

Investigating Vocational Teachers' Informal Workplace Learning Using Experience Sampling

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Acknowledgement

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Abstract

...

Keywords: workplace learning, teacher training, informal learning, experience sampling, multilevel modelling

1 Introduction

[Schools as learning venues for teachers in the sense of workplace learning] While schools are learning venues for teachers, they also are teachers' workplaces (<https://www.tandfonline.com/doi/epdf/10.1080/0158037X.2024.2314128?needAccess=true>) and therefore serve as context for teachers' workplace learning (Billett, 2001; workplace affordances, ...).

[highlighted under today's current conditions]

[Importance and relevance of professional learning]

[Comparison informal and formal workplace learning]

Professional learning is

According to Rausch (2014), ...

- teacher shortage and difficult working conditions of teachers
 - stress, coping are important
 - learning of teachers has a particular important role
 - * teachers have to prepare their lessons and
 - * furthermore, teachers need to stay up to date
 - * The teaching profession has a particular set of characteristics and job demands. At the same time, teachers are provided with a high degree of freedom or job decision latitude. -> Karasek: learning hypothesis
 - vocational schools are under-represented in studies (). while there is research tackling other schools, still very little research on vocational schools.
- lack of research on teachers at vocational schools ()
 - experience sampling

In Böhm et al. (2024), results from the study were described with a focus on teachers' working hours and the distribution of working hours between different tasks. Building on this article, this paper will focus on teachers' workplace learning. Thus, the following research questions will be tackled:

1. RQ (Stress, coping and learning across activities, control for age, sex, jobscope + data from the questionnaire study) - MLM
Which of teachers' daily work activities are perceived as (a) the most stressful and (b) with which of the stressful activities could the teachers cope the best? (c) Which of teachers' daily activities are perceived as the most conducive to learning?
2. [Description of the Learning (freetext fields, qualitative analysis)]
3. RQ (Karasek, control for age, sex, jobscope + data from the questionnaire study) - MLM
Do stress and coping predict informal learning in teachers' daily work activities, as stated in Karasek's learning hypothesis?
H: according to Karasek

include a participation effect (control for a bias) H: higher participation -> bigger pc_learn Can time effects be found in the data? Does continued experience sampling have an effect on perceived informal learning?

2 Research on Teachers' Workplace Learning

2.1 Characteristics of the Teaching Profession and Vocational Teachers' Daily Work Activities

2.1.1 Characteristics

- High degree of freedom in the profession
- subject (especially in vocational schools).
 - -> high demand to learn
- Needed: Alternative to Rothland (2013)???
 - Multiple sources that describe the characteristics
- teacher stressors and coping (briefly): outline from research on teacher stress
 - -> Lazarus & Folkman (for Stress)

2.1.2 Teachers' Daily Work Activities

- Overview teachers' work activities (framework from the literature)

2.2 Workplace Learning and Vocational Teachers' Learning Activities

- formal, non-formal vs. informal WPL (so far from bwpat!!!)
- how do teachers learn?
- include selected frameworks from literature (NK, MA)

In workplace learning, researchers typically differentiate between formal, non-formal and informal learning (e.g., Coombs & Ahmed, 1974; Imants & van Veen, 2010). Formal learning is typically defined as structured learning in pedagogical settings such as university teacher training. In these settings, learning occurs intentionally and is planned (Marsick & Watkins, 2015; UNESCO Institute for Statistics, 2012). Non-formal learning is “institutionalized, intentional and planned” as well (UNESCO Institute for Statistics, 2012, p. 11) but in contrast to formal learning, it is not part of the national qualifications framework but includes training and development in companies (Bilger et al., 2013, p. 20) such as information resources for further teacher training. In contrast, informal learning is unintentional and experiential. It occurs as a by-product of other activities such as working (e.g., Marsick & Watkins, 2015, p. 6; UNESCO Institute for Statistics, 2012, p. 19). This learning is also referred to as implicit learning (Eraut, 2004) or incidental learning (Marsick & Watkins, 2015). Though less conscious, this informal learning is considered as a vital source of teachers' professional development. Work task characteristics that foster informal workplace learning include newness, complexity, collaboration and so forth (Hoekstra, 2007; Lohman, 2003; Rausch, 2013; Kwakman, 2003) many of which, as discussed above, are also likely to cause stress (Karasek, 1979).

- Billett?!
- Karasek
 - Studies on Karasek
 - * The Job Demand-Control (-Support) Model and psychological well-being: A review of 20 years of empirical research (<https://doi.org/10.1080/026783799296084>)
 - *

1. Billett and others (which characteristics of the situation and the activity foster learning?!)
 2. Consideration of stress (Karasek, ...)
 - use stress as a characteristic of activities to introduce Karasek (and briefly talk about negative consequences: Lazarus & Folkman)

get concrete: Teachers' Learning Activities

2.3 Learning Outcomes from Vocational Teachers' Workplace Learning

- Goal: categorizing learning outcomes that stem from teachers' informal workplace learning
- For this, existing frameworks from workplace learning literature are analyzed and compared
- Then, a category framework is developed deductively from existing frameworks and then adjusted inductively from the results from this study.

