Evidence-based supervision

An evidence-in-practice thinkpiece
by Richard Churches, Lina Aghajanian
and Geraldine Hutchinson

Foreword by Colin Penfold

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Foreword

Research into the processes of teacher professional development is a relatively recent field. Very little research existed 30 years ago, with the focus more on understanding teachers' beliefs about practice and practice generally. Yet how can we consider teacher professional growth if we do not first understand the essential features of effective teaching?

There is now considerable research evidence about effective teaching, and a growing body of research into effective teacher education. Some teacher education programmes describe teaching as a *clinical practice* profession.[1] McLean Davies and colleagues suggest that teaching is a *clinical profession* because it requires teachers to 'assess the learning and learning needs of every student and provide appropriate interventions to move that learning forward'.[2] It can also be considered a clinical practice profession because it seems clear that teachers should base their interventions on evidence of what is known to be effective.

Teacher professional growth could be described simply as change in teacher practice, but it is more useful to think about it as a progressive change in knowledge, beliefs and practice. The key question is: what activities and interventions are effective in bringing about change in teachers' knowledge, beliefs and practice? One of the biggest issues in teacher education is the theory-practice gap, which exists in both pre-service and in-service teacher education. Training and other professional development activities may improve teachers' tacit knowledge, but this often does not translate into changes in practice. For example, traditional training courses alone are notoriously ineffective in changing practice. There are many possible reasons for this theory-practice gap: teachers may not understand the theory (evidence) that they have been presented with; they may not understand how to enact this new learning in their practice; they may be or feel constrained by contextual factors such as examination or inspection systems. What we know is that teachers develop knowledge not only as recipients/participants of training, but also through actually teaching and observing others teaching. They also develop their knowledge through interrogating and reflecting on their practice. Consequently, teacher professional development needs to be rooted in their classrooms.

There are many approaches to rooting teacher professional development activities in classroom practice: lesson study, teacher learning communities, teacher video clubs, coaching, observation and feedback, and so on. Clearly where countries have subject-specific supervisors, these can play a vital role in helping teachers to bridge the theory-practice gap. They can be an effective mechanism for helping teachers to learn about the evidence, to enact it in their classrooms, and to interrogate and reflect on their practice.

Colin Penfold
Principal Education Consultant,
Education Development Trust

[1] Burn and Mutton (2015).
[2] McLean Davies et al. (2013: 96).

Part 1 Using evidence to enhance existing education reform

The potential of supervision in the evidence landscape

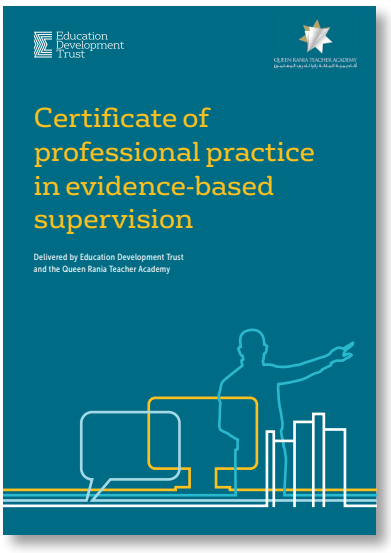
In many countries, Ministries of Education directly employ subject-specific supervisors who work across the school system and provide a middle tier that delivers teacher development, training and policy implementation.[3] These supervisors are usually former teachers of the subjects that they support and often have many years' experience of the context that they are working in. Even though a high proportion of education systems still maintain a supervisory system, little attention has been paid to how they could be improved or developed. Instead, and frequently, the conversation about education reform has centred around the role of the school leader, principal or headteacher.

