# Please cite the Published Version

Stenhouse, Rachel (2020) Teacher identity, teaching and pedagogical approaches. In: Studying Education An Introduction to the Study and Exploration of Education. Learning Matters Limited. ISBN 152649048X

Publisher: Learning Matters Limited

Version: Accepted Version

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## <<chapter no>>13

## <<ti>title>> Teacher identity, teaching and pedagogical approaches</ti>

## <<author>> Rachel Stenhouse

<< key words>> Identity, pedagogy, teacher-centred pedagogy, student-centred pedagogy, Bloom's taxonomy, mastery, questioning, reflection, dialogic, learning styles.

## <<Key notes>>

- Teaching involves many things in addition to standing in front of a class.
- Teacher identity develops over time and is influenced by key others.
- Pedagogical approaches to teaching include: behaviourism, constructivism, social constructivism.
- Student-centred pedagogies include co-constructed learning, dialogic pedagogies, inquiry based learning
- Teachers may develop their teaching by conducting research informed teaching and team teaching.
- New ideas come and go in education. It is important to critically evaluate where a new idea has come from and is the research behind it robust.

#### <<a head>>Introduction

This chapter begins by considering teachers as professionals. It looks at the importance of teacher identity in teaching. The chapter then goes on to consider some of the different approaches to teaching or what we call 'pedagogies'. Each teacher may have a preferred pedagogical practice and different pedagogies will be better suited to different age groups and the subject being taught. As you read this chapter, consider how each pedagogical practice might impact learning in the classroom.

# <<a head>>Teachers

# <<Begin key questions feature>>

What is involved in being a teacher?

Which of a teacher's activities directly impact learning either in a positive or a negative way? In what ways does the activity impact learning?

# <<end key questions feature>>

# <<br/>b head>>What do teachers do?

You would be forgiven for thinking that a teacher spends the majority of their working time in the classroom teaching. Yet, there are many other elements which make up a teacher's workload. These include: planning, marking, meetings, liaising with parents (emails, phone calls, parents' evenings), running extra-curricular activities, spending extra time with struggling students and so on.

# <<br/> <ebegin case study>>

Solomon is a secondary school teacher in a state school. He has been teaching for over 10 years. This is his typical day.

7:45am Arrive at school. Check emails. Look through timetable for the day to check over what I am doing for the day.

7:55am Marking. Creating more resources for today, usually creating questions/activities for independent work.

8:30 Form group - this session usually revolves around admin: taking the register, notices. and other administrative tasks.

8:45 Lesson – teaching

9:45 Lesson – teaching

10:45 Break time – spend between 5 and 15 minutes helping students from previous lesson. Grab a drink to avoid dehydration.

11:05 Lesson – teaching A-level. Although planned, A-level lessons require a lot of responding and adjusting in the moment to meet the needs of the students. Therefore require a lot of energy.

13:05 Lunch time – spend first 10 minutes with students. Spend a further 15 minutes dealing with admin.

13:50 Form time – usually involves a PSHE based activity. Resources provided by another member of staff and vary in quality so requires thinking on the spot as no time to plan for this session.

14:10 I might be lucky enough to have a free lesson. This is used for email management, marking, chasing students, dealing with detentions, and parental contact.

15:10 End of the school day. Once a week I run an after school club for one hour. Once a week there will be a department or pastoral meeting, varying in length from 1 to 2 hours. Otherwise I am marking, supervising detentions, or creating resources.

16:30 Go home.

19:00-21:00 Marking or creating resources.

## <<end case study>>

Teaching is not a nine to five job. Managing workload can be an issue for many teachers as more and more demands are placed upon those in the profession. This case study shows

how Solomon has to find time outside of lessons, to plan, prepare and carry out other tasks required of a teacher.

# <<br/> <ebegin key information feature>>

To get a better understanding of some of the issues teachers face with workload read the reports produced by teaching union, NASUWT

https://www.nasuwt.org.uk/advice/conditions-of-service/workload.html

# <<end key information feature>>

## <<br/>b head>>Teacher identity

# <<br/> <ebegin key questions feature>>

What is meant by teacher identity? How might teacher identity develop?

<<end key questions feature>>

Everyone has one, or usually more than one, identity. A person might have an identity as a parent and another identity as a professional in the workplace. However, these identities feed into each other and are intertwined. A person's identity is shaped by their experiences and the people around them.

