes to impacts, and fail to explain many of the interim steps or preconditions that need to be in place, for impacts to be achieved. Non-linear results frameworks and outcomes mapping are attempts at overcoming the limitations of log-frames.

Why is it important to map out ideas about why interventions are going to work?

Perhaps the designers of the programme logic in the PhD bursary example found that in countries with high learning outcomes in their schooling system, there are also high levels of PhDs among educators. The assumption might then be that if we increase the number of PhD degrees among SA teachers, we would also have high learning outcomes. But what if the causal relationship is the other way round? Or perhaps there is no causal relationship between # of educators with PhDs and high learning outcomes in schools, and the observed correlation is based on other variables? The intervention logic in countries with highly successful schooling systems might be to (1) identify highly motivated and academically strong students at the end of schooling, and (2) incentivise them with bursaries, etc. to become teachers; (3) to further support them during teacher education studies to remain motivated and academically engaged, and then (4) to put them into a well-functioning, well-resourced education system where they will be able to produce good results with learners. These academically strong, motivated educators in a well-resourced, well-functioning system may have the time and inclination to do PhD studies – which would then be a perhaps be a *result* of the selection process and context in which they work, rather than the *cause* of their good learning outcomes.

Documenting the ideas about why and how an intervention like a selection process or a bursary scheme for educators is going to work, and all the assumptions involved, is an increasingly popular process called mapping the programme theory. Carol Weiss along with Pawson and Tilly have argued that any programme evaluation needs to start with mapping the programme theory.

