

Pre CPD	Post CPD
<p>My explanations are clearly delivered and include questions directed at individual students. I keep introductions short and do not waste much time on ideas that are 'out' of the syllabus. <i>I only ask a few questions and then provide extended periods where students work on exercises from the textbook or a worksheet. The exercises I assign start with a few easy questions and then gradually moves to harder examples. I set students working and deal with student difficulties individually while I go around the class. When students are working, I prefer to tell students where they have gone wrong and show them where and how to correct mistakes. I stop the class from time to time to clarify questions that I identify as particularly difficult.</i></p> <p><i>I have a formal, yet cheerful and positive relationship with students. I make sure to get to know my students and try to establish a relationship with them first. Students in my class need to be motivated and prompted all the time. I am not too hard on them. Students seem to like to be organized and prefer to be told what to do. They have the idea that mathematics is about working lots of problems from the textbook and trying to get as many of them correct as possible.</i></p> <p>I believe that students learn best when their own ideas are discussed and investigated, but there is little evidence of this in my classroom. Although I believe that it is more important for students to develop conceptual understanding rather than computational skills, I find it very difficult to do because of many constraints. <i>I feel much pressure to 'cover' the syllabus and I want to make sure that students do well in their exams. I feel constrained and frustrated by the scheme of work. I also claim that overloaded syllabi, high-stakes examinations and pressure from parents are constraints that I find hard to overcome.</i></p>	<p>It is important to do as many problems and questions as possible and carefully plans lessons so that nothing is left out. <i>I only ask a few questions and then provide extended periods where students work on exercises from the textbook or a worksheet. The exercises I assigns start with a few easy questions and then gradually moves to harder examples. I set students working and then deals with student difficulties individually while she goes around the class. I stop the class from time to time to clarify questions that I identify as particularly difficult. I tend to adopt this approach balanced with a 'dose' of inquiry. In my class, desks are arranged in pairs, but students work individually and only occasionally in pairs. Lessons begin with giving short introductions and maybe one or two examples.</i></p> <p><i>I have a formal, yet cheerful and positive relationship with students. I am kind, caring and positive. Students in my class need to be motivated and prompted all the time. Students seem to like to be organized and prefer to be told what to do. They have the idea that mathematics is about working lots of problems from the textbook and trying to get as many of them correct as possible.</i></p> <p>I make sure to involve students in thinking about the question and to engage them in the discussion.</p> <p>I am unhappy with my approach as this is inconsistent with my personal philosophy of teaching and learning. <i>I feel much pressure to 'cover' the syllabus and I want to make sure that students do well in their exams. I feel constrained and frustrated by the scheme of work. I also claim that overloaded syllabi, high-stakes examinations and pressure from parents are constraints that I find hard to overcome.</i></p>

Italics – show no changes from pre CPD to post CPD

Bold – show changes in beliefs and/or practices from pre CPD to post CPD

Normal – show no direct reference from pre CPD to post CPD

Typical Lesson Structure

Pre CPD	Post CPD
<ol style="list-style-type: none"> 1. Provide notes 2. Give an explanation 3. Pose oral questions to the students 4. Devote time for student questioning 5. Give an easy question 6. Demonstrate examples 7. Give a challenging question 8. Assign work to be done individually 	<ol style="list-style-type: none"> 1. Give a challenging question 2. Pose oral questions to the students 3. Give an explanation 4. Provide notes 5. Give an easy question 6. Assign work to be done individually 7. Assign work to be done in groups <ul style="list-style-type: none"> • Devote time for student questioning (This is done continuously, not just during a particular time.)

