Ensuring instruction changes – evidence based teaching

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Three strategies for improving teaching and learning

- Lesson Study
- Coaching
- Instructional Rounds/Learning Walks

Are any being used in your country?
Are there some common elements that bind these three strategies together?
An outline of Coaching and Instructional rounds may be needed

Coaching to improve teaching and learning

- Coaches are experienced teachers appointed by a school district or education authority to work in schools
- Coaches may be generalists (teaching and learning coaches) or specialists (e.g. in mathematics)
- They may work full-time in several schools or they may work with other teachers in their own school
- They are expected to work in classrooms to assist teachers to improve teaching and learning

Coaching to improve teaching and learning

- Coaching is widely used in USA schools and in Australia
- It is a response to demands to improve school performance and to raise student achievement
- School systems are prepared to put aside large budgets to support teacher-coaching programs
- There is now an extensive literature on coaching
- The are different definitions of coaching and the role of coaches

Instructional rounds to improve teaching and learning

- Instructional Rounds originated in USA schools and have spread quickly to several over countries
- They are also a response to demands to improve school performance and to raise student achievement
- School districts carry out instructional rounds involving superintendents, principals and senior teachers visiting classrooms in local schools and reporting to teachers on the quality of teaching and learning

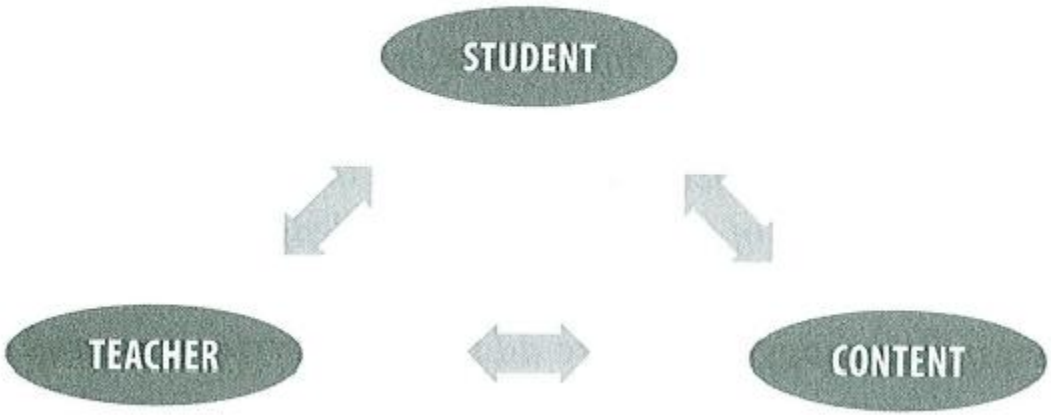
Instructional rounds to improve teaching and learning

- There is now an extensive literature on Instructional rounds
- Participating teachers may be involved in identifying areas to be looked at but may not be closely involved
- Learning walks (also called Classroom Walkthroughs) are modifications of Instructional rounds
- These are school based and carried out by local teachers who act both as observers and observed to examine a question or issue relevant to their school

The Instructional Core

- The word may be new but it is the common element that binds together all three strategies:

FIGURE 1.1 THE INSTRUCTIONAL CORE



Seven Principles

FIGURE 1.2 SEVEN PRINCIPLES OF THE INSTRUCTIONAL CORE

1. Increases in student learning occur only as a consequence of improvements in the level of content, teachers' knowledge and skill, and student engagement.
2. If you change any single element of the instructional core, you have to change the other two.
3. If you can't see it in the core, it's not there.
4. Task predicts performance.
5. The real accountability system is in the tasks that students are asked to do.
6. We learn to do the work by doing the work, *not* by telling other people to do the work, *not* by having done the work at some time in the past, and *not* by hiring experts who can act as proxies for our knowledge about how to do the work.
7. Description before analysis, analysis before prediction, prediction before evaluation.