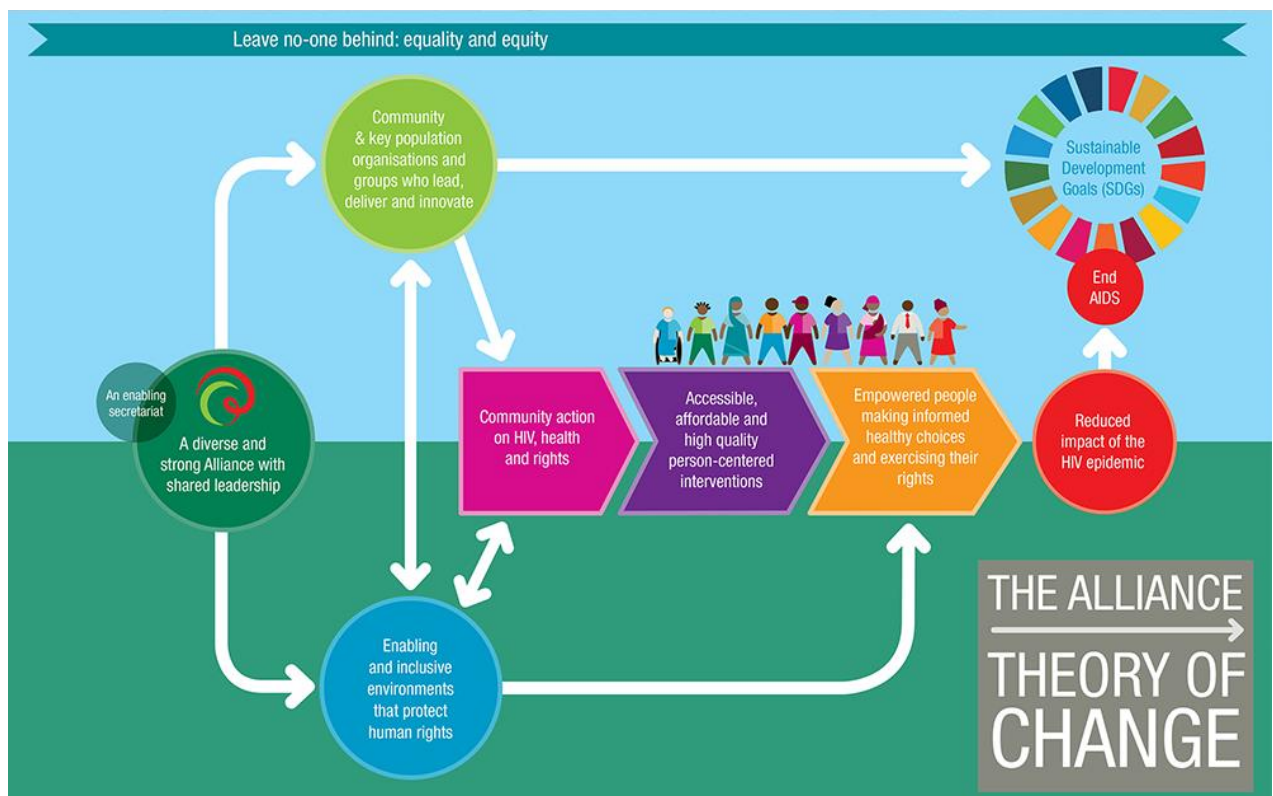


A programme theory consists of two components, the theory of change (what is the desired change and why certain inputs and processes will result in this change) and the theory of action (how programme implementers are intending to achieve this change). Here we focus on the theory of change.



Articulating a programme’s theory of change (which is often unarticulated) has two purposes for evaluation: It allows the evaluators to decide what needs to be evaluated (which is then captured, e.g. in evaluation tools like indicators); and, it allows for the testing of the theory itself, which has significant benefits for the programme implementers and for future programme design. Theory testing (testing whether higher qualifications make for better teachers, or whether more mentoring results in greater employability) is an important purpose of evaluation in a realist orientation.

Realist evaluations are also known as ‘theory-based evaluation’. They have very practical outcomes, as they are able to explain “what works for whom, under what circumstances, and why”, which put SETAs in a position to decide where to invest funds. Realist evaluation websites such as [www.betterevaluation.org](http://www.betterevaluation.org) offer tools for developing theories of change, and as alternatives to simple log frames, such as non-linear results frameworks and outcomes mapping.



How to Develop a Theory of Change (adapted from [www.KeystoneAccountability.org](http://www.KeystoneAccountability.org) and Fäkligt)

*Step 1: Describe the programme’s vision of success*

What would things be like if the PSET programme has been 100% successful? What would we see? This is a short but specific picture in worlds of the sustainable future that we wish to help bring about. The vision of success should describe real people, real relationships and institutions.

For the bursary example, the ETDP SETA might have this vision: “Practising South African teachers in rural, urban and township schools are motivated to teach, knowledgeable about the subjects they teach and use high pedagogical skills to help 100% of South Africa learners to achieve international benchmarks for literacy, numeracy and thinking skills”.

“In the impact planning, assessment and learning (IPAL) method, the process of developing a theory of change is an exciting and often liberating process of interaction and discovery that helps organisations see beyond their familiar frames and habits (even if these were quite effective), understand the full complexity of the change they wish to see, and imagine new solutions in dialogue with others. The theory of change unfolds through a facilitated process of open inquiry and dialogue. Participants may hold different views and perspectives, but should share a broad commitment to change. The more the group reflects the voices of all constituents, the richer the dialogue is likely to be.”

#### *Step 2: Map the preconditions of success*

What needs to happen to make this vision a reality? For each element of the vision, identify all the prior changes that may be necessary if the vision of success is to be realised – not just what the ETDP SETA can do on its own. Out of this a set of preconditions of success will emerge. Note these are not activities or inputs; rather the interim results or conditions that are needed along the way towards the achievement of the vision. They may be: for teachers to be knowledgeable, they need to be qualified at a graduate level; to be motivated they need to be both committed to education, and satisfied with workplace conditions; for learners to achieve at school, more than just good teachers must be in place. These other conditions should also be identified.