Every teacher has a teacher identity and a style of teaching that they have developed. Teacher identity is often fluid, and changes over time. A trainee teacher will have a teacher identity that they are striving towards. This is based on their other identities (friend, student, colleague, relation, et cetera) and their ideas of what a teacher should be. The trainee teacher will develop their teacher identity during their training and beyond. Even established teachers find that their teacher identity is still evolving, for example as they take on different roles in schools and develop their understandings of themselves and of the process and systems of education.

# <<c head>>How does teacher identity develop?

Initially teacher identity is based on a teacher's, or trainee teacher's, ideal of what makes the perfect teacher. This in turn will be based on their experiences of education: as a student, as an observer, as a parent, as a professional in another field. Everyone has an experience of being taught, or what we call 'an apprenticeship in the classroom'. They will have had positive and negative experiences. These experiences form the initial basis of what, in their opinion, a teacher should be and hence form the basis of their teacher identity. This initial identity is then built on, developed or changed as a result of initial teacher education. During initial teacher education, trainee teachers are exposed to different styles of teaching through their training provider, their school mentor and the teachers they work with. These will all inform the teacher identity that a trainee teacher is forming. Through classroom practice, a trainee teacher tries out their emerging teacher identity and moulds it. They will also start to appreciate that their ideal teacher identity is not achievable and make compromises about the teacher identity they will take on.

# <<a head>>Teaching

<<br/>begin key questions feature>>

How do teachers develop their pedagogy? In answering this, consider: When and where do teachers develop their pedagogy?

From whom do teachers develop their pedagogy, and why?

<<end key questions feature>>

Teaching involves a teacher and a learner. Many things will affect how subject matter is taught including the age of the learner, the classroom and environment, the subject being taught, et cetera. Teachers will have a pedagogical approach based on their own experience of education. This will be built on during their initial teacher education. There will be a large input from subject mentors during teaching practice and university tutors during university based sessions. As teachers progress through their careers, their teaching approach will only change if they have input from colleagues, engage in research or engage in training which they then choose to act upon. Historically, a teacher's pedagogy would be based on their own experience of education and direct interaction with colleagues. As a result, longer serving teachers tend to have a style of teaching that they stick to and do not often engage with "new" methods of teaching. Some of these longer serving teachers, who have not engaged with research, might tend to be resistant to change, with a view "If it isn't broke, don't fix it". It is only recently, during the 20th and 21st centuries that trainee teachers have been actively encouraged to engage with research and to reflect on their teaching. This change in teacher education means teachers new to the profession are more likely to engage in research about teaching and to experiment with different teaching approaches. As a result their pedagogies are more likely to be informed by research and reflection, in addition to their colleagues. We are also seeing a wave of research-informed teaching in the 21st century, as teachers are being encouraged to take control of their profession.

# <<a head>>An introduction to pedagogical approaches to teaching

## <<br/> <br/> <br/>

What are the main pedagogical approaches? How do these relate to educational theories?

# <<end key questions feature>>

The main pedagogical approaches are behaviourism, constructivism, and social constructivism. Refer to Chapter x to remind yourself of the theories relating to these approaches. The pedagogical approach a teacher takes will depend on what the teacher perceives her or his purpose to be. If a teacher sees her or his role as imparting knowledge, then she or he would be more likely to employ a behaviourist approach to teaching. However, if a teacher sees her or his role as guiding students' learning then she or he would use a constructivist or social constructivist approach. A teacher might use a mix of approaches, or vary their approach based on the material they are teaching or the needs of a particular class.

<<c head>>Behaviourism. Learning is teacher-led, what we might refer to as "chalk and talk" or historically a more traditional approach to teaching. The teacher is the knowledge provider in the lesson and the lesson is taught through direct instruction. The teacher lectures and models.

<<c head>>Constructivism. The student is at the centre of the learning. In the classroom this might take the form of project work or inquiry based learning. There would be less teacher talk than in a behaviourist approach.

<cc head>>Social constructivism. This is a mix of teacher led and student centred learning. In practice, you would see group work alongside teacher modelling.

# <<br/> <br/> <br/>

Think of your own experiences of learning – as a school student, as a university student et cetera. What pedagogical approaches were used? Reflect on how these supported or hindered your learning.

<<end key questions feature>>

We now go on to look at some more specific pedagogies within these.

# <<a head>>Student-centred pedagogies

## <<br/> <ebegin key questions feature>>

What student-centred pedagogies are there? How might these support learning? What are the advantages and disadvantages of each approach? How can research inform a teacher's pedagogical approach? <<end key questions feature>>

## <<c head>>Co-constructed learning

Co-constructed learning (based on Vygotskian theory) is not only student-centred, but student-led. Students democratically decide on what topic they want to learn and might even plan out how they will learn it. In this pedagogy students might research a topic and then present it to the rest of the class, sharing their learning with their peers.

