

THE USE OF ANALOGIES BY FUTURE PHYSICS TEACHERS DURING ACTIVITIES OF SUPERVISED INTERNSHIP

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According to Silva and Terrazzan (2011), analogies are normally used in people's daily lives, generally relating knowledge in an unfamiliar domain (target) with everyday knowledge (analogue). This research aimed to investigate how analogies have been used in Physics teaching, particularly during Thermology classes conducted by future physics teachers during a supervised internship. The future teachers taught the classes in two schools: one regular High School and the other for Youth and Adult Education (YAE). Data were obtained from recordings and transcripts of these classes and analyzed qualitatively using the Teacher with Analogies (TWA) model for creating analogies, adapted from Harrison and Treagust (1994), Bozelli (2005) and Duit (1991), as one of the main forms of analysis. Altogether, nine analogies used by the future Physics teachers were identified. Eight of them fulfil their role as analogies and, when analyzed, only three are free from misunderstandings by those who listen to them. In addition, differences were identified in the use of analogies between the two schools; since in the YAE School the teachers provided more details than in the High School, the analogies were more direct. We concluded that no student made use of analogies and that the teachers used them to exemplify and contextualize the contents and target concepts. In addition, we highlight the need to implement discussions aimed at formulating analogies within Physics teacher training courses.

REFERENCES

Bozelli, F. C. (2005) Analogias e Metáforas no Ensino de Física: o discurso do professor e o discurso do aluno. Master's Thesis in Science Education (Bauru: São Paulo University – Unesp), p.203.

Duit, R. (1991) On the role of analogies and metaphors in learning science. Science education, 75(6), 649-672. https://doi.org/10.1002/sce.3730750606

Harrison, A. G. & Treagust, D. F. (1994). Science analogies. Science Teacher, 61(4), 40-43.

Silva, L. L. & Terrazzan, E. A. (2011) As analogias no ensino de conteúdos conceituais, procedimentais e atitudinais em aulas de Física do ensino médio. *Experiências em Ensino de Ciências*, 6(1), 133-154.

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