#### *Step 3: Map the system*

Map the system in which the ETDP SETA works. Ask: Where are we now, in relation to this vision and preconditions of success? Which other roleplayers are involved in working on these preconditions of success? Which forces may be working against this? How is the intervention (bursaries) fitting in with the rest? Universities are already working towards qualifying teachers, so the SETA may decide to implement the bursary scheme through universities with a strong track record in graduating teachers.

#### *Step 4: Fill in Detail and Relationships*

From Step 3, select and map out the preconditions that this intervention (the bursaries) will be addressing, and link them. A drawing is useful here, with arrows linking preconditions with each other and with the intended vision. Spend time to interrogate each of the assumed connections.

Does obtaining a degree, make teachers more pedagogically skilled? Why? Fill in any missing preconditions identified at this stage. For example, if degree studies are to make South African teachers more pedagogically skilled, pedagogical knowledge relevant to South Africa conditions should be part of their curriculum and for this to be achieved, such knowledge needs to be generated. The availability of relevant pedagogical knowledge is therefore another precondition.

At this stage, and throughout, check that preconditions/results/outcomes are being mapped, rather than activities. The question to ask is: what must be in place/achieved, rather than, what must be done.

*Step 5: Insert the Intervention, Complete the Theory of Change Diagram and Write an Accompanying Narrative*

Insert the intervention in the form of inputs into the map. The Theory of Change graphic, which can take many forms, can serve as an outcomes map, with the different levels of pre-conditions identified as initial, intermediate and long-term outcomes, all leading to an impact equal to the vision statement.

The outcomes map is often non-linear, with more than one precondition or outcome leading to other preconditions / outcomes, and some outcomes reinforcing others. The multiple dimensions of the intervention can more readily be depicted in this map, than in a linear log frame. For example, making PhD bursaries available contributes to both the presence of knowledgeable educators (who gained knowledge by conducting PhD research), and by the availability of new research findings, relevant to a South African context, which benefit both these and other teachers.

*Step 6: Check again all assumptions and make adjustments where necessary*

Are all the assumptions valid? What has been left out? Would teachers with PhDs go back into the classroom, for example? Are they not more likely to become teacher educators? Perhaps they can still contribute to the desired vision, but through an intermediate step of improving teacher education (rather than classroom education) with their increased knowledge? Does the data support all these assumptions? What if highly qualified teachers are more likely to leave the education system altogether, because they can find better paid work and more job satisfaction in other sectors? What should be added to the intervention, to make sure the PhD graduates do contribute to the intended outcome of better learner results?

*Step 7: Add Indicators for Evaluation*

Finally, the Theory of Change is ready to be used for evaluation purposes. (Clearly, it can also be used for SETAs' strategic planning.) For each of the preconditions / outcomes / intended results along the pathway(s) to impact, choose an indicator that will indicate whether that condition/outcome/result has been achieved.

## Working with Indicators

TYPES OF INDICATOR	USE	EXAMPLE
Input indicator	To monitor whether inputs have been provided.	Amount spent on bursaries; number of bursaries awarded
Short-term outcome indicator	To evaluate whether intended short-term or initial outcomes have been achieved	Number of educators studying towards a PhD in Education
Intermediate outcome indicator	To evaluate whether an intended intermediate outcome has been achieved	Number of educators graduating with a PhD in Education
Long-term outcome indicator	To evaluate whether an intended long-term outcome has been achieved	# of educators with a PhD in Education in the school system
Process indicator	To monitor the quality and relevance of processes	Sharing of research findings in teacher education, educator conferences, accessible publications

Impact indicator	To evaluate whether the intended outcomes are achieved.	% increase in SA learner performance in international benchmark tests
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*Table: Some types of indicators with examples*

Evaluators use different kinds of indicators, based on where in the programme logic they are used, or the evaluation purpose or focus, e.g. efficiency, sustainability or impact. The following serves as an illustration of what is meant by indicators. The list of types of indicators in the Table is not exhaustive.