As important as these roles are, in a world where we find ourselves increasingly focused on evidence from research into pedagogical effectiveness and the translation of evidence from neuroscience and cognitive psychology,[4] it seems unlikely that the leader of a school alone will be able to maintain a fully up-to-date knowledge of that evidence – particularly as subject-specific research evidence grows.[5]

In the same way that supervisory systems within medicine and healthcare maintain and grow leading-edge *clinical practice* – alongside the organisational leadership of a hospital or clinic, so (in turn) ***evidence-based supervision*** **in education might offer an enhanced, robust and complementary means of enabling education reform.**

This thinkpiece discusses an innovative programme designed by **Education Development Trust** and delivered in collaboration with the **Queen Rania Teacher Academy** (QRTA). The programme has been, and is being, delivered to Ministry Supervisors who are **supporting the teachers of around 20,000 Syrian refugee children** across Jordan.

To inform the writing of this report, interviews were conducted in Jordan with students, teachers, school principals, Ministry of Education Supervisors and QRTA.



[3] Arar et al. (2017) and Sallán, Puente and Clavera (2017). [4] Howard-Jones (2010) and Howard-Jones (2014a). [5] Coe et al. (2014)

Evidence in education where are we now?

Debates about the use of evidence in education have emerged strongly over the past decade, as discussed in several of our previous research reports and perspectives.[6] Debates have ranged and continue to range across many questions.

What is the meaning of *evidence-based practice* in education and is it more appropriate to use the term *evidence-informed practice*? [7]

Can medical and clinical models of evidence and practice be applied to teaching and teacher development? [8]

How can the democratic deficit in education, where teachers are merely the consumers of research rather than the producers of that evidence, be bridged? [9]

How can teachers and researchers learn from each other? [10]

What is the role of teacher-researchers? [11]

As well as an increasing recognition of the need to use evidence to inform practice, generally, there has been an exponential growth in our understanding of *educational neuroscience* (*mind, brain and education* in the US). This has included the development of research and journals that seek to lead the way regarding the development of a new field and basis for educational theory.

Neuroscience is to education what biology is to medicine and physics is to architecture. Biochemistry is not enough to cure a patient, and physics is not enough to build a bridge. But you cannot perform great work, neither in medicine nor in architecture, against the laws of physics or biology. And in fact, they will inform you about many constraints and rule out a great many projects right from the start as failures.[12]

Research and arguments that raise other critical questions:

Can educational practice be grounded in the biology of learning? [13]

And if so, how might that be possible?

Despite the questions above, few attempts have been made to take what happens in medical and clinical practice (as much a question of mindset as a research-informed activity) and apply it directly to education.

[6] Churches and McAleavy (2016), McAleavy (2016) and Morris (2009). [7] McAleavy (2016). [8] Burn and Mutton (2017). [9] Dommett, Devonshire and Churches (2018). [10] Jaworski, B. (2001). [11] Riggall and Singer (2016), Churches and Dommett (2016 and Churches, Higgins and Hall (2018). [12] Trends in Neuroscience and Education (2018). [13] Churches, Dommett and Devonshire (2017)

What is *evidence-based practice* in medicine and healthcare?

As one of our early organisational perspectives on evidence in education noted,[14] we tend to think about *evidence-based practice* in medicine as having existed for all time. In truth, the concept is recent and first appeared in the medical literature in the early 1990s. Indeed, as late as 1995, the *British Medical Journal* suggested that:

The relation between science and health services has until recently been too casual. Ineffective treatments have been widely used, and medicine has been opinion- rather than evidence-based.[15]

Since then, the careful trialling of treatments step-by-step to determine their effectiveness with different patient groups has transformed the medical profession, training and supervisory processes. Despite this, it has long been recognised that having the evidence is not enough. Over time, a sophistication mental mindset around evidence has been implemented within the professional. It is this mindset, and the critical reasoning process that accompanies it, that is today commonly referred to as *evidence-based practice*.

Evidence-based practice is more than the simplistic application of treatments based on research findings, it is about 'integrating individual clinical expertise with the best external evidence'.[16] Practically, *evidence-based practice* involves several interdependent stages.

