A short Note on the Experience of Using Concept Cases in a Master Level Course

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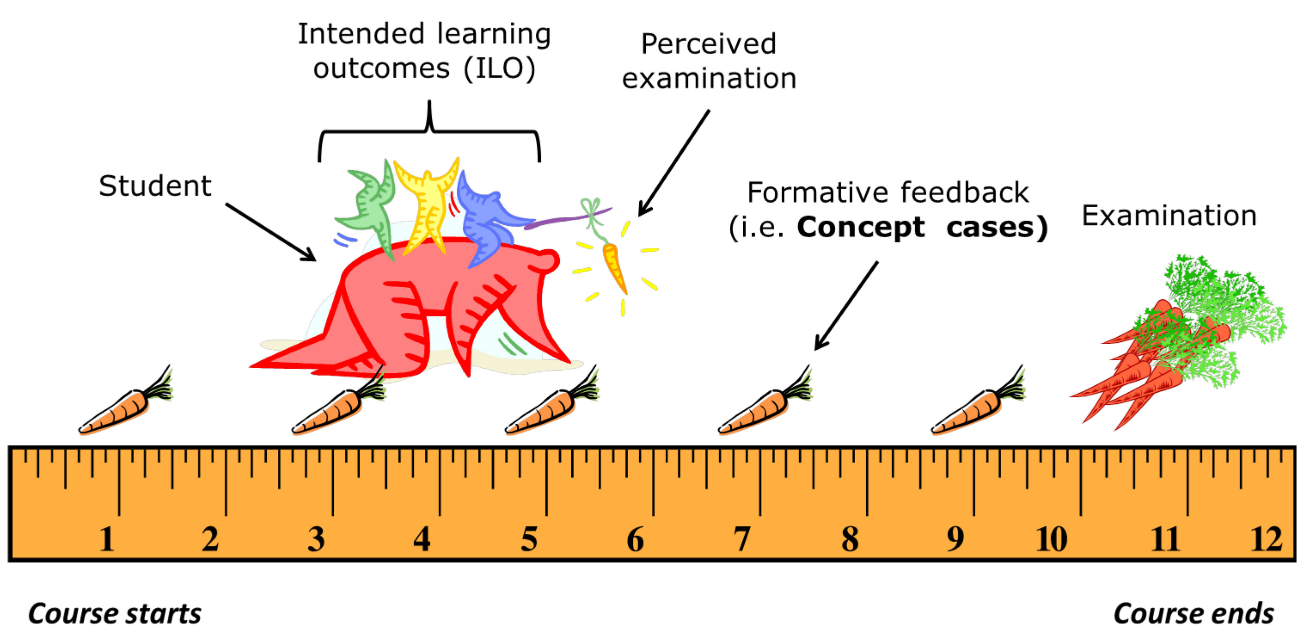
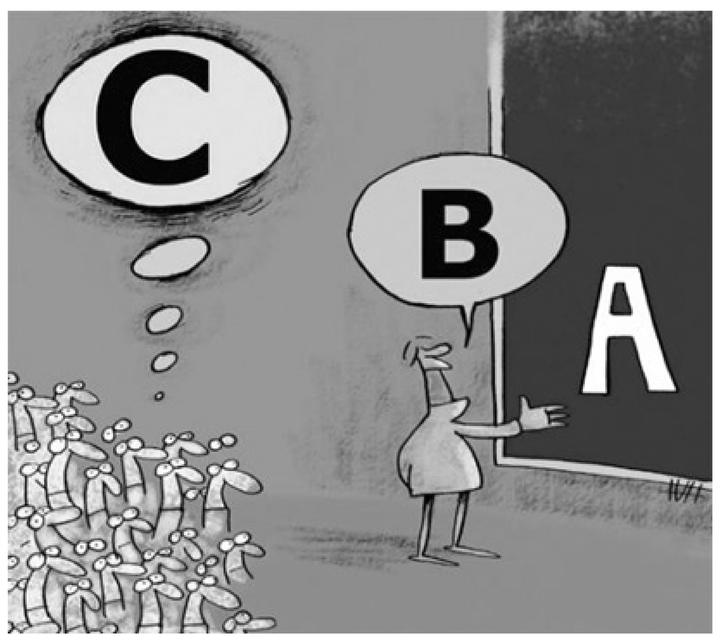
Why use concept cases?



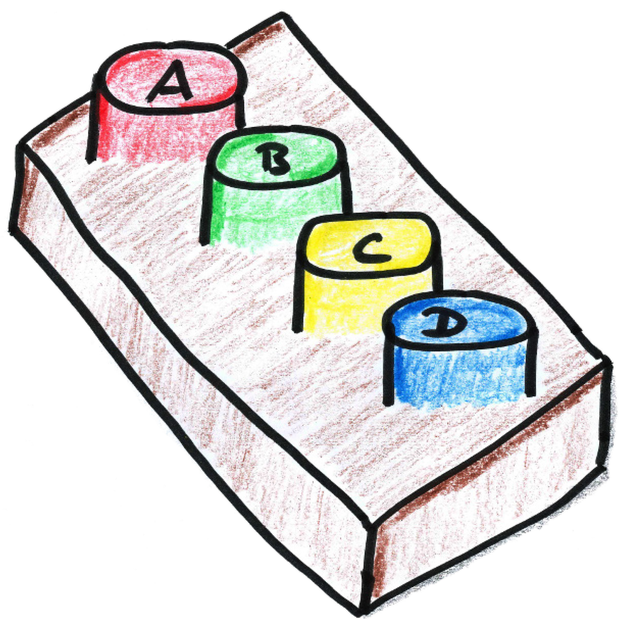
The student is guided forward by the ILO [1]. Formative feedback helps to create an accurate image of the final examination. Concept cases, used mid-lecture for adaptive teaching, give room for some more complexity than "traditional" concept questions [2]. However, this small expansion was found to bring design needs.