The examples in column 3 show that indicators are often quantitative in nature, i.e. we determine whether they have been achieved, through quantitative measurement. This is one of the main limitations of indicators, because several important outcomes or preconditions cannot be easily measured on a large scale, e.g. teachers' motivation, or even how skilled or knowledgeable they are. In such cases proxies are used, such as how long they stay in the system, or how well they do on a test, but teachers may leave the system for reasons other than motivation, and although they may do well on a test, this might not be a good reflection of how effective they are in a classroom. Indicators are always proxies, i.e. they approximate or simply indicate whether particular outcomes or impacts have been achieved.

We have other ways of knowing, besides measurement. An experienced educator can walk down the passage and into the staffroom of an unfamiliar school, and tell us whether the teachers here are generally motivated, or not. Such 'expert' ways of knowing based on experience are however not always reliable, and they are hard to quantify and therefore aggregate to develop a composite picture across the whole system. This is one of the main reasons for the pervasive use of indicators for large scale or system level M&E. DHET has produced a list of indicators for the PSET system.

Complex systems require very many indicators if they are to be comprehensively tracked and evaluated. To be able to use indicators across contexts, indicator protocols are drawn up, containing a definition for each indicator, and guidelines on exactly how and when to collect the data are necessary, if such data is to be comparable and suitable for aggregation.

The exclusive use of indicators is sometimes problematic because it assumes that the pathways to impact are exactly known, to a point where we know exactly what to monitor and evaluate along the way. In complex contexts like PSETA, particularly where they intersect with other systems like the economy, or complex organisations, it is often difficult or impossible to predict exactly how change is going to unfold. Expect the unexpected! Indicators are pre-determined, and hence they do not capture the unexpected. Other M&E methods, like process tracking, process narration, case studies to identify emergent pathways to change, should be used to complement indicator based M&E.

## **6. Developmental Evaluations, Activity System Analysis and Participatory Evaluations**

### **Developmental Evaluation**

Developmental evaluations are undertaken during the lifespan of a project to help shape and improve a long term programme or policy implementation as it unfolds. The aim is to have a better

process in order to have better results. Quin Patton (2010) argued that developmental evaluations are suitable for complex contexts when it is not entirely clear at the start how best to achieve the intended outcomes and impacts. The developmental evaluation changes in nature and focus throughout the lifespan of the programme or policy implementation. For example, at an early stage it may not be possible to have any indicators; later it may become clearer what preconditions are essential to track and evaluation, and what would be good indicators for this purpose.

## **Expansive Learning and Activity System Analysis**

Given how challenging PSET is, some believe there is a need to go beyond descriptive evaluations (what is wrong) and explanations (describing why) to action-oriented evaluations that support transformation (learning our way into what could be). Yro Engeström has sought, through Cultural Historical Activity Theory (CHAT), to support qualitative change through what has been termed expansive learning.

Building on the work of Lev Vygotsky, Engeström suggested that ‘developmental work’ features interactions between individuals and systems (such as places of learning and work) in which one finds a range of mediating artefacts that he called tools and signs, rules, and divisions of labour. Within these complex activity systems, there are often internal contradictions and it is these contradictions that are the driving force of learning, change and development. This framing is useful for developmental evaluations that aim to support social and organisational learning. It takes complex social structures within specific historical settings as the basis of analysis for social learning and change. CHAT has the potential to stimulate learning, agency and transformation through the contradictions that emerge in and between activity systems in the context of real structures such as employers, training providers and SETAs.

CHAT provides tools for probing the context and underlying mechanisms in activity systems. In particular, the “triangular” representation of activity systems provides a way of analysing the different spaces within which actors encounter “disturbances, ruptures, conflicts and other unclear symptoms of an underlying inner contradiction in the activity system” (Virkkunen & Newnham, 2013).

