Strengthening Chemistry for Out-of-field Teachers of Science (SCOTS) Professional Learning Program

Job Description: Coach

Overview

We are seeking experienced chemistry educators to coach out-of-field secondary science teachers as part of our upcoming PL program. To be eligible for a coaching role, you will:

- be familiar with the Victorian Curriculum 2.0 for Year 7 - 8 science.
- have a highly nuanced conceptual understanding of chemistry have mentored less experienced and/or out-of-field teachers and understand the challenges they, and their students face.
- have had experience teaching chemistry through practical activities.
- be personable, empathetic, and know how to build confidence in teacher colleagues.

Coaches will support groups of five out-of-field teachers who are participating in our semester-long PL program. Primarily, coaches will help teachers develop knowledge, confidence, and pedagogy to teach chemistry through practical activities. This includes helping teachers customise their PL program to cater to their specific needs, meeting with individual teachers and coaching groups online, fostering a community of connection and support within coaching groups, providing point-of-need support to teachers outside of structured PL times, and attending SCOTS launch and completion events. There will also be an opportunity to participate in the research component of the project.

Role requirements

Program onboarding and training (5 hours)

- 3 hours for program familiarisation and training
- 2 hours University of Melbourne compliance training

Coaching role per coaching group (25 hours)

- 5 x teacher diagnostic reviews including PL pathway plan (5 hours)
- 10 x 1:1 online meetings – initial, then halfway (10 hours)
- 2 x 1 hour drop-in sessions for the coaching group, including 1 hour for preparation and 1 hour for follow up (4 hours)
- Attend PL launch and completion events (1 hour)
- Point of need support (5 hours)

Optional: Contributions to research project

- Reflective notes
- Pre- and post- coaching survey completion
- One hour for focus group
- This part of the role is subject to approval by a University of Melbourne Human Research Ethics application. Participating in this research project is an optional part of this role.

Coaches are encouraged to coach more than one group. Please state your capacity in the cover letter (e.g. 25 hours = 1 group, 50 hours = 2 groups, etc.)

In your application, please include:

- Cover letter
- Curriculum Vitae (1-2 pages)
- Responses to two of the following three hypothetical scenarios involving an out-of-field teacher. Your responses should be no longer than 250 words. Include:
    - Specific approaches you would use to support the teacher
    - Reasons why you believe those supports would be effective, including past experiences using this approach to support a colleague.
    - Your expected outcomes
- Submit your application by **9am Monday 25th May** as **a single PDF file** with **your name in the filename** to l.chiavaroli@unimelb.edu.au

Scenario 1 – Ellie

> ***Background:*** *Bachelor of Science (Psychology), Master of Teaching (Secondary), in her second year of teaching at a new school after a year of CRT work.*
>
> ***Current teaching load****: 1x Year 10 Psychology elective, 2 x Year 7 Science, and 2 x Year 7 Maths.*
>
> ***School context:*** *Recently opened outer metropolitan Prep – Year 9 public school. Lots of inexperienced teachers.*
>
> ***Science teaching experience:*** *Two classes while on placement during her Master of Teaching, as well as some CRT work.*

Ellie spends her Sunday nights revising her science classes using Edrolo and watching YouTube videos. She is trying to stay exactly two days ahead of her students. She relies heavily on free online slide decks and pre-made worksheets since there are few legitimate resources in her new school. She feels confident teaching biology because she did it in VCE, but she is anxious about teaching chemistry. She just never got it.

It's Tuesday morning, second period. Ellie stands at the front with her power point slides, explaining the difference between particles in a solid and particles in a liquid. When asked, "What's a particle, Miss?" She responds, "That's a fantastic question. I want you to find the

answer in the text and explain it to the class tomorrow. Learning to find information independently is a key skill!"

Ellie later confides in you that she had no idea how to answer the student's question, especially since it wasn't covered in any of the materials she reviewed. She felt stumped by the questions simplicity, but her lack of a deep enough understanding of particle theory.

How would you support Ellie to feel confident answering student questions about particles?

Scenario 2 - Mark

> ***Background:*** *Bachelor of Exercise and Sport Science, Graduate Diploma of Teaching (Secondary), 15 years teaching Physical Education (PE) and Health.*
> ***Current teaching load****: PE learning area leader, 2 x Year 10 PE, and 2 x Year 8 Science*
> ***School context:*** *Regional public school with significant staff shortages, especially in science.*
> ***Science teaching experience:*** *Two Year 7 Science classes, three years ago.*

Mark is supposed to run an experiment on indicators of chemical change. Mark, trained for the gym, feels uncertain about laboratory and chemical safety. He prefers not to conduct in-depth experiments, often opting for a simulation on a computer instead. He tells the students it is to focus on theory, but inwardly he is terrified of mishandling chemicals and equipment.

Mark can't find a simulation on indicators of chemical change. After school, he confides in you his apprehension to run the experiment and concerns about laboratory safety.

How would you support Mark to feel confident in running this practical activity?

Scenario 3 - Christine

> ***Background:*** *Bachelor of Arts (Anthropology), Master of Teaching (Secondary), in her third year of teaching.*

***Current teaching load**: 1x VCE 1/2 History, 2x Year 9 Humanities, 2x Year 7 Humanities, 1x Year 8 Science*

***School context:** Inner-city school, culturally and linguistically diverse student cohort.*

***Science teaching experience:** None but enjoyed science at school and volunteered to teach a Year 8 science class this year.*

Before the chemistry topic, all Year 8 students are given a quiz to test for any misconceptions. Christine completes the test the week before the students. Two of the test questions are shown below. Christine selects 'A' for both questions.

1. When a block of iron is heated and turns into liquid iron (melts), what happens to the individual iron atoms?
A. The atoms expand.
B. The atoms contract.
C. The atoms stay the same size.
D. The atoms break apart.

2. Which statement about the particles of the same substance in a solid, liquid, or gas state is TRUE?
A. Particles in a gas are larger than particles in a solid.
B. Particles in a solid are smaller than particles in a liquid.
C. Particles in a solid, liquid, and gas are all the same size.
D. Particles in a solid are larger than particles in a gas.

You are Science Learning Area Leader and a trusted mentor to Christine. You are the only other staff member in the office when she submits her responses and realises they are incorrect. She comments to you that she is confused why her answers are wrong. She was sure they were correct.

How would you support Christine to conceptually correct her misconception?