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### **Challenges that teachers face in teaching chemistry**

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Chemistry is a subject at collegiate level in Sri Lankan schools. Teachers' efforts in increasing achievement levels failed to produce good results at G.C.E advanced level. This study was aimed to understand the challenges that teachers face in teaching chemistry. A survey was conducted with 116 chemistry teachers of the central province. Based on the survey results, it was found that 60% teachers encountered problems in explaining some chemistry concepts, helping to develop subject matter knowledge of students and, getting the maximum benefit of available resources. Thirty teachers were selected to conduct semi-structured interviews to get detailed descriptions about the challenges they faced. For further clarifications, thirty students and eight university senior lecturers were interviewed. Ten chemistry classrooms were also observed to find out what was really happening in chemistry teaching. Data collected from multiple methods were analyzed. Major challenges that teachers faced were: making students' interest in learning chemistry using different ways of teaching, using assessments to help learning, managing class time to cover the syllabus, getting students' attendance and, developing positive attitudes towards chemistry learning. 81% of the teachers did not use assessments to help learning, 93% reported poor attendance. Although teachers believed that in-service programmes are helpful in their capacity building, they did not have enough sessions. Even in the programmes they attended, instructors were failed to provide solutions to the problems they had in teaching and assessing students. Practical classes were not organized effectively. It was found that practical work was isolated from chemistry teaching. 68% of the teachers reported that they were not adequately trained for developing practical skills and 91% used only the lecture method and presented facts. These teachers failed to involve students in classroom activities and the homework given was also not crafted to arouse curiosity of students. It is recommended that chemistry teachers' should be given professional development programmes continually to develop their pedagogical content knowledge and pedagogical skills. In these sessions, there should be opportunities for teachers to work collaboratively to use alternative approaches in teaching chemistry, assessments in students' learning and discussion sessions to help clarifying their doubts in teaching to develop self-confidence and capacity building.