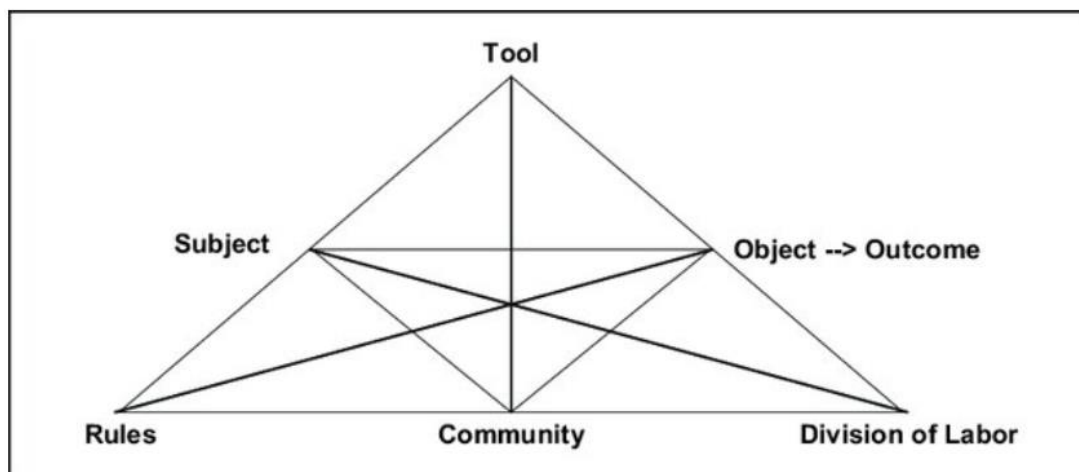
A significant challenge when seeking to bring about social change is to ‘get to grips’ with the underlying mechanisms that both maintain and have the potential to change regularities in particular contexts. This is challenging work and all too often projects or change initiatives revert to responding to the immediately visible elements and problems rather than working at the level of the invisible systemic structures and mechanisms that maintain them. Pawson and Tilley (1997, p.65) provide a useful metaphor for this process:

*“We can never understand how a clock works by examining only its face and the movement of its hands; rather we examine the clockworks, and so a proper understanding requires us to master the construction of the balanced spring or the oscillation of caesium atoms.”*

The following figure illustrates the difference between more superficial change interventions and the problem solving processes supported by critical realism, realist evaluation, CHAT, expansive learning and change laboratories.

Focus	Problems	Solutions
Invisible systemic structure of the collective activity	2. Disclosing the systemic causes in the visible problems in the activity. ↑	3. Finding ways to overcome the problems by expansively reconceptualising the idea of the activity. ↓
Immediately visible elements and problems in individuals' action in the joint activity	1. Identifying the obvious (visible) problems.	4. Taking new kinds of actions: implementing new instruments, rules, ways of dividing labour and collaborating. →

*Change Laboratory and Problem Solving. Source: Virkkunen & Newnham, 2013: 10*



*Elements of an Activity System for Analysis. Source: Engeström*

This content will be further developed in partnership with Project 2: Evaluation of Enterprise Development in a Township Economy (to hopefully come on stream in early 2019).

## Participatory Evaluations

Example: The Most Significant Change (MSC) methodology or technique (Davis and Dart, 2005) is a form of participatory monitoring and evaluation. It is participatory because many project stakeholders are involved both in deciding the sorts of change to be recorded and in analysing the data. It is a form of monitoring because it occurs throughout the program cycle and provides information to help people manage the program. It contributes to evaluation because it provides data on impact and outcomes that can be used to help assess the performance of the program as a whole.





A panel of designated stakeholders discuss "significant change" stories emanating from the field and define what the "most significant change" is. (©Rick Davis and Jess Dart)

#### When to use:

- Program evaluation.
- Organizational review and evaluation.
- Building community ownership through participatory evaluation.

#### How to use:

The process involves the collection of significant change (SC) stories from the field level, and the systematic selection of the most important of these by panels of designated stakeholders or staff. The designated staff and stakeholders are initially involved by 'searching' for project impact.