1. Diagnosis (assess the patient)

2. Creating a clinical question to help identify an appropriate treatment

3. Looking at the research evidence, critique it and select a treatment

4. Treatment, involving the patient in the process

5. Evaluation of the effects of the treatment (self-evaluation as a clinician)[17]

In this way, **each patient engagement becomes a form of research project for the clinician.** Alongside this, ***clinical practice* is driven by 'systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.'** [18]

Furthermore, and often overlooked, medicine and healthcare have long sought to move away from a simplistic diagnosis and treatment model and now recognise the central importance of involving the patient in the decision-making process around the treatment that is being recommended (*patient-centred care*).

Patient-centred care not only ensures respect for 'experience, values, needs and preferences in the planning, co-ordination and delivery of care' [19] but has also been shown to improve patient outcomes.[20]

... clinical practice is driven by 'systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances'

In support of such processes, clinicians are given training in coaching and counselling-related techniques, such as *motivational interviewing*. **This technique involves using a guiding style of engagement to help a patient clarify their strengths and aspirations in a way that evokes their motivation to change, while promoting autonomy of decision-making.**[21]

[14] Morris (2009). [15] Smith (1995: 961–962), also cited by Morris (2009). [16] Sackett et al. (1996: 71). [17] Churches, Dommett and Devonshire (2017: 195).
[18] Field and Lohr (1990: 38) [19] Gluyas (2015). [20] Maltais et al. (2018). [21] Rollnick, Heather and Bell (1992) and Morton et al. (2015)

The case for *evidence-based supervision* in education

Discussing the then state of evidence in education in 2009, Morris made the point that:

We would feel badly let down if our building surveyor were merely expressing her personal feelings about the prospects for our damp-proof course…[22]

Today, despite the publication of much quality teacher effectiveness research, 1,071 randomised controlled trials (RCTs) in education (80% of which have found intervention effects),[23] accessible meta-analyses[24] and over 140 RCTs commissioned by the Educational Endowment Foundation,[25] **getting accurate knowledge applied in the classroom still seems to be a challenge**. This challenge is illustrated by recent research into the beliefs of Australian teacher trainees about what are known to be neuromyths in education.[26] In this research, which surveyed 1,144 pre-service student teachers, 97.1% of participants gave incorrect responses about the existence and utility of Visual, Auditory and Kinaesthetic [27] learning styles, despite the overwhelming evidence against such ideas.[28] Similarly, neuromyths appeared to be persisting about 'brain gym',[29] left/right brain learners, super-enriched early environments and the effect of fatty acid supplements.[30]

The reason for such a theory-practice gap cannot just be because of the nature of the teacher training, or the content of the curricula. For many years, 'from 2010 to 2016, all student teachers enrolled at the University of Sydney, Australia, received an introduction to neuroscience that explored key ideas in brain development and learning.'[31]

Rather, there is an emerging picture that seems to suggest that globally we in education have a problem. **Even when the research evidence is clear, established and widely accepted, we seem to lack mechanisms to turn that evidence into consistent 'clinical' classroom practice across a system.**

One of the reasons for this, it could be argued, has been the emphasis on developing forms of educational leadership at the organisational level (headteacher and school principal) and the neglecting of the development of subject-specific leadership across the system. This means that, even when accurate research evidence is passed on during initial teacher training, **there is no systemic way to ensure that evidence is applied in daily practice or to ensure that it is kept up to date**. As Howard-Jones has noted, neuromyths 'flourish when cultural conditions protect them from scrutiny.'[32] Likewise, it could be argued that the same is true of 'edumyths' (ideas about teacher effectiveness that are not supported by the education research evidence).

In contrast, as important as quality hospital administration and health service trust leadership is in the English health service, without other forms of specialised clinical leadership, patient outcomes would soon begin to drift away from the latest evidence. **The process of supervision, in particular, seems to help medicine and healthcare to avoid some of the other underlying causes of the theory-practice gap in education** (for example, not understanding the research, seeing it as academic rather than practical, pressures to ensure academic or inspection success).