City, Elmore, et al. p. 23

Four steps to improving the instructional core

- Subject matter, teaching and learning need to be seen as linked.
- Teachers need to identify and focus clearly on a “problem of practice” relating to the instructional core
- Teachers need to develop appropriate skills to critically examine instruction and its impact on the quality of students’ learning
- Teachers and other key agents in the school need to build a shared vision of what improved teaching could look like

Role of subject matter in the instructional core

- Subject matter must not be treated in isolation from students and teachers
- Poorly chosen subject matter (low level mathematical thinking, unchallenging content or content too difficult for students) is likely to produce poor learning
- But from Lesson Study we know that even highly appropriate and potentially rich subject matter will fail unless it is well understood and implemented by teachers, and engaged in deeply by students

Identifying a “problem of practice”

- A “problem of practice” or a “question of practice” exists within the instructional core and is how the team identifies a key issue or question relating to students’ learning:
  - What changes to current teaching are likely to overcome that question of practice?, or
  - What kind of teaching may have brought about the problem in the first place?
- Here the focus is on the first meaning – looking ahead to future action (sometimes called a “theory of action”)

Focus on Instructional Core

- The starting point is current practice (including selection of appropriate subject matter)
- The challenge is to identify a specific “problem of practice” in which current teaching:
  - may be falling short
  - can be made more effective
- And ensuring that teachers will be involved directly in bringing about change and will know when it has taken place

Focus on the Instructional Core

- The term “Instructional core” is defined as the interactions between teachers, students and content.
- The links between learning and teaching have to be taken seriously following this initial phase of locating a “problem of practice”.
- How can teachers be helped to work together to examine their instructional practice/core?
- How will teachers work seriously on this over weeks and months?
- There is always a temptation for teachers to move outside the instructional core – and to locate problems elsewhere e.g. lack of money, poor school leadership, tests are too difficult, our students can’t, not enough time, our parents don’t…(you know the story, etc)

Examining the Instructional Core

- Having teachers examine their own practice, to relate it to a school's instructional core and to talk about it with other teachers is a new experience for many teachers
- A warning: Teachers who are worried about
  - classroom management, or
  - lack of support from the school administration, or
  - lack of engagement by students

  are not ready to think about the quality of teaching (i.e. instructional core) until these more basis concerns are addressed.
- Teachers also need to develop new skills and protocols before this work/thinking can commence.

Examining the instructional core

- Examining the Instructional core requires teachers to be objective and scientific. This is shown by:
  - Respect for evidence
  - Cultivation of a shared and precise vocabulary
  - Collaborative conversations guided by shared norms
- The danger is that conversations about instruction don't go very deep.
  - Sometimes this is described as "happy talk", i.e. talk that doesn't really challenge practice. Instances of "happy talk" are: "students appeared really interested in what they were doing", "they were engaged for the whole lesson", "the lesson was well planned". You know this kind of talk very well.

Learning to think about the Instructional core

A possible starting activity:

- Ask teachers to write down their “hypotheses” (“explanations”) on where most students are not performing well.
- Use Yellow post-its. Each teacher can come up with no more than three possible explanations of poor performance. Teachers’ names are not attached.
- Teachers then place the Post-its on a white board.
- As a first analysis, how many of the hypothetical explanations start with “students don’t or can’t”, or focus negative things about students? Are teachers seeing the problem in terms of what students can’t do and what they lack in mathematics learning?

How to move the conversation forward to talking about teaching and what teachers can do?

Students don't come to high school adequately prepared for complex problems.

Students aren't able to think abstractly.

Students give up when the problem is hard.

The vocabulary on the state math tests is unfamiliar to students.

Students have a math phobia—they think they can't do math.

Students aren't familiar with the format of the state test.

Students have a lot of social and emotional issues.

Students are working after school, and they don't do their homework.

Notice that these responses tend to locate the problems with “students” and what they can’t do

- How will you move the conversation from “students” (or “parents” or “community,” etc.) to “teachers”?
- How will you frame the work as an opportunity to improve instruction, rather than as a failure (proactive vs. reactive)?
- How will you help teachers have a questioning rather than a defensive stance?
- How will you surface and get people to acknowledge the fundamental assumption that teaching matters for learning?

Linking Learning and Teaching

The activity (continued):

- For a next round of analysis, look at the explanations offered:
- Teachers need help to re-frame this first round of explanations in terms of teachers and teaching?
- Use a different colour of Post-it to overlay any explanations where the subject has now been changed to "teachers can" or "teaching .."
- Then ask which of these are seen as feasible, i.e. worth working on
- This is important to focus thinking on teaching and to identify what changes to teaching can be undertaken.