Once changes have been captured, various people sit down together, read the stories aloud and have regular and often in-depth discussions about the value of the reported changes. When the technique is successfully implemented, whole teams of people begin to focus their attention on programme impact.

MSC does not make use of predefined indicators, especially ones which have to be counted and measured. It is a narrative approach – the answers to the central question about change are often in the form of stories of who did what, when and why, and the reasons the event was important.

The following ten steps are typically included in the MSC methodology:

- Raising interest at the start.
- Defining the domains of change.
- Defining the reporting period.
- Collecting Significant Change stories (in spoken form if participants are not highly literate).
- Selecting the most significant stories (a participatory process for deciding on the criteria is vital).
- Feeding back the results of the selection process.

- Verifying the stories.
- Quantification (how many participants regard this story as the MSC).
- Secondary analysis and meta-monitoring.
- Revising the system.

Discuss features of participatory evaluations, starting with the MSC example.

In participatory evaluations,

- All relevant stakeholders are identified beforehand
- Stakeholders participate in determining what should be evaluated, and why
- Stakeholders participate in the collection of data (not just in providing answers)
- Stakeholders participate in the analysis of data and drawing of conclusions.

What are the advantages and disadvantages of participatory evaluations?

Are participatory evaluations possible in a SETA environment?

## 7. Cost Benefit Analyses

- What CBAs are and why they are popular
- Examples of how they are used
- Comparison to Return on Investment studies
- The limitations of conventional CBA methods
- Multi-variate CBAs
- Online tools to use

This component of the materials will be completed as the CBA Tool Development (Project 4) is completed.

## 8. Tracer Studies

This component of the course materials will be completed as the Tracer Study Protocol (Project 5) is completed. The content here needs to include the protocol guidelines developed by Prof Mike Rogan, senior researcher in the M&E Research Chair programme, as the latter is aimed at enabling SETAs to do comparable tracer studies across sectors. Being able to do comparable tracer studies across sectors will allow for more diagnostic explanatory work (what works for whom, under what circumstances) with the benefit of multiple comparable studies, and for SETAs, DHET and other roleplayers to combine data for a fuller picture of the PSET system.

At the same time as SETAs need to be familiar with the Tracer Study Protocol being developed, course participants also need a broader understanding of Tracer Studies, where they are being used and for what purposes; what their limitations may be; and what the different approaches to tracer studies might be.



## 9. Data Collection Methods and Instruments

### Asking Questions

A variety of instruments or tools are used for collecting data. These are generally customised for each particular M&E purpose and process, but some general rules apply to help evaluators obtain useful, trustworthy data. One set of these rules apply to the way in which questions are asked. The following ‘questions about questions’ apply when drawing up interview schedules and especially, questionnaires.

WHEN FORMULATING QUESTIONS, AVOID	EXAMPLE
Leading questions: Does the way in which the question is phrased, lead the respondent to answer in a particular way, regardless of what they actually think or feel?	<i>“Do you agree that the mentoring you received helped you to get a job?” vs “Choose the answer that applies to you: Mentoring helped me to get a job: Strongly agree, Agree, Unsure, Disagree, Strongly disagree”.</i>
Double-barrelled questions: Does the question ask two things in one? Which will the respondent answer?	<i>“Do you find the local government’s mentoring programme good and affordable?”</i>
Unnecessarily sensitive questions: If sensitive information is needed, how best can it be obtained?	<i>“What do you think of your mentor?” may be an insensitive question to an intern; also consider how people from different backgrounds may perceive questions</i>
Unnecessary questions: Is this question absolutely necessary for the study? Will it make the questionnaire or interview unnecessarily long?	Should people state their sex, income, marital or religious status in a study on unrelated matters?
Vague questions: Respondent are likely to be unsure of how to interpret it; different respondents will interpret it differently, making analysis difficult.	<i>“Do you often use ICTs during the learning programme?” VS “Choose the answer best matching your situation: I use ICT’s in the learning programme “never / every day / once a week / once a month / less than once a month”</i>
Ambivalent questions: Does the question have a double-meaning? Which would the respondent answer?	<i>“Do you think this project is a good initiative?” YES/NO Respondents may think that it is a good idea to have the project, but not necessarily that the project itself is good, making the question impossible to answer</i>