Within medicine and healthcare three types of supervision are typically defined:

- **Managerial supervision** – performance review, priority and objective setting, identification of training and continuing development needs.
- **Clinical supervision** – reflection and review of practice, in-depth discussion of cases, the changing or modifying of practice and identification of training and continuing development needs.
- **Professional supervision** – often interchangeable with clinical supervision, is where supervision is carried out by another member of the same profession or group.

[22] Morris (2009: 9). [23] Connolly, Keenan and Urbanska (2018). [24] Hattie (2009). [25] Education Endowment Foundation (2017). [26] Kim and Sankey (2017). [27] An approach that involved the assessment of a child's 'learning style' and the adaptation of teaching to that individual style – both aspects of which have been shown to be invalid. [28] Coffield et al. (2004), Education Endowment Foundation (2017) and Hood et al. (2017). [29] Brain gym consisted of a series of physical movements that were claimed (among other things) to integrate the left and right brain. Such a technique was a neuromyth because both halves of the brain function in a unified way all the time. [30] 86.9%, 86.0%, 83.8% and 68.5% incorrect, respectively. [31] Kim and Sankey (2017: 10). [32] Howard-Jones (2014b: 822).

Again, looking across to our public-sector cousins in medicine and healthcare there is **a structured systematic mindset, supported by institutional processes that aim to take evidence from the laboratory into actual practice** ('From bench to bedside'[33] and the notion of *clinical supervision*[34]). Similar approaches exist across the medical and healthcare professions. Importantly, this is more than a simple top-down process.

In the health professions, newly qualified professionals are systematically encouraged and expected to share their latest knowledge from their training with other professionals, as is the profession as a whole (creating a **'constant teaching environment' around specialised knowledge and the latest evidence**). At the same time, professional bodies ensure that the various specialists are kept informed of changes to *clinical practice* guidance and shifts in the research evidence.

In England, trainee physiotherapists not only learn about the latest research evidence during their university degree course but do 1,000 hours of clinical practice supervised by a qualified practitioner. A nested supervisory structure extends above this once they are employed in a hospital. Qualified physiotherapists enter the profession as a 'Band 5' practitioner, supervised by a 'Band 6' (or substantially more experienced Band 5). These grades are overseen by 'Band 7' professionals, trained to supervise supervisors with a further 'Band 8' level of management and administration. **At all levels it is subject knowledge expertise that is the focus of the supervision.**

A tree begins with a seed
أول الشجرة بذرة

In the summer of 2017 an opportunity arose to expand our existing work in Jordan to include a strand of training and development directly focused on the needs of Ministry of Education Supervisors.

As the conflict in Syria entered its seventh year, access to quality education for Syrian refugees in host communities remained an issue. In Jordan, new teachers had been contracted and Syrian refugees allowed to enrol for free at public schools. About 200 of these schools operated second shifts. Jordanian teachers were faced with minimal resources and the daunting task of integrating students whose learning had been disrupted due to violence in their homeland. Even without the harrowing context of what these children had been through, learning English in Jordan was a challenge for Syrian refugees since English was introduced earlier in the Jordanian curriculum than in the Syrian curriculum.

The rapid expansion of the education system has meant that systematic training for newly appointed teachers is not always possible through the MOE, particularly for those appointed on contract who sit outside of established processes and capacity.

Typically, across counties that have taken in so many additional children:

Public sectors lack needed resources, and educational, health and other services cannot keep pace. Government budgets and infrastructure are increasingly burdened, and funding from the international community does not cover the costs.[35]

- Jordan hosts 656,000 UNHCR-registered Syrian refugees.
- **233,000** of these are **school-aged children** (5–17 years).
- Out of these, 125,000 are in formal education and 68,000 are in non-formal education, leaving 40,000 children out of school (17%).[36]

[33] Horton (1999) and Cowman (2018). [34] Care Quality Commission (2013). [35] Culbertson and Constant (2015: ix). [36] No Lost Generation (2017).

