



Main Difficulties in Teaching Chemistry in Secondary Schools

TEACHERS' CASE STUDY

Teacher's Case Study N.: 3

Subject Taught, Place: Maths and Sciences (lower secondary school), Genova (Italy)

Description of the Case Study

The teacher we interviewed thinks that main difficulties for students in learning chemistry at school are "linked to the fact that chemistry is difficult to focus and to control". As a teacher the difficulty is that she is worried to give wrong and rough models to her students, because she thinks she doesn't know much about chemistry and also books contain many mistakes.

The teacher thinks that many young people quit learning chemistry and, in general, scientific studies after upper secondary school because these universities provide low level professional opportunities: she can't imagine how to motivate the students to take up scientific studies because there should be actions also on the job market and on the University-employment link.

She doesn't know any initiatives in the field of promoting lifelong learning and she hasn't any suggestion.



Interview: teacher n.3 (English)

1. What do you think the reasons for major difficulties in learning chemistry at school are? (lack of basic requisites, cognitive problems linked to some contents, other). (Please justify your answer.)
Students have requisites. Obstacles are linked to the fact that chemistry is difficult to focus and to control.

2. What major difficulties do you have in teaching chemistry? (lack of labs, lack of time, other) (Please justify your answer.)
As a teacher I'm usually worried to give wrong and rough models, because I don't know much about chemistry. After all also books contain many mistakes.

3. What kind of courses - if any - on didactics of chemistry did you attend? (Please specify whether the courses were based mainly on theory or on practice)
None.

4. Why do many young people quit learning chemistry and, in general, scientific studies after upper secondary school? (conviction that chemistry is difficult, or that a particular attitude is needed, other.) (Please justify your answer.)
I think the main reason is low level professional opportunities.

5. How could young people be helped take up scientific studies after upper secondary school? (Please justify your answer.)
I don't know, because there should be an action also on the job market and on the University-employment link.

6. Which initiatives has your country undertaken in this direction?
I don't know.

7. Have you ever taken part into a research project concerning scientific learning?
In the past I worked with university teachers involved in teaching maths methodology.

8. Could you mention any recent research you have heard of, that might be useful to our project?
I don't know.

9. Could you suggest any other areas of research that might be useful to our project?
I don't know.



Interview: teacher n.3 (Italian)

1. A cosa si devono le maggiori difficoltà che gli studenti trovano nello studio della chimica a scuola? (mancanza dei requisiti di base, ostacoli cognitivi in alcuni contenuti, altro). (Argomenti la risposta).

I requisiti ci sono. Gli ostacoli sono rappresentati dal fatto che è poco controllabile, non visibile.

2. Quali sono le principali difficoltà che si incontrano dovendo insegnare chimica (assenza di laboratori, tempo insufficiente, altro) (Argomenti la risposta).

Come docente ho sempre il timore di dare modelli sbagliati, grossolani, perché di chimica so poco. D'altronde anche nei libri ci sono molte cose errate...

3. Ha mai frequentato corsi che trattavano tematiche inerenti alla didattica della chimica? Se sì, quali? (Specifici se i corsi avevano un'impostazione più prettamente teorica oppure pratica/laboratoriale.)

No.

4. Per quale motivo molti giovani abbandonano gli studi chimici (e, in generale, gli studi scientifici) dopo la scuola secondaria? (convinzione che la chimica sia "difficile", che sia necessaria una particolare attitudine, altro). (Argomenti la risposta).

Penso che il motivo principale sia legato agli sbocchi professionali bassi.

5. In che modo si potrebbero orientare i giovani a intraprendere studi scientifici dopo la scuola secondaria? (Argomenti la risposta).

Non saprei, perché si tratterebbe di intervenire anche sul mercato del lavoro e sul raccordo tra Università e lavoro.

6. Nel suo paese quali iniziative sono state messe in atto in questa direzione?

Non saprei.

7. Ha mai partecipato a progetti di ricerca sull'apprendimento scientifico?

Ho collaborato, in passato, con alcuni docenti universitari che si occupano di didattica della matematica.

8. Può citare qualche ricerca recente della quale è venuto/a a conoscenza e che potrebbe essere utile per il nostro progetto?

Non so.

9. Può suggerire altre aree di ricerca che potrebbero essere utili per il nostro progetto?

Non so.