#### <<br/> <br/> <br/>

https://www.theguardian.com/teacher-network/2012/oct/08/coconstructing-classes-pupils-teaching-tips

This article gives an example of co-constructed learning in one school. In this example, students also mark books and give written feedback.

<<end key information feature>>

# <<c head>>Dialogic pedagogies

Dialogic pedagogies are based on ancient Greek philosophy (for example, Socrates) and then on Bakhtin and Freire. They emphasise the idea of an equitable relationship. They involve talk between teacher and student or student and student, as opposed to just the teacher talking at the students ("chalk and talk"). Different dialogic pedagogies will be useful at different points in a lesson. The initiation-feedback-response model is useful for ascertaining if a student knows a fact, whereas student-student dialogue can be used to develop ideas and understanding.

## <<br/> <br/> <br/>

How might dialogic pedagogies promote or hinder learning? What might good dialogue look like? <<end key questions feature>>

<<c head>>Initiation, feedback, response (this idea draws on the work of Sinclair and Coulthard, 1992).

The teacher initiates a dialogue, often in the form of a question. A student then gives feedback in the form of an answer to the question. The cycle ends with the teacher responding to the student's answer, usually by confirming or correcting the answer given. The type of questions the teacher asks allow the students to respond in different ways. Types of questions are explored further in the box

below. Initiation-feedback-response dialogue can take place as part of whole class teaching or in one-to-one interaction between a teacher and a student.

# <<c head>>Student-student dialogue.

This is often seen when students work in pairs or small groups. Students are often more prepared to take risks when working in pairs or small groups, than giving an answer in front of the whole class, so this type of dialogue can allow them to test their thinking with a peer. For this dialogue to be successful, students need the necessary skills to partake in rich dialogue. These skills include: turn taking, use of appropriate vocabulary, responding and listening. A good dialogue between students will involve well developed responses and students building on each other's ideas and arguments.

## <<br/> <br/> <br/>

The following Department for Education publication gives guidance for developing questioning and dialogue in specific subjects

https://webarchive.nationalarchives.gov.uk/20090811091628/http://nationalstrategies.standards.dcsf.gov.uk/node/154685

# <<end key information feature>>

There is a time and place for both teacher-student dialogue and student-student dialogue. The role of the teacher is to determine when each type of dialogue is appropriate and how long should be spent on each type of dialogue.

# <<c head>>Inquiry based learning

This approach has roots in constructivism. It is also called problem based learning, a question or problem is posed, usually by the teacher (however, in a co-constructed learning environment, the problem would be posed by the students) and the students then conduct research which they think will help them to solve the problem. This is in contrast to a traditional approach, in which the teacher would present facts and then give the students questions to answer using these facts.

## <<c head>>Research informed teaching

As we see more schools being labelled "research schools", we see teachers actively being asked to engage with research.

Teachers may engage in research through reading about effective practice and then trying it out in their own classroom. Alternatively, teachers might engage in action research; this involves teachers developing a strategy or classroom practice, trying it out in their own classrooms, reflecting on the results and then adjusting their practice accordingly. Research informed teaching should be a continuous cycle, as shown in the diagram below:

# <<insert fig 13.1>> <<caption>>Fig 13.1

This research cycle is often attributed to Lewin (1948), who suggested a spiralling process of planning, executing and fact-finding.

By engaging in research and trying out practices in their classroom, teachers are able to adjust practices accordingly to fit their students and school context. In theory, this should empower teachers to adapt pedagogies that are being pushed by the government rather than having new ways of teaching forced upon them.

#### <<br/>begin key information feature>>

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/625007/Evidence-informed\_teaching - an evaluation of progress in England.pdf

This document reports on a study, commissioned by the Department for Education, to analyse the progress that schools had made to developing research informed practice. It considers the factors that influence teachers' engagement with research. It will help you to understand the complexities of developing the teachers and schools into research informed parties.

<<br/>begin key information feature>>

# <<c head>>Team teaching

Team teaching is predominantly seen during initial teacher education, but opportunities for team teaching for experienced teachers can be valuable. There are a number of different ways of 'team teaching' as discussed by Friend and Cook (Friend and Cook, 1996).