Education Development Trust and the Queen Rania Teacher Academy (QRTA) have been working together since January 2017 to help to ameliorate some of the effects of the influx of Syrian refugees in Jordanian public schools by targeting English language teachers who did not receive adequate training in teaching English. The project uses QRTA's established Novice Teacher Training (NTT) module – an in-service teacher training module designed for Jordanian teachers of English in public schools. It is a five-day intensive programme, aligned with the national curriculum. To ensure teachers have sufficient resources, classroom library books to be used for the project are provided.

Supervisors from the Ministry of Education play a major role in the project, leading innovation and teacher development.

Supervisors from the Ministry of Education play a major role in the project, leading innovation and teacher development. The project develops the supervisors' diagnostic and coaching skills; and trains them on how to deliver the NTT module. Each supervisor is assigned a cluster of five schools and about 10 teachers each to train and support.

It was into this context that we added the ***evidence-based supervision*** model. In summary, the programme includes the following elements.

Diagnosis

- Learning to diagnose cause and effect in relation to teacher practice and giving clear diagnostic feedback (using the process of evaluative judgement from school inspection).[37]

Treatment

- Teacher effectiveness workshops in the latest evidence from education and *educational neuroscience* (including supporting texts and reading materials), to support the selection, adaptation and implementation of evidence-based **'treatments'**.[38] These workshops included the use and distribution of 50 'clinical practice cards' summarising the research evidence from the texts above and wider sources.[39] Supervisors were also trained in the neuroscience and cognitive psychology of learning and memory and the 'desirable difficulties' research evidence.[40]
- Coaching skills to support teacher development and involve them fully in the process,[41] including core principles from *motivational interviewing* (for example, recognising that the person who has the problem is the person who has the answer to solve it).
- Within the practicum component of the programme, supervisors were required to produce three 'best-practice' videos, demonstrating the work of teachers that they have worked with, that are shared to a project social media page and via a popular and free social networking programme.

Evaluation

- Group reflective practice meetings that looked at **Evaluation** data at individual, regional and national level were run through the year.

In this way, the programme seeks to develop the supervisors' one-to-one support skills, so they could take on the sort of sophisticated balance between questioning and telling that is found in *clinical practice* and the supervision of *clinical practice*.

Supervision

- A 'how to supervise supervisors' training programme, which drew on concepts widely applied in medicine and healthcare (such as the 'seven-eyed supervisor'),[42] to support QRTA staff in the running of the programme and managing the practicum and portfolio elements.

The programme ran for seven months between October 2017 and May 2018 and supervisors were required to collect a **portfolio of evidence illustrating their use of the workshop materials and the skills that they had developed**. This included the submission of lesson observation forms, reflections, a literature review writing task and the best practice videos.

[37] Churches and McBride (2013). [38] Churches, Dommett and Devonshire (2017), Coe et al. (2014) and Ko, Sammons and Bakkum (2014). [39] For example, Muijs and Reynolds (2011) and Rosenshine (2012). [40] Bjork and Bjork (2011). [41] Austin and Churches (2009a; b), (2010a; b) and Education Development Trust (2016). [42] Hawkins and Shohet (2006).

Nesting evidence-based practice within the programme

Of course, it must be acknowledged that there is a level at which the medical analogy ends. Most importantly, supervision in medicine and healthcare is conducted by serving practitioners, rather than middle-tier employees managed by the state. In designing the programme, we aimed to focus on an exploration of what might happen were we to apply the same evidence-based processes and ways of thinking to such a tier.

It is also the case that in medicine and healthcare the *evidence-based practice* process would not in itself be normally applied to the development of a clinician by a supervisor. However, as the new teacher was (in a sense) the patient in this context, it was hoped that such a framework would be both a logical way to introduce latest research evidence to a novice teacher (connecting it to their actual classroom practice). In addition, **because the process was explicitly and overtly used, it was hoped that it might ultimately lead the teachers to think more critically and apply the process themselves to their practice; creating a Russian doll of nested evidence in practice.**