### Choice of Data Collection Tools

The Tool	Its Strengths	Its Limitations	How to compensate
<b>Questionnaires</b> The same set of structured questions is mailed out or administered in person or online to a <u>group</u> or groups, who write down their responses. The	Especially when mailed out or distributed at venues, one can reach a large number of people and get a global overview of many people’s	Answers must be easy to collate and make sense of especially if the groups are big; so they are usually ‘closed’ questions (rather than open-ended), short and	Combine questionnaires with individual interviews to get a deeper understanding of what members of surveyed group(s) think.

<p><i>method</i> is called a survey and the questionnaire is a survey <i>tool</i>. When questions are administered to individuals who give the answers, this is usually called an interview.</p>	<p>views. Comparison across groups is possible. The data is more readily quantified and subjected to statistical analysis.</p>	<p>quantifiable. This is not always suitable if one wants to find out about more complex things. It can be difficult to interpret answers especially if you made a small mistake in how you asked the question. People tend to interpret questions in different ways. Response rates can be low.</p>	<p>First try out questions in pilot interviews, then design and pilot questionnaires. Also try out the analysis, before administering them to large groups, to reduce the chances of asking the wrong questions, or asking the right question wrongly. Link questionnaires to what people are already doing, e.g. they can fill them out while sitting in a waiting room.</p>
<p><b>Interviews</b></p> <p>An interviewer asks a set of structured or unstructured questions to individuals. The interviewee gives verbal answers which are recorded for analysis later.</p>	<p>In an interview one has a chance to explain questions and build rapport to encourage full and honest answers, and to probe for an explanation for unexpected answers.</p>	<p>Interviews are more time consuming than surveys using questionnaires, and data may also take longer to analyse.</p> <p>Interviewees may give answers simply to please the person asking the questions.</p>	<p>To avoid evasive answers, make a connection with the interviewee and explain why the information is needed; where relevant assure the interviewee that their answers will be confidential and anonymous (and ensure this is the case)</p>

<p><b>Focus groups</b></p> <p>This is a form of group interview, like a talk show with a group of people all responding to the same question. A facilitator encourages, directs and structures the conversation.</p>	<p>Some people are more comfortable speaking in groups and can encourage each other to be more open. You can collect a diversity of views and experiences in a shorter space of time.</p>	<p>There can be peer pressure to <i>not</i> open up to questions. A lot of information can be forthcoming that can be hard to analyse. Not all of it may be relevant to the question, as the discussion can go off in many directions.</p>	<p>Choose participants carefully and set the scene to encourage honesty. Get the balance between informal conversation and some structure (<i>focus</i>). Record responses so they can be analysed afterwards.</p>
<p><b>Observations</b> The evaluator visits a training facility or attends a programme activity and makes notes of what she sees, usually using a check list to guide what to look for.</p>	<p>Seeing what actually happens in a training programme or facility can be vital to complement statistics. Also useful in the early stages of an evaluation, to give ideas on what should be evaluated through other means.</p>	<p>It can be different to interpret what you see; e.g. are participants having fun and learning, or just fooling around? The presence of an observer can influence programmes negatively e.g. learners may act out or withdraw; trainers may become nervous.</p>	<p>Observer needs to be very unobtrusive and/or build a relationship with the group; in participatory evaluations observations members of the group do the observations themselves. Complement with interviews or member checking on the</p>