Team teaching means two or more teachers delivering a lesson. It provides an opportunity for professional development as the teachers can learn from each other. It can also demonstrate effective team work to students. Team teaching can simply be turn-taking, one teacher teaches the first part of the lesson, with the other teacher taking the next part and so on. Team teaching is often most effective, for teachers and students, when the teachers chip in at different points in the lesson, rather than waiting for their "turn". This prevents learning opportunities, for both the teachers and the students, from being missed.

## <<br/> <br/> <br/>

As part of your course you may spend time in a classroom, either observing or teaching. If this is not the case, consider a session you have as part of your university studies.

When you are observing a lesson think about how the teacher uses pedagogical approaches to promote learning.

Use the following questions as prompts for your observation:

- What pedagogical approach, or approaches, is the teacher using?
- Why might the teacher have chosen to use a particular approach?

Reflect on this on your own to begin with and then ask the teacher what their rationale is.

Could the teacher have chosen to use a different approach? In your opinion, did the teacher use the right pedagogical approach? When answering this consider the teacher, the learners, the subject matter, and the learning environment.

<<end study skills feature>>

# <<a head>>Tools to support teaching

<<br/>
<hegin key questions feature>><br/>
What are the different types of questions a teacher might use?<br/>
<<end key questions feature>>

Questioning is a key part of teaching. Questioning will be used differently in different pedagogies and at different times. Generally speaking, in a behaviourist approach, questioning would be used to determine if a student knows key facts, whilst in a constructivist approach, questioning would be used to pose a problem and allow students to answer in a variety of ways.

<<c head>>Closed questions. These have a short, usually one-word, answer. A teacher uses these to ascertain if students can recall particular facts. Example: How many wives did Henry VIII have?

<c head>>Open questions. These questions allow for extended answers and often require more thought than closed questions. Example: How does a battery work?

<cc head>> Diagnostic questions. These questions are used to identify students' mistakes or misconceptions and are often multiple choice. Other than correct answers, each choice highlights a common mistake or misconception a student may have. Diagnostic questions may also be used at the start of a topic to determine what material needs to be covered. Example: What is  $\frac{1}{8} + \frac{5}{8}$ ? A  $\frac{6}{16}$ ,

B 
$$\frac{6}{8}$$
, C  $\frac{5}{8}$ , D  $\frac{3}{4}$ .

<<c head>>Probing questions. A probing question allows a student to talk about their opinions and is intended to encourage a student to think critically. Example: Why do you agree with John's answer?

<<br/>b head>>Bloom's taxonomy of questioning (Bloom, 1968)

<<br/>
<br/>

How can Bloom's taxonomy help teachers develop their questioning?

<<end key questions feature>>

Bloom's taxonomy was developed in the 1950s and 1960s by Benjamin Bloom and his colleagues. It is still widely used in education.

Bloom's taxonomy gives a comprehensive structure of different levels of questioning and is often represented as a pyramid:

<<insert fig 13.2>>

The pyramid structure indicates that knowledge questions require lower level thinking skills than understanding questions. The structure also indicates that knowledge is a prerequisite for understanding a subject matter. For example, one cannot understand how a battery works without knowing what a battery is.

- Knowledge. These questions often take the form: Who? What? When? Where? Why? How?
  These are considered to be closed questions, which require a specific answer and are used
  to elicit whether a student has knowledge of particular facts. Example: When was the Battle
  of Hastings?
- Comprehension. These questions require students to explain an idea or concept in their own words, demonstrating understanding of a concept. Example: Can you explain the water cycle in your own words?
- **Application**. These questions require students to apply their existing knowledge and skills to new situations. Example: What approach would you use to solve ....?
- Analysis. These questions require a student to examine something in a critical way. Example:
   Why did the Second World War break out?

- **Synthesis.** These questions require students to engage in original thinking. Example: What would the world be like if there was no gravitational force?
- **Evaluation**. These questions require students to make a judgement about something. Example: Do you think communism is a good or a bad political system?

Bloom's taxonomy suggests there is a hierarchy of questioning, starting with facts at the base of the pyramid. However, in some pedagogies, for example, inquiry based learning, it might be more appropriate to start with the "Application" level of questioning.

## <<a head>>Reflecting on practice

# <<br/>begin key questions feature>>

What is meant by the discipline of noticing? How can teachers use noticing and reflecting to improve their pedagogies? <<end key questions feature>>

Taking the time to reflect on practice, allows a teacher to improve their practice. It can be difficult to become aware of things that are naturally in our unconscious. Longer serving teachers could be described as unconsciously competent, that is, they are able to teach well without really thinking about what they are doing. New teachers often strive towards this. However, to continue to develop as a teacher, it is helpful to be able to reflect on practice so that it can be improved. This requires teachers who are unconsciously competent to become conscious of what they are doing. We will look at two ways in which teachers might reflect on their practice.