Interpretation of *evidence-based practice* within the programme

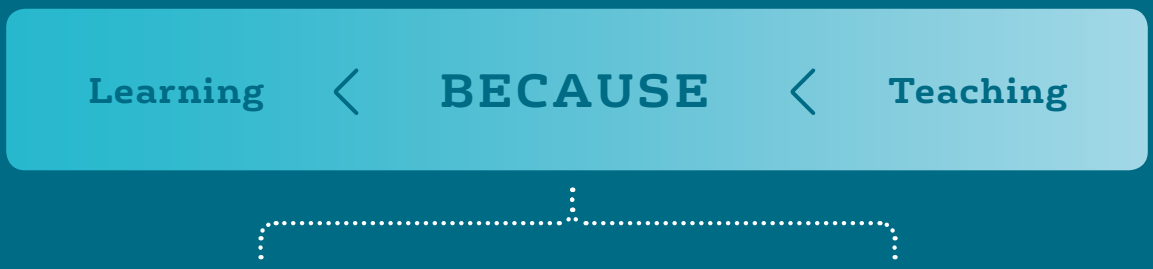
STEP 1
Diagnosis of teachers' needs through lesson observations

STEP 2
Selection of treatments based on the research evidence

STEP 3
Supporting the implementation of selected treatments through coaching teachers

STEP 4
Evaluation of the treatment through lesson observation

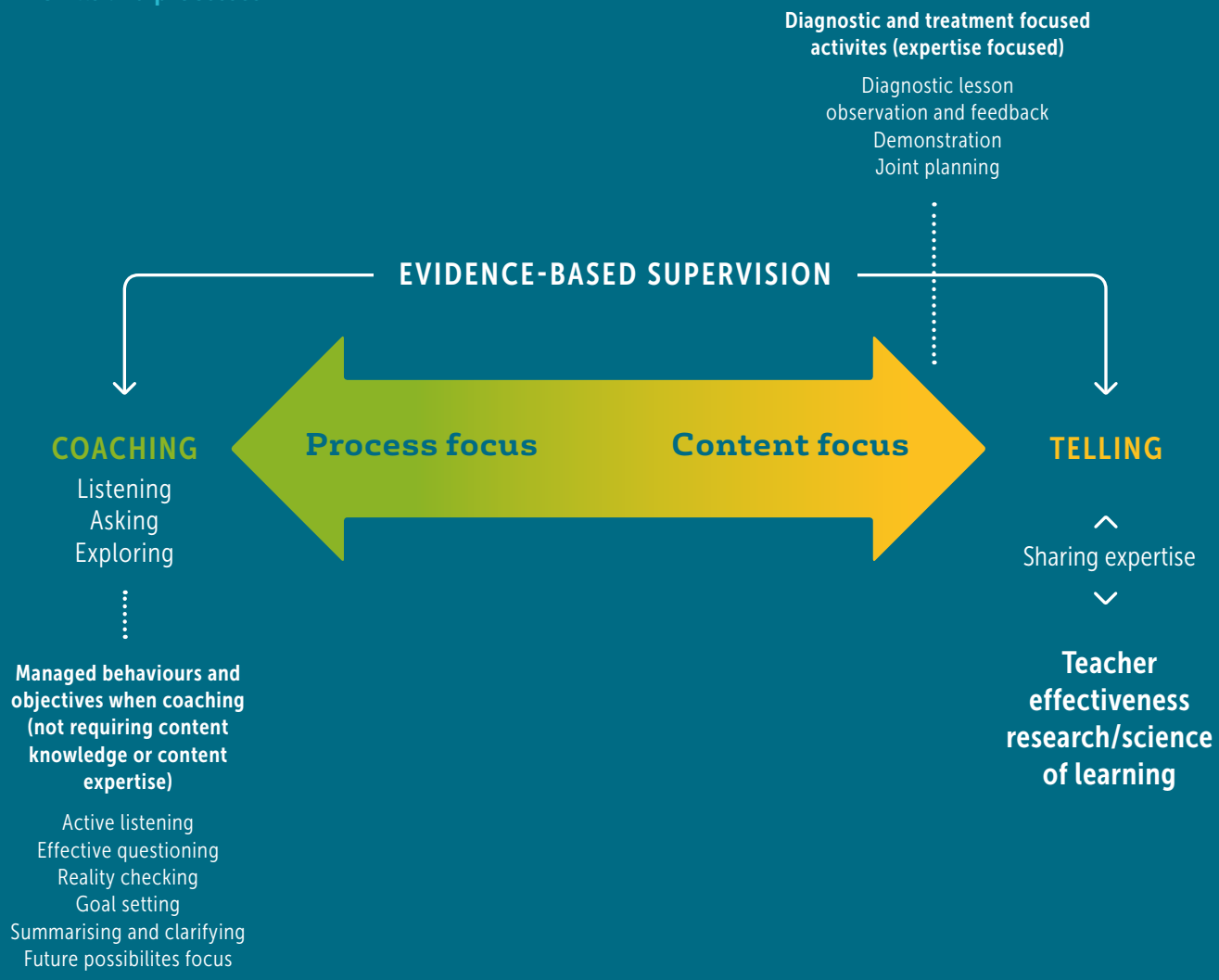
Diagnostic judgement and examples of the 'feedback to teachers' structure



