“Promoting Teacher Expertise: The Relation of Individual Prerequisites and Instructional Processes in Computer-supported Case-based Learning Environments”

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Case-based Learning with Digital Videos

Does it Promote the Professional Development of Teachers and Trainers in Adult Education?

Dipl. Päd. Annika Goeze M.A.
Questions of our Workshop

(1) Which methods can be used to measure the effects of teacher training?

(2) What do we know about teacher training effects?

Forms of (Continuing) Teacher Education

- Analysis and reflection
- Transference of knowledge
- Hands-on training of teaching performance
- Case-based learning as a means to develop the competency to diagnose pedagogical situations which is considered a prerequisite for professional performance
Concept of Computer-supported Case-based Learning for Teachers’ and Trainers’ Professional Development

- work with documented, complex video-cases from educational practice not known to the learners

  case =
  finished, authentic classroom situation, which is exemplary for the every day work of teachers and trainers in the adult education sector

- Use of computer-supported learning environment

- Analysis and interpretation of 10-15 minute cases

Professionalism can be characterized

- by one’s ability „to make adequate use of a broad, scientifically sound and thus in many ways abstracted knowledge in concrete situations, or vice versa: to recognize in such situations which elements from the pool of knowledge might be relevant“ (Tietgens, 1988, p. 37)

- by one’s ability to adopt multiple perspectives on single issues (Nittel, 2000)
Competency to Diagnose Pedagogical Situations

Prerequisite: Existence of differentiated, conceptual knowledge

3 cognitive components quantitatively and qualitatively measured:
- the ability to depict pedagogical situations
- the ability to adopt teacher and learner perspectives
- the ability to apply theoretical knowledge

General Research Question

How can the competency to diagnose pedagogical situations be fostered by computer-supported case-based learning?
Train the Trainer Course = Experimental Setting

4 Experimental groups with pre-service trainers 4 x 21 persons → 84 novizes
4 Exp. groups with experienced in-service trainers 4 x 21 persons → 84 experts

Pretest: case A
Control Variables
Theoretical concepts
Knowledge test
1. day 2. day 3. day 4. day

Posttest: case F
Knowledge test
Reflection, discussion, Feedback
Follow-up
2 or 4 months later

Training-Period:
1 of 8 experimental group conditions

2 x 2 x 2- factorial Design

<table>
<thead>
<tr>
<th>Hyperlinks to theoretical, (subject-) didactical concepts</th>
<th>Degree of experience</th>
<th>Hyperlinks to other perspectives</th>
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<tr>
<td>given</td>
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<td>acquisition of the competency to diagnose pedagogical situations</td>
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Dependent Variable:
Promoting Teacher Expertise…

Deutungskompetenz

Verhalten der Kleingruppen (12:40)

Notizblock

1. Was denkst du, dass du jetzt wissen könntest, was du jetzt nicht hast?
2. Warum hättest du denken müssen, dass du nicht alles wissen kannst?
3. Wie kannst du diese Fähigkeit entwickeln?

Verhalten der Kleingruppen (12:40)
Concrete Research Question

How can

- hyperlinks to multiple perspectives,
- hyperlinks zu conceptual knowledge
- and a combination of both

promote the competency to diagnose pedagogical situations in a case-based learning environment among teachers with different degrees of experience?
Deutungskompetenz

Project: Promoting Teacher Expertise...

Depiction of the case
Codesector 1a and 1b
quantitative + qualitative
Subscore = Score Depiction

Adoption of perspectives
Codesector 2
quantitative + qualitative
Subscore = Score Perspectives

Theory application
Codesector 3
quantitative + qualitative
Subscore = Score theory application

Total Score
competency to diagnose pedagogical situations
Hypothesis 1
Experimental groups with theory offerings (hyperlinks) increase more theory application in the case analyses than experimental groups without theory offerings (hyperlinks).

Hypothesis 2
Experimental groups with perspective offerings (hyperlinks) increase more adoption of perspectives in the case analyses than experimental groups without perspective offerings (hyperlinks).

Post-Hoc-Contrasts with Bonferroni-Corrections
Deutungskompetenz

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Theory application

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- only theory offering
- theory- and perspective offering
- only perspective offering

Post-Hoc-Contrasts with Bonferroni-Corrections

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Forms of (Continuing) Teacher Education

- analysis and reflection
- as a bridge between „knowledge“ and „competence“
- hands-on training of teaching performance

Case-based learning is a means to develop the competency to diagnose pedagogical situations which is considered a prerequisite for professional performance
Questions of our Workshop

(1) Which methods can be used to measure the effects of teacher training?

(Quasi-)experimental pre-post intervention studies – conducted in the field instead of the lab – can help to generate externally and internally valid knowledge on the effectiveness of teacher training programs.

(2) What do we know about teacher training effects?

Results of our research show how teacher expertise can be promoted using video-case-based learning as a means for the professional development of the teaching personnel in the adult education sector.

Case-based Learning with Digital Videos

Does it Promote the Professional Development of Teachers and Trainers in Adult Education?
Thank you for your interest!