Which of these responses is more likely to clarify a “Problem of practice”?

There’s too much math to teach in a year—no time to spend on long problems.

Parents don’t know the math, so they can’t help their kids.

Teachers spend most of their time on applying formulas, not on complex problems.

I put multistep problems at the end of assignments, and they are often skipped.

I don’t really teach strategies for doing multistep problems.

Teachers spend too much time lecturing at students and doing all the work.

Students don’t practice on their own enough.

The math book doesn’t have enough multistep problems to practice, and I don’t have time to find more.

Evidence based improvement

- In order to give expression to a “problem of practice” teachers have to be able to describe what students are currently able to do with a shared understanding of what changes to teachers’ own practice are likely to be effective in bringing about improvement
- Anecdotal data will not be enough. Solid evidence needs to include:
  - Students’ work samples or actual problem solutions
  - Classroom visits, video tapes
  - Self-reports backed up by other evidence
  - Surveys or interviews with teachers
  - (Have teachers to extend the list as required)
- Specifically, teachers have to be clear about:
  - What data will answer their questions teaching and the improvement of learning?
  - What are teachers themselves ready, willing and able to do?
  - What resources are available to work on these issues, including people and time?

A shared and precise vocabulary

- It is important for teachers to be able to talk about what they notice in a precise way that is readily understood by others
- An outside facilitator has a key role in helping teachers to use words in a careful precise way. For example, a statement like “Students appeared to be engaged/not engaged” needs to be unpacked:
  - What do you mean by “engaged”? Students paying attention, doing what the teacher asks, understanding what they are doing, like what they are doing? etc
  - What did you really notice?
  - Did other people see the same thing? etc

Conversations guided by shared norms

- For example, if teachers go into other teachers' classrooms:
  - The goal is to investigate an agreed problem of practice not to make judgements about their colleagues
  - The focus is on the instructional core: the interactions between teachers, students and (specific) content
  - Observations should be backed up by evidence
  - What is observed should not be discussed outside the group
  - Observations are framed on the basis of evidence describing actual teaching, what students did or were not able to do, and about the subject matter or tasks used
  - These descriptions are needed before any analysis takes place; analysis must precede any evaluations
- Teachers need to agree that what is see and discussed will not be shared outside the group

Evidence based teaching

- How will teachers know if:
  - changes to teaching have taken place, and
  - these changes have been effective
- Relying on internal resources (i.e. teachers talking among themselves) to make these judgements is probably not enough
- External resources, such as
  - An external facilitator for Lesson Study, or
  - a teaching coach, or
  - trained observers using Instructional Rounds,

  are well placed to bring about a blend of both in analysing and evaluating success in dealing with agreed “problems of practice”

Evidence based teaching

- Setting up agreed norms is going to be very important
- Making good use of non-observational data will be important for re-assuring teachers
- For a start, someone, like a coach, needs to work with teachers in their classrooms to model what it is like to work on a problem of practice
  - The coach may think he/she are modelling very clearly, but how does the coach know that what he/she are doing is being noticed accurately?
  - Modelling small pieces rather than whole lessons

The Coaching Cycle

- Coaches work with teachers to identify a problem of practice to plan a lesson or a key part of a lesson, to demonstrate that part of a lesson or to observe the teacher doing that part of the lesson, to de-brief after the lesson, to plan the next phase together
- A crucial element is the decision on how to gather evidence of changed teaching and changed learning
- Teachers and coaches have to be committed to working with together over a major part of the year to bring about and to consolidate changes

