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Problem-based Learning and Team Learning – Evaluation of an integrated dermatology-pharmacology session in a reformed medical curriculum

Abstract

Integrated curricula promote student centred learning but are sometimes considered to run the risk of missing essential learning objectives by teachers. In this study we assessed the efficacy of a short course combining problem-based learning and elements of team learning with particular emphasis on mastering of certain learning objectives qualitatively and quantitatively.

Seven groups of six to 12 students were confronted with two problem-based dermatology-pharmacology related cases in an undergraduate course during three in-class sessions of one hour each. In addition, team-learning elements were integrated in the sessions. Multiple choice tests were used to compare pre-session and post-session knowledge, and student comments were recorded.

In each group the post-session test yielded significantly higher scores (89-100 % correct answers) compared to the pre-session test (40-69 %; $p < 0.01$). There was no correlation between the pre-session and the post-session test results, indicating that the latter in fact represent the knowledge gained during the sessions. All groups considered the session format as excellent, and six out of seven groups considered the combination of team learning elements and problem-based learning to be superior to problem-based learning alone.

In conclusion, team learning elements can be successfully added to problem-based learning in order to master pre-defined learning objectives.

Keywords

Problem-oriented learning, team learning, evaluation, integrated curriculum, student-centred learning

Literaturverzeichnis

Baroffio,A., Giacobino,J.P., Vermeulen,B. & Vu,N.V. (1997). The new preclinical medical curriculum at the university of Geneva: Processes of selecting basic medical concepts and problems for the PBL learning units. Scherpbier, A. J. J. A., VanderVleuten, C. P. M., Rethans, J. J., and VanderStee, A. F. W. *Advances in medical education*. S.498-500. Dordrecht, Kluwer Academic Publishers.

Barrows,H., Tamblyn,R., Gliva,G., Baxter,D., Murray,J. & Dunne,P. (1979). Design and evaluation of problem-based learning units in neurology. *Transactions of the American Neurological Association*. Jg. 104:236-238.

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- Barrows,H.S., Mitchell,D.L.** (1975). An innovative course in undergraduate neuroscience. Experiment in problem-based learning with 'problem boxes'. *British Journal of Medical Education*.Jg. 9(4):223-230.
- Barrows,H.S., Tamblyn,R.M.** (1980). Problem-based learning. An approach to medical education. New York, Springer.
- Bortz,J.** (1985). Lehrbuch der Statistik für Sozialwissenschaftler. Berlin, Heidelberg, New York, Tokyo, Springer.
- Brosius,F.** (1998). SPSS 8.0. Professionelle Statistik unter Windows. Bonn, MITP-Verlag.
- David,T.J., Dolmans,D.H., Patel,L. & van der Vleuten,C.P.** (1998). Problem-based learning as an alternative to lecture-based continuing medical education. *J.R.Soc.Med.*, Jg. 91,S.626-630.
- Dolmans,D.H., Gijsselaers,W.H., Schmidt,H.G. & van der Meer,S.B.** (1993). Problem effectiveness in a course using problem-based learning. *Acad Med*, Jg. 68,S.207-213.
- Flehsig,K.-H.** (1996). Kleines Handbuch didaktischer Modelle. Eichenzell, Neuland Verlag für lebendiges Lernen.
- Gijsselaers,W.H.** (1996). Connecting problem-based practices with educational theory. Wilkerson, L. and Gijsselaers, W. H. Bringing problem based learning to higher education: theory and practice 68. S.13-21. San Francisco, Jossey-Bass, Inc.
- Glasgow,N.A.** (1997). New curriculum for new times. A guide to student-centered, problem-based learning. Thousand Oaks, Corwin Press.
- Hunt,D.P., Haidet,P., Coverdale,J.H. & Richards,B.** (2003). The effect of using team learning in an evidence-based medicine course for medical students. *Teaching & Learning in Medicine*, Jg. 15,S.131-139.
- Jones,R., Higgs,R., de Angelis,C. & Prideaux,D.** (2001). Changing the face of medical curricula. *Lancet*, Jg. 357,S.699-703.
- Leeder,S.R., Sackett,D.L.** (1976). The medical undergraduate programme at McMaster University: learning epidemiology and biostatistics in an integrated curriculum. *Medical Journal of Australia*. Jg. 2(23): 878-80.
- Levine,R.E., O'Boyle,M., Haidet,P., Lynn,D.J., Stone,M.M., Wolf,D.V. & Paniagua,F.A.** (2004). Transforming a clinical clerkship with team learning. *Teaching & Learning in Medicine*, Jg. 16,S.270-275.
- Ludmerer,K.M.** (16-9-2004). Learner-Centered Medical Education. *N Engl J Med*, Jg. 351,S.1163-1164.
- Maerz,R., Stein,J.I.** (1998). Medizinstudium 2000. Alternatives for Learning and Assessment, Teaching and Evaluation. *ZS.f.HD.*, Jg. 22(4),S.3-140.
- Michaelsen,L.K.** (1999a). Myths and methods in successful small group works. *National Teaching and Learning Forum*, Jg. 8,S.1-4.
- Michaelsen,L.K.** (28-10-1999b). Three keys to using learning groups effectively. <ftp://www.ntlf.com/ntlf/3keys.doc>,
- Struijker Boudier,H.A., Smits,J.F.** (2002). Problem-based learning: the Maastricht experience.[comment]. *Trends in Pharmacological Sciences*. Jg. 23(4):164

Sweeney,G.D., Mitchell,D.L. (1975). An introduction to the study of medicine: phase I of the McMaster M.D. program. *Journal of Medical Education*, Jg. 50,S.70-77.

van Til,C., van der Heijden,F. (1998). PBL study skills: an overview. Maastricht, Vakgroep O&O.