- Means not numbered by teacher
- Italics* mean added notes by teacher

Pre CPD	Post CPD
<p><i>I see mathematics as an interconnected network of ideas which I and my students must create and work on together. There are many links between topics. I see teaching as a non-linear dialogue in which meanings and connections are explored and refined through discussion. This means that, more often than not, I follow up ideas arising from the class. I cannot always predict in which direction the lesson will take beforehand. I see learning as a collaborative activity based on exploration and discussion.</i></p> <p>Students seem to like to be organized and prefer to be told what to do. They are not responsible enough and need my guidance and the structure I provide. I think it is important to get to know your students and try to establish a relationship with them first. I am not too hard on them. I also know what students should learn in each lesson. I try to understand their situation and help them to overcome their challenges.</p> <p><i>It is more important for students to develop conceptual understanding rather than computational skills. I am willing to spend time discussing mistakes and errors.</i></p> <p>I spend a third of the time explaining and leading discussion, with the rest of the time devoted to students working on tasks in pairs or in small groups. I make sure to involve students in thinking about the question and to engage them in the discussion. I use whole-class discussions in which I try to involve the students. I deal with student difficulties individually while I go around the class. When problems crop up, I stop the class to focus on specific questions.</p> <p>Desks are arranged in pairs. In my class, students work hard, collaborate and are always ready to participate and do the work I assign. However, <i>I feel much pressure to 'cover' the syllabus</i> and I want to make sure that students do well in their exams.</p> <p>My practices are not consistent with my beliefs about learning.</p>	<p><i>I see mathematics as an interconnected network of ideas which she and her students must create and work on together. There are many links between topics and there is no 'best' way to organise and teach topics. I see teaching as a non-linear dialogue in which meanings and connections are explored and refined through discussion. This means that, more often than not, I follow up ideas arising from the class. I cannot always predict in which direction the lesson will take beforehand. I see learning as a collaborative activity based on exploration and discussion.</i></p> <p><i>It is more important for students to develop conceptual understanding rather than computational skills.</i></p> <p>I just use the textbook to assign homework. I am not relaxed about syllabus coverage.</p>

Typical Lesson Structure

Pre CPD	Post CPD
<ol style="list-style-type: none"> 9. Pose oral questions to the students (<i>to discuss a mathematical concept</i>) 10. Devote time for student questioning 11. Give an explanation 12. Demonstrate examples 13. Provide notes (<i>during discussion</i>) 14. Give a challenging question 15. Assign work to be done individually 16. Assign work to be done in groups 	<ol style="list-style-type: none"> 1. Pose oral questions to the students 2. Devote time for student questioning 3. Give a challenging question 4. Ask students to explain their work 5. Assign work to be done individually 6. Give an explanation 7. Assign work to be done in groups <ul style="list-style-type: none"> • Provide notes (<i>built with students during the lesson</i>) • Demonstrate examples (<i>through discussion with students</i>)

SARAH

Pre CPD	Post CPD
<p><i>I think it is very important to get to know your students. I try to understand their situation and help them to overcome their challenges.</i></p> <p>It seems that if I do not do the talking, then there is not much teaching going on. This is parents' and students' views and expectations of a good teacher.</p> <p>I start each topic by explaining and demonstrating methods and procedures particularly with very low ability students. I re-teach each topic from the beginning just to check to what extent students know about the topic.</p> <p><i>I believe that students learn best when their own ideas are discussed and investigated. Meanings and connections are explored and refined through discussion. My practices are not consistent with my beliefs about learning.</i></p> <p>Students have the idea that mathematics is about working lots of problems from the textbook and trying to get as many of them correct as possible. I want to make sure that students do well in their exams, and I believe that every teacher wishes that their students do well in exams!</p> <p>I feel constrained and frustrated by the scheme of work. Sometimes yes, schemes of work restrict me from opening up more on certain topics.</p>	<p><i>I think it is important to get to know your students. I try to understand their situation and help them to overcome their challenges.</i></p> <p>I follow up ideas arising from the class. There is no 'best' way to organise and teach topics. I am willing to spend time discussing mistakes and errors when they arise, even if it takes considerable time. I spend time explaining and leading discussion. During this time, I go around prompting and guiding students.</p> <p><i>I believe that students learn best when their own ideas are discussed and investigated. Meanings and connections are explored and refined through discussion. I see mathematics as an interconnected network of ideas which I and my students must create and work on together.</i></p> <p>If questions are easy for some students, they can skip to the more challenging ones.</p>

Typical Lesson Structure

Pre CPD	Post CPD
<ol style="list-style-type: none"> 17. Pose oral questions to the students 18. Devote time for student questioning 19. Give an explanation 20. Provide notes 21. Assign work to be done individually 	<ol style="list-style-type: none"> 1. Pose oral questions to the students 2. Assign work to be done in groups 3. Ask students to explain their work 4. Devote time for student questioning 5. Assign work to be done individually (<i>only if I have 5 minutes to spare</i>) <ul style="list-style-type: none"> • <i>Sometimes, instead of work in groups, we do a whole class discussion where students answer questions directed by the teacher/students to arrive at a solution based on students' methods and not the teacher's.</i>