# <<br/>b head>>Noticing in the classroom

Noticing as a discipline can be a useful tool for teachers to develop their classroom practice (Mason, 2002). John Mason developed the idea of noticing to be a discipline. Rather than just observing things around us, we begin to reflect on them, that is, to notice them. Noticing centres around a situation or incident. By noticing something we give it attention. It can be difficult to notice things that are always around us or in our unconscious.

# <<br/> <ebegin case study>>

# Noticing in a coffee shop

When we sit in a coffee shop with a friend, we rarely notice the passers-by, as we are concentrating on the conversation. These passers-by are in our unconscious, we know they are there but we are not consciously thinking about them. However, if we "intentionally notice" them, we move them into our consciousness. We can then reflect on our own response to this. What are the interesting features? What are the similarities and differences between the passers-by? We can begin to theorise: Why might the person in the green coat be talking on his mobile phone?

<<end case study>>

# Gibbs' cycle of reflection

Gibbs (1988) presented a cycle of reflection with six stages: description, feelings, evaluation, analysis, conclusions, and action plan.

<<insert fig 13.3>>

## <<Begin study skills feature>>

As part of an assignment you might be asked to reflect on your experiences of education. You could use Mason's discipline of noticing or Gibbs' reflection cycle, or both, to help you critically reflect.

Rather than just describing what happened, Gibbs' reflection cycle gives structure and purpose to your reflection. You could follow Gibbs' cycle to give structure to your reflection as follows: Description. Describe what happened.

Feelings. How did this make you feel?

Evaluation. Make judgements about what was good and bad about your experience.

Analysis. Analyse what was happening: Would other people act in a similar or different way and why might this be the case?

Conclusions. How else might you have acted or responded to the situation?

Action plan. What would you do differently if this experience happened again? What can you do to develop any skills and/or knowledge you need to act in this way next time?

<<end study skills feature>>

## <<Begin key info feature>>

https://thoughtsmostlyaboutlearning.files.wordpress.com/2015/12/learning-by-doing-graham-gibbs.pdf

You can read Gibbs work here. It provides more depth on the ideas discussed in this section.

<<Begin key info feature>>

# <<a head>>Skills focus for the 21st century – necessary or emperor's new clothes?

# <<Begin key Qns feature>>

What are the current trends in education?
What research is there to support these trends?
How might these pedagogies promote learning in the classroom?
<<End key Qns feature>>

In education, there are often new fads that gain momentum and are written into policy forcing schools and teachers to adopt them. In most cases, these fads are based on robust research, but this is not always the case.

# <<br/>b head>>Neuromyths – Learning styles

An example of this is the myth of VAK (Visual, Auditory, and Kinaesthetic) learning styles. The theory is that students have a preferred learning style, for example, a student performs better if material is presented in a "Visual" form rather than an "Auditory" form. However, most of the research related to learning styles has shown that there is not adequate evidence that there is a link between

learning styles and performance (see for example, Pashler et al., 2008), but people will express a preference for how they learn. It is important that with any research, you take a critical approach.

# <<Begin key info feature>>

If you want to read more about learning styles and the research surrounding this read <a href="https://www.psychologicalscience.org/journals/pspi/PSPI">https://www.psychologicalscience.org/journals/pspi/PSPI</a> 9 3.pdf

If you want to read more about neuromyths in education, this is a good link to follow: <a href="http://www.educationalneuroscience.org.uk/resources/neuromyth-or-neurofact/">http://www.educationalneuroscience.org.uk/resources/neuromyth-or-neurofact/</a>

Often new fads are previous ideas which have gone out of fashion and then come back into fashion, for example, a mastery approach to teaching and learning.

# <<Begin key info feature>>

## <<br/>b head>>Mastery approach

Mastery is a term being bandied around a lot at the moment as the Government tries to improve attainment in mathematics, basing its ideas on the mastery approach used in Singapore and China, amongst others. A mastery approach to learning requires all learners to master an idea before moving onto the next idea. There has been a lot of investment in developing a mastery approach in mathematics in recent years. However, the idea of mastery itself is not a new one. For Bloom (1968), mastery involved a student learning at their own pace, allowing them the time to do this and breaking a course into smaller units of learning to help the learner achieve this. Slavin (1987) reconsidered mastery and Bloom (1987) responded to this; these papers together show how research can be open to interpretation and misinterpretation. Blair (2014) considered what mastery in mathematics might look like.