			interpretation of what is observed.
<p><b>Document analysis</b></p> <p>Documents such as registers, minutes of meetings, course reports, curriculum documents, teaching materials, etc. can be analysed for the information they contain either directly or indirectly.</p>	<p>You can access a lot of information quite quickly, including historical information that can be important for understanding the present.</p>	<p>The original purpose of the document may limit its value if your purpose is very different; one may misinterpret information; some contextual factors may not be evident from the document itself.</p>	<p>Interview the authors who produced the documents to understand the context and purpose.</p>
<p><b>Tests</b> Learners answer a set of questions, in writing or verbally. While a questionnaire asks them for their opinions, beliefs, or to report on their actions, a test is a test of their knowledge, what they know.</p>	<p>If well designed, tests can give useful information on how learners understand or mis-understand something; which can be useful for evaluating and designing programmes.</p>	<p>People often find tests intimidating. It takes time to design a test well. They usually only test factual recall; if deeper understanding is tested, they can also be time consuming to mark and analyse.</p>	<p>Help respondents to feel comfortable about tests. As with questionnaires, pilot the questions beforehand and be sure how you will be using the information.</p>

## 10. Putting it all together: Practical Implementation of M&E Plans

### Steps in the Implementation of M&E

#### 1. Initial considerations

- Scope the stakeholders (a stakeholder analysis may be necessary, or not)
- Define the purpose of M&E with selected stakeholders
- Establish an M&E management entity (e.g. SC)

#### 2. Preparation of tasks

- Review the intervention or process that is to be evaluated or monitored
- Define the questions that the evaluation should answer; For monitoring, identify and define indicators
- Assess feasibility, i.e. the extent to which these questions are answerable and indicators can be monitored
- Formulate a terms of reference and estimate a total budget
- Recruit or assign evaluators or monitors

#### 3. Inception phase

- Agree on the interpretation of the questions and / or indicators
- Agree on methodology and plan the methods and analysis
- Draw up a work plan and detailed budget and assign tasks
- Develop the M&E tools for data collection and framing or tools for analysis
- Conduct the research (monitoring and/or evaluation)

#### **4. Reporting and dissemination phase**

- Review draft reports with relevant stakeholders
- Revise reports where relevant in the light of stakeholder comments
- Share results with all affected parties, in particular intended users
- Facilitate wider publication

#### **4. Facilitate Use of findings**

- Share and discuss findings with management authorities; facilitate dialogue between potential users
- For monitoring data, consider observed trends and patterns and commission evaluations.

Discuss:

- The role of Reporting
- The role of Reflection
- Resourcing M&E

## **Some Supplementary Materials**

Guidelines on SETA Grant Regulations 2015, DHET

National Development Plan 2030, Presidency, 2013

White Paper on PSET, DHET, 2013

National Plan for the Post-School System, DHET, 2017

DPME Templates and Guidelines (<https://evaluations.dpme.gov.za/pages/guidelines-other-resources>)

[www.betterevaluation.org](http://www.betterevaluation.org)

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<https://www.betterevaluation.org>

## Appendix 1: Project 9 Project Plan

Stage of Research	Activities	Outputs/ Deliverables	Timeframe		Resources Required
			Start	Finish	
1	Finalise Research Plan	Master Research Plan Approved	July 2018	July 2018	Budget for travel during set-up
2	Engage SETAs on their capacity needs and prepare printed, power point and online training materials; record some sessions on video for online tutorials	Training Materials	August 2018	30 Oct 2018	Meeting budgets (travel, catering, venues); design and online learning platform development expertise; videography and video editing facilities
3	Involve SETAs representatives in a capacity building programme	SETA representatives trained	1 Nov 2018	30 Nov 2019	Commitment and time of SETA representatives; meeting budgets (travel, venues, catering)
4	Revise training materials based on completion of programme and broader research programme outcomes; outline book chapters and content	Book Format	1 Dec 2019	1 March 2020	Writing time, access to potential publishers, travel budget
5	Produce and present close out report	Close out Report	1 Feb 2020	1 March 2020	Writing time; travel budget; feedback on draft report; presentation opportunity