Strength
Most learners made rapid progress in the acquisition of new words **BECAUSE** the teacher used engaging forms of repetition and real-life rehearsal of the vocabulary in context.

Area of Development
Low ability learners struggled to integrate the words they were learning **BECAUSE** the teacher used sentence structures that these learners were yet to be familiar with.

Skills and processes



Part 2 Implications of the approach going forward

Much has been learned from the implementation of the programme. Adaptations have been made to *the evidence-based supervision* approach, which include:

- integration of a start-of-year programme launch event to build system buy-in and awareness;
- development and inclusion of an event for principals from across Jordan to enable them to engage more easily with the evidence that is being shared with supervisors and teachers and with the processes of diagnosis, treatment and evaluation.

In addition, several key implications arose from the interviews that were conducted with students, teachers, principals and QRTA staff.

1. *Evidence-based supervision* is unlikely to be successful if delivered as an external process using entirely external expert processes.

Often large-scale reform is implemented as a top-down process with external expertise inserted into a system of Ministry of Education Reform Programme. Because evidence-based supervision requires the buy-in of an existing middle-tier structure it needs to be applied through process consultation and shared co-operation with the systems that it aims to enhance. In the context of the Jordan programme, the initial consultation stage in which the exact nature and structure of both the content of the training process and the practicum and accreditation process were defined with QRTA, who have a deep understanding of the context, was an essential part of the process.