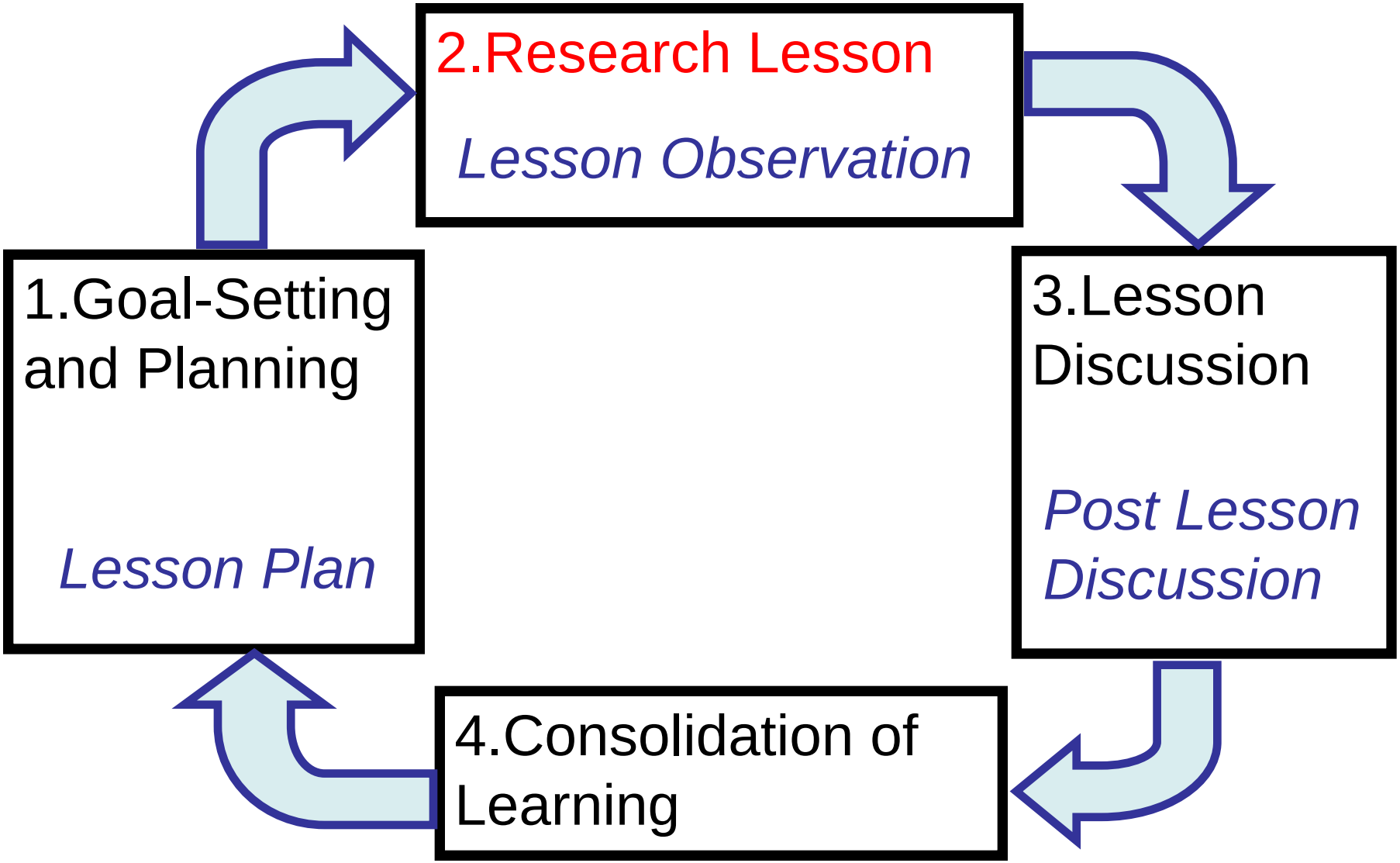
The Coaching Cycle

- Coaching often has to address basic approaches to effective teaching and classroom management, but after these have been addressed it needs to look at choice of subject matter and assessment of student learning
- The big danger is that coaches and teachers settle for "filling in the holes" when bigger changes to the instructional core are needed
- Another danger is that coaches are assigned only to "weak" or "beginning" teachers. Coaching is then associated with teachers who are experiencing problems
- Coaching should be part of a systematic school-wide plan to improve teaching and to evaluate progress

Coaching Cycle

- The Coaching Cycle has some similarities to the cycle of Lesson Study
- However, the time frame for coaching is often shorter whereas Lesson study does not look for short term gains
- The work of coaches is often directed by district and school administrators to deal with “problem” areas (areas requiring attention) and can therefore become fragmented
- The Lesson Study cycle is usually not a response to perceived problems or difficulties

