

ENViL's competence model

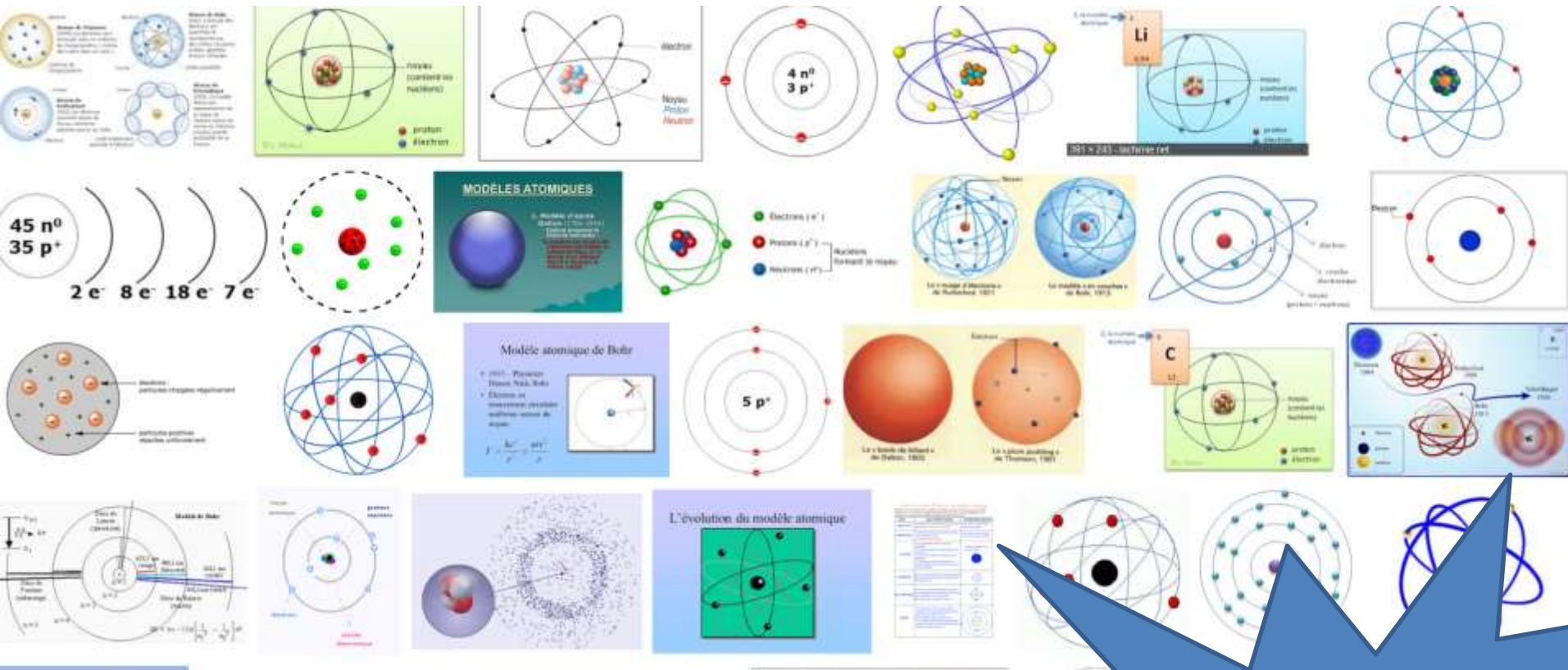
Model design in the context of educational models

What we can learn from science

ENViL's model is shaped on the base of survey on European curricula, thus it is a descriptive model on the one hand. But it is also based on the consensus of experts on the other hand, thus it is a prescriptive model as well.

In respect to the first issue we can use a descriptive model theory from sciences. There a model is a ***translation of a situation, a process, complex interrelations into a visual notion / concept / visualization***