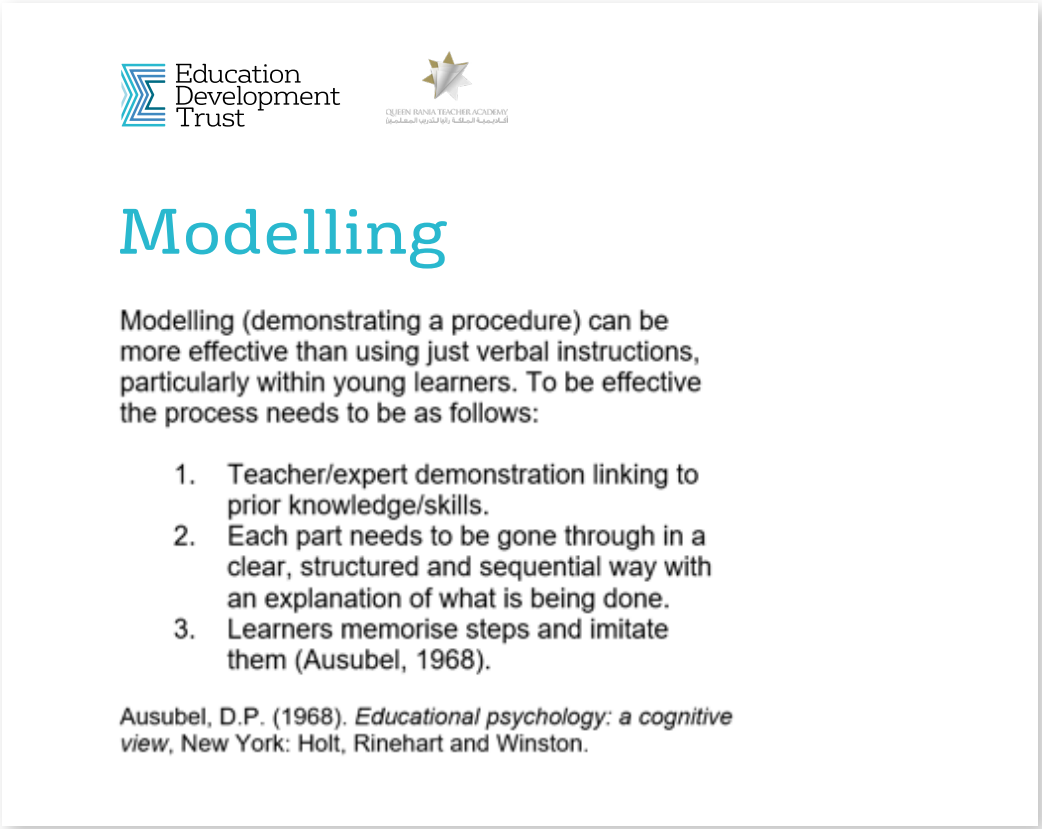
2. Internal system expertise needs to be positioned at the forefront of programme delivery. Alongside this, modelling the programme's philosophy (the integration of quality diagnosis and coaching) in the training and support process is essential.

This is perhaps not surprising, bearing in mind that the success of supervisory processes in the health system seems to be in part due to the existence of levels of supervision to ensure an expertise focus. Any large-scale implementation of such an approach will need to take on a similar mindset, with the leadership of the programme acting more as high-level supervisors than administrators and project managers.

Alongside this, although the programme presented the most up-to-date evidence from teacher effectiveness and science of learning, **it was the system itself (supervisors and teachers working collaboratively) who interpreted and applied evidence in their own context**, in a similar way that a doctor, or other independent healthcare practitioner, might apply clinical reasoning to a specific healthcare context.

3. There must be space for the system itself to take on the development of the programme – if its true potential is to be unleashed.

Although the programme consisted of many elements that are instantly recognisable as traditional components of teacher development (training, facilitation, coaching process, practicum and a curriculum), enough space was left for the system itself to implement adaptations. In the context of the Jordan programme, it was the system itself which developed a highly innovative use of social media to share practice. Social media groups had been set up to enable contact information and event dates to be circulated; however, these rapidly took on an innovative role as the supervisors and teachers saw these as an opportunity to share video clips and ideas based on the training that they had received.



Example of a *clinical practice* guidance card

4. Further iterations of the programme, in an expanded form, should consider the potential of a web-based solution for the sharing of 'clinical practice' examples (perhaps in the form of 'treatment cards' illustrating evidence-based 'how to') and shared practice video.
Treatment cards consisted of short accessible summaries of a piece of education research.

Often systems that have maintained a supervisory system have geographical challenges in supporting their teachers (such as remote locations). However, mobile phone access is strong in many cases. Online access to videos and clinical practice guidance is an area that appears to have much potential.

5. Beyond its use by their supervisors, teachers have begun to adopt *evidence-based practice* as a critical thinking process in their classrooms.

This flowing down of practice was evidenced in interviews from various levels of the system (teachers, supervisors and principals). The second year of the programme will seek to emphasise the way in which the concept of diagnosis, treatment and evaluation can be pursued at all levels of a supervisory system – with teachers actively encouraged to adopt the same mindset to the use of evidence and pedagogy in their classroom practice.

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CONTACT US

Dr Richard Churches, Lead Adviser
Education Reform and Evidence Based Practice
Education Development Trust
rchurches@educationdevelopmenttrust.com

Lina Aghajanian, Project Manager
Education Development Trust
laghajanian@educationdevelopmenttrust.com