Lesson Study Cycle (Lewis (2002)



Lesson Study Potentialities

- Teachers work over a sustained period on a well defined problem of practice, with deep focus on instructional materials
- Objective is to improve the quality of students' learning
- Involves expert, experienced, and less experienced teachers
- Engages an outside facilitator to guide research and review phases especially and is resource intensive (time and personnel)
- Focussed on building collective capacity (knowledge for teaching) over many cycles – not directed at rapid change of individuals
- Accountable to the school leadership team for achieving clearly stated goals

Lesson Study Potentialities

- Lesson study works best when the school system is relatively stable, i.e. where schools have time to focus on improved teaching and learning, and where new initiatives and changes in policy are few
- Lesson study can include less experienced teachers but requires a majority of teachers with high levels of professional behaviour, including teaching skills and subject matter knowledge
- Because Lesson study is resource intensive (time and personnel) it requires high levels of support from principals and school districts
- Its long term success relies on having many schools committed – as teachers leave any one school they are likely to be replaced by other teachers with similar experiences in using Lesson study

What Instructional Rounds Can Contribute

- Modelled on medical (hospital) rounds used in the training of young doctors working with specialists and others
- Key people from a network of schools (superintendents, principals, subject advisors) work in a school on a "problem of practice" that requires further refinement
- Four key steps
  - Identifying a problem of practice
  - Observing
  - Debriefing
  - Focussing on the next level of work

Instructional Rounds

- What does an Instructional Round look like
  - A network convenes in a school hosted by a member or members of the network (e.g. principal or superintendent)
  - The focus of the visit is a specific “problem of practice” – an area of instructional improvement that the school and the system are wrestling with and would like the network’s feedback on
  - The network divides into smaller groups that visit classrooms for about 20 minutes each
  - Network members visit and record evidence of what they observe relating to the problem of practice

Instructional Rounds

- What does an Instructional Round look like (cont.)
  - After classroom visits the entire group (observers and teachers) meets to share evidence of what has been observed and to debrief
  - The group looks for patterns that explain student performance and teaching practice in the school
  - The network discusses the next level of work and makes recommendations
  - The network meeting may include teacher professional development to improve knowledge and skills related to the problem of practice

Four dimensions

Instructional Rounds as:

- an organisational process
  - practices that can be used and adapted across schools
- as a learning process
  - using information and evidence from multiple sources
- as a culture building process
  - respecting the evidence and moving beyond surface descriptions e.g. student engagement
- as a political process
  - making a public statement about fostering professional knowledge and accountability from within

Instructional Rounds Potentialities

- Responds to a “problem of practice” that requires further refinement
- Immediate contact with teachers in classrooms to clarify the problem of practice and to suggest remedies
- Engages school administrators and outside expertise in looking at specific aspects of teaching and learning
- Quickly defines “problems of practice” but solutions may miss deeper aspects of pedagogical content knowledge
- A catalyst for action and should be directly involved in building teacher capacity

Instructional Rounds Potentialities

- The “problem of practice” often reflects district or school-wide priorities, such as student engagement, clarity of instruction, quality of classroom communication, etc
- The diverse backgrounds of the visitors mean that they are more likely to focus on these issues, and less able to address specific issues relating to subject matter or students’ (mathematical) dispositions. They may miss or pass over deeper subject specific issues
- It is more difficult to coordinate district resources in the form of Instructional rounds to look in depth at these kinds of issues, hence the development of Learning Walks

Learning Walks Potentialities

- Learning walks or Classroom walkthroughs are modelled on Instructional Rounds – similar focus on evidence – but are conducted by teachers in a particular school
- They may involve some outside subject experts, such as coaches or subject advisors
- They are intended to get a comprehensive picture of current practice and how well it meets a school's goals
- Teachers take on roles of observers and observed
- Their focus can include specific aspects of subject teaching, content, assessment of mathematical learning

Finally to review the principles

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Acknowledgements

Japanese Lesson Study in Mathematics: Its Impact, Diversity and Potential for Educational Improvement (World Scientific, Singapore, 2007) Edited by Masami Isoda, Max Stephens, Yutaka Ohara, and Takeshi Miyakawa

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