A descriptive model can be wrong and misleading, like many atomic models

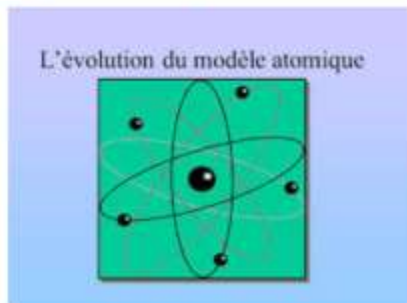
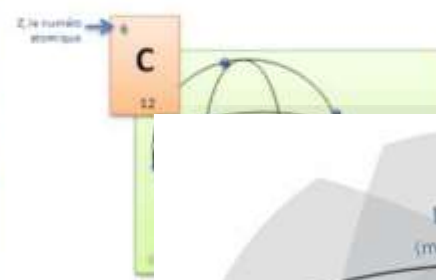
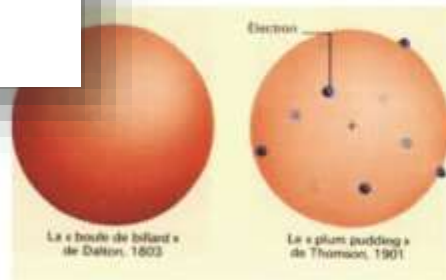
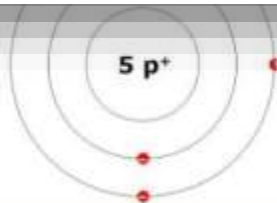
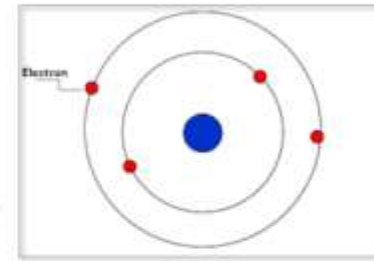
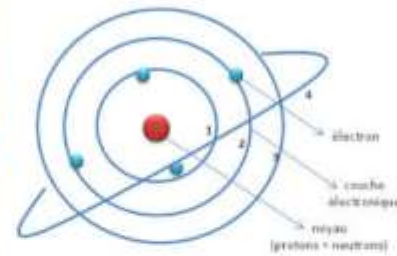
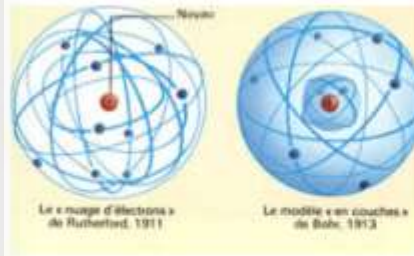
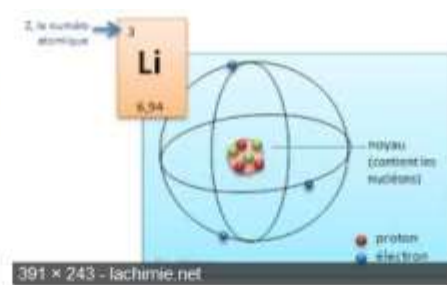
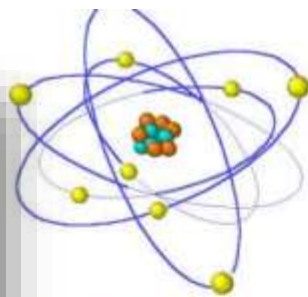
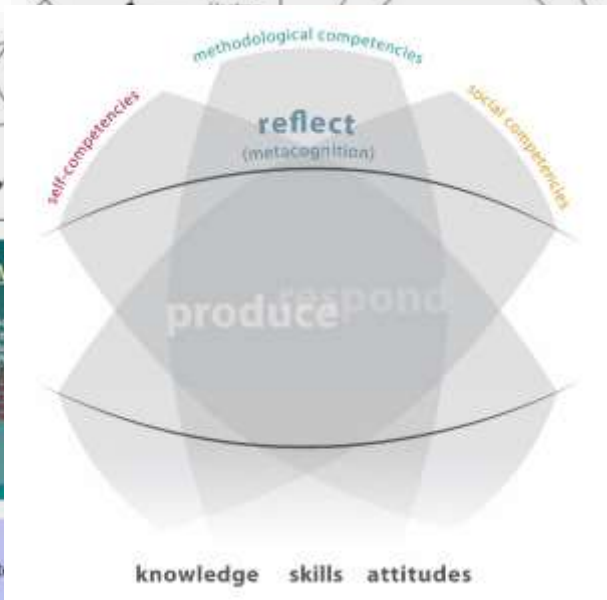


pre-concepts
unconscious,
implicit models

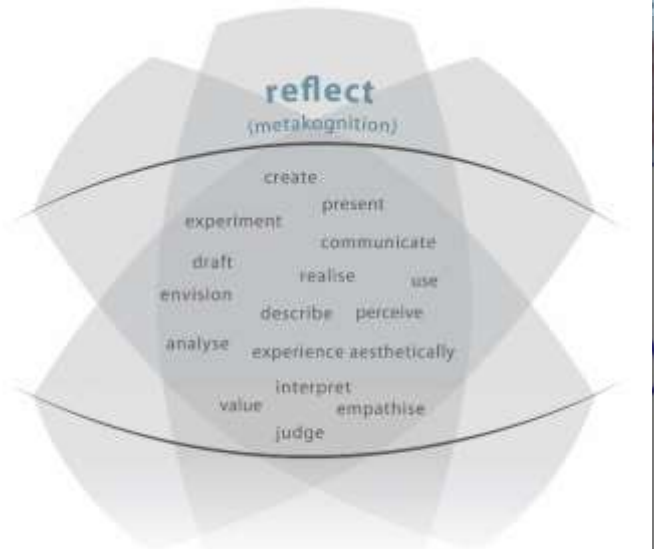
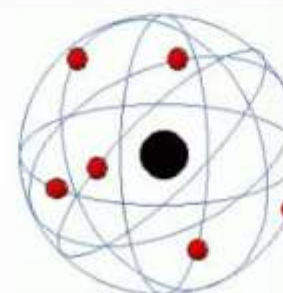
Descriptive Model Theory (Science)

To avoid misleading models, we have to define criteria. There are three main ***criteria***. A model must be:

- Not wrong: as little mistakes as possible, has to survive the discourses, cannot be falsified
- Simple: reduction of complexity
- Attractive: convincing, connected to traditions and expectations, clear and vivid, beautiful



Modèle	Propriétés	Limites
Modèle de Dalton (1803)	Atome sphérique et indivisible.	Ne tient pas compte de la structure interne.
Modèle de Thomson (1901)	Atome sphérique chargé positivement avec des électrons négatifs.	Ne tient pas compte de la structure du noyau.
Modèle de Rutherford (1911)	Noyau central positif avec électrons orbitant.	Ne tient pas compte de la stabilité de l'atome.
Modèle de Bohr (1913)	Orbitales discrètes et électrons en mouvement.	Ne tient pas compte de la mécanique quantique.
Modèle quantique (1926)	Orbitales probabilistes et électrons en mouvement.	Ne tient pas compte de la relativité.



Produce and respond to images/objects and reflect on production and response

Problems in developing models

(Is ENViL's model a universal model?)

Who speaks?

What is told by the model?

Which language is used (grammar, style, form)?

Which medium? Which genre?

Who is the addressee?

What are possible counter-models?