Key design issues found.

1) Clear introduction to correctly present the background situation and minimize misconceptions.



2) Rational multiple choice questions which would otherwise lead the students in some directions.

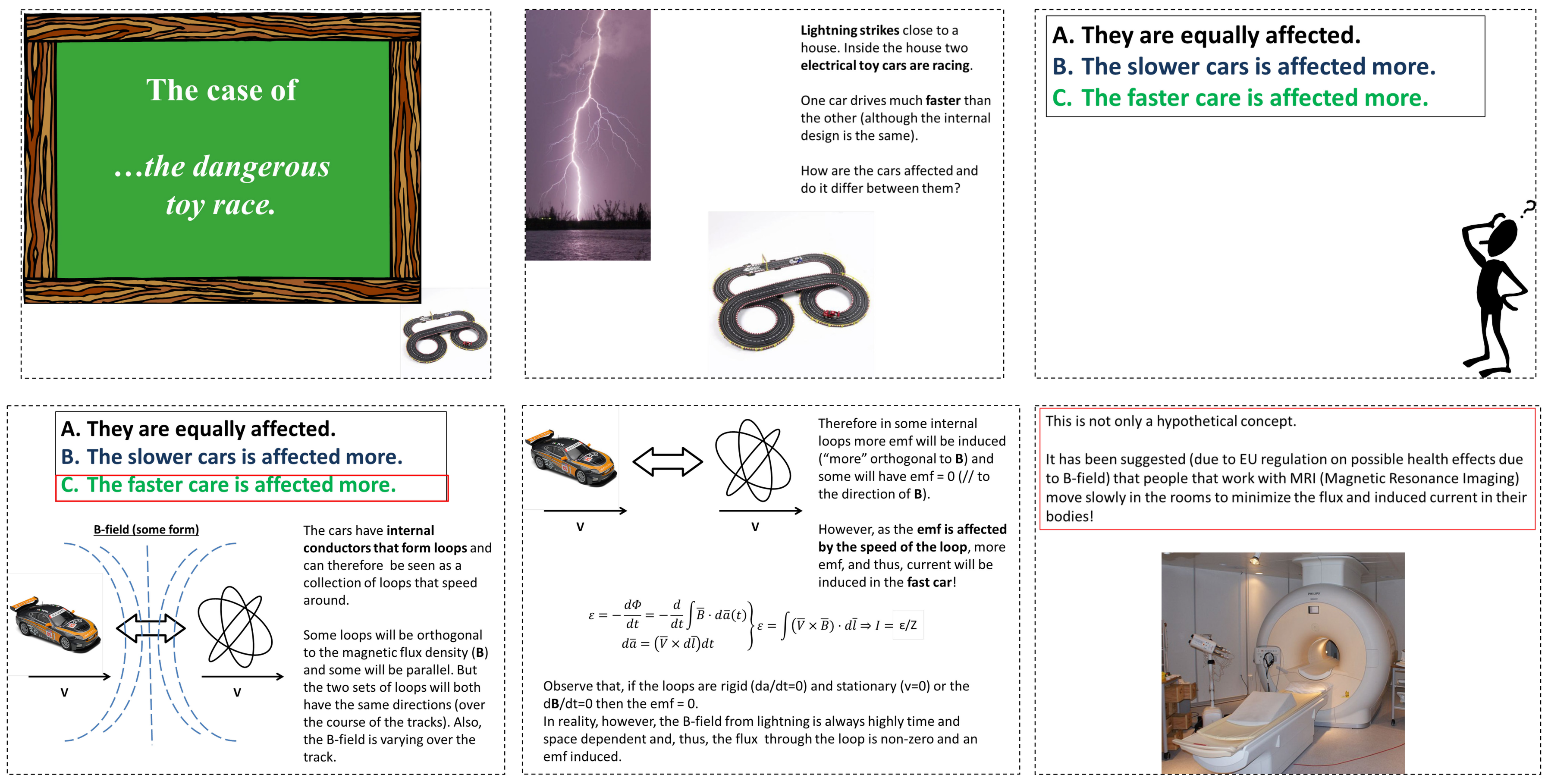


A) No.
B) Yes.
~~C) Banana.~~
D) Sometimes…

3) An open discussion amongst the students will reveal misconceptions to them and the teacher can adapt content accordingly.

4) Clear and distinct presentation of the answer and a class wide discussion followed by an **adapted lecture**.

Example of a concept case.



Conclusion

Conceptual learning activities are well suited for engineering classes but can require serious design decisions to be successful. It was seen that it otherwise could, due to confusion, hinder the learning environment.

References:

[1] J. Biggs and C. Tang, "Teaching for Quality Learning at University, 3rd ed.", 2007.

[2] E. Mazur, "Peer Instructions – A user's Manual", 1997.

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