## <<Begin study skills feature>>

In an assignment you might be asked to critically evaluate a teaching pedagogy. To do this you might want to review the material in this chapter on pedagogies and consider what you think.

You could approach this as follows:

- Describe the pedagogy that you are evaluating. Look at any historical approaches as well as any "new trends".
- Synthesise the different approaches: How do the new trends relate to, build on, or contradict the historic idea?
- What does this mean for practice?
- Conclude: What are the key ideas you want the reader to take away?

We could expand the argument I have started to present on Mastery using the following framework:

- Describe: I would start by looking at Bloom's and Slavin's work and then presenting more modern ideas and approaches, for example, Blair's work.
- Synthesise: I would look at the similarities and differences between the articles on mastery. In particular, I would be interested in the similarities and differences between recent research and Bloom's research.
- What does this mean for practice? I would attempt to answer the following questions:

- Does the research show that key elements have been successful in the classroom?
- Are these elements all based on new research or are some of them from older research?
- What are the implications for teachers? That is, what should teachers be incorporating in their day-to-day practice to improve their pedagogy?
- Conclude: Mastery is not a new idea. It has developed over time, but some of the original ideas are still important. Teachers can incorporate these into their pedagogy, but should be critical about why they are including them and the effect it has on learning.

<end study skills feature>>

#### <<a head>>To conclude

In this chapter we have looked briefly at what is meant by teacher identity and how a teacher develops his/her identity. The identity that an individual has as a teacher will inform their pedagogical approaches in the classroom. Pedagogical approaches range from teacher-led to student-centred pedagogies and include a variety of dialogic pedagogies. Teachers are encouraged to engage with research to inform their teaching practice. However, new teaching ideas must be researched critically to ensure there is adequate evidence to justify their use and avoid any detrimental effect on student learning.

## <<a head>>Resources for further learning

The Times Educational Supplement (TES) website <a href="https://www.tes.com/new-teachers">https://www.tes.com/new-teachers</a> has some short articles giving advice to new teachers. These can give you an insight into the life and work of a teacher.

If you wish to read more about teacher identity, the following book looks at what is meant by identity and some of the issues faced by teachers striving for recognition: Jenlink, P.M. (2014). *Teacher Identity and the Struggle for Recognition: Meeting the Challenges of a Diverse Society*. R&L Education.

The following book looks at what it means in practice to be a reflective teacher: Pollard, A. (2002). *Reflective Teaching Effective and Evidence-informed Professional Practice*. London: Continuum.

The Chartered College of Teaching's journal, *Impact*, has easily digestible articles on a variety of topics, written by a mix of academics and practitioners.

## <<a head>>References

Blair, A. [2014]. Inquiry and mastery. Inquiry Mathematics. [Online] [Accessed 31 May 2019]. Available: http://www.inquirymaths.co.uk/posts/inquiryandmasteryBlair (2014)

Bloom, B.S. [1968]. Learning for Mastery. Instruction and Curriculum. Regional Education Laboratory for the Carolinas and Virginia, Topical Papers and Reprints, Number 1. Evaluation comment, 1:2 p1-11

Friend, M. and Cook, L. (1997). Student-Centered Teams in Schools: Still in Search of an Identity. *Journal of Educational and Psychological Consultation*. 8:1 p3-20. DOI: 10.1207/s1532768xjepc0801 1

Gibbs, G. (1988). *Learning by Doing, A Guide to Teaching and Learning Methods*. Oxford Brookes University [online] [accessed 31 May 2019]. Available:

https://thoughtsmostlyaboutlearning.files.wordpress.com/2015/12/learning-by-doing-graham-gibbs.pdf

Lewin, K. (1948). Resolving Social Conflicts. New York: Harper and Row.

Mason, J. (2002). Researching Your Own Practice: The Discipline of Noticing. London: Routledge.

Pashler, H., McDaniel, M., Rohrer, D. & Bjork, R. (2008). Learning Styles Concepts and Evidence. *Psychological Science in the Public Interest.* 9:3 p106-119.

Sinclair, J. and Coulthard, M. 1992. 'Toward an analysis of discourse.' in Coulthard, M. (ed.) 1992. Advances in Spoken Discourse Analysis. 1-34. Routledge.

Slavin, R.E. [1987]. Mastery Learning Reconsidered. Review of Educational Research. 57:2 p175-213