2.3.1 Eraut (2004)

8 categories:

-
-

2.3.2 Tynjälä (2013, 3-P model)

2.3.3 Kyndt et al. (2013)

2.3.4 Cerasoli et al. (2018)

2.3.5 Park (2020)

2.3.6 Smet et al. (2022)

→ also consider additional frameworks from teacher professional development

2.4 Job Demands and Job Resources in the Teaching Profession

2.4.1 Job Demands / Stress

2.4.2 Job Resources / Coping

2.4.3 The Effect of Job Demands / Stress and Job Resources / Coping on Vocational Teachers' Workplace Learning

3 Description of the Longitudinal Study

3.1 Research Design and Sample (1 = M, 0 = W)

This study is part of a research programme (AARL-BS) which was initiated to investigate the relations between working hours, work activities, and work experience, such as learning, stress and coping of teachers

at vocational schools. Data was collected in two studies, an online survey study and an app-based diary study. This allowed for balancing the advantages and disadvantages of the respective methods regarding the estimation of working hours and the measuring of work experience, in particular. Participation was voluntary and all participants provided written informed consent.

3.1.1 Questionnaire Study

The survey study was conducted from February to November 2022. A sample of 1,146 full-time teachers participated in the survey study, 74.3 % of which held no further management function beyond their teaching duties. The mean age was 46.98 years and 39.1 % of the sample is female. The distribution of the survey sample is representative for vocational teachers in the German federal state of Baden-Wuerttemberg with regard to gender, age composition, level of employment, and administrative district.

In the survey study, data on teachers' working time, the distribution of the working hours between different tasks, working conditions, job satisfaction, and further constructs were collected. The questionnaire was developed on the basis of a comprehensive literature review (Aprea & Sarochan, 2023) and intensive consultations with representatives of the Association of Vocational School Teachers in Baden-Württemberg (BLV). See the other papers

3.1.2 Diary Study (go more into detail here, ESM, design)

The diary study took place from mid-March to mid-October 2022, including weekends and vacation periods, excluding four weeks during the summer holiday. A multi-cohort design was chosen to reduce participant burden. Each of the five cohorts held the diary for one week and paused for four weeks. The diary app was implemented using mQuest by the German online service provider ClueteC (Karlsruhe). Diary entries from 145 full-time teachers were included, 75.2 % of which without a management function. The mean age is 44.99 years and 46.9 % of the sample is female. After intensive data preparation and filtering, the analysis is based on 10.327 activities that were reported in the diary app.

The participants were requested to record all work-related activities by selecting the respective work activity from a given list of activities, indicating start and end time and answering one item each for experienced stress, coping, and learning related to the respective task. In addition, in a weekly review, the participants were requested to indicate the working hours for each day of the past week. During a cohort's diary period, three daily notifications reminded the participants to record their work activities.

3.2 Measures and Data Analysis

- Stress, Coping and Learning across the Daily Work Activities
 - Stress, coping and learning were all measured using 1 item scales self report
 - Description of the Developed Task Framework

From bwpat

Afterwards, the perception of stress, coping and learning at the given work activity are evaluated by the participants. (1) Stress, (2) coping and (3) learning are each designed with an 8-point Likert-scale with 0 as the lowest and 7 as the highest value. To avoid influencing entries with a default value, "-1" is set as the default value in these three items and must be changed to proceed. All three questions are depicted with a slider to set the value and a brief explanation: (1) Did you find this work activity stressful? (0 = not at all stressful; 7 = very stressful; -1 = invalid entry); (2) How well were you able to cope with this stress? (0 = not coped well at all; 7 = coped very well; -1 = invalid entry); (3) Did you learn anything new for your job during this work activity? (0 = learned nothing at all; 7 = learned very much; -1 = invalid entry). Based on theoretical assumptions, participants could only evaluate their coping for work activities with a stress-level above 0.

3.2.1 Learning Outcome Framework (RQ 2)

K. Kompetenzebene

KI. Individuum

Performanzebene

3.3 Data Analysis (still from bwpat)

Descriptive statistics were calculated to address RQ1 and RQ2. Regarding RQ3, a multiple level model was calculated to investigate the statistical prediction of vocational teachers' informal learning based on their stress and coping during their daily work activities, following Karasek's learning hypothesis. *Interaction terms were checked. However, moderators showed no significant effects, so no interactions were included in the final analysis.*

```
# if any objects are available in the global environment, remove them  
rm(list = ls())
```

4 Results

4.1 RQ1: Stress, Coping and Learning during Teachers' Daily Work Activities

- same approach as in bwpat paper: simple comparison of mean values and SDs across the activities
- numbers differ from results in bwpat article because of different sample size
- 29 activities?! -> decision needed! or 12 activities?!

Table 1: Correlations between Stress, Coping and Learning during Teachers' Daily Work Activities

Term	Stress	Coping	Learning
Stress	NA	0.5064154	0.2586342
Coping	0.5064154	NA	0.2284519
Learning	0.2586342	0.2284519	NA

```
## Warning: There was 1 warning in `mutate()`.  
## i In argument: `across(...)`.  
## Caused by warning:  
## ! Use of bare predicate functions was deprecated in tidymodels 1.1.0.  
## i Please use wrap predicates in `where()` instead.  
## # Was:  
## data %>% select(is.numeric)  
##  
## # Now:  
## data %>% select(where(is.numeric))
```

Table 2: Descriptive Statistics regarding Perceived Learning during Teachers' Daily Work Activities

Activity	Learning
----------	----------

		M	SD	Mdn
1	Classroom teaching	0.71	1.26	0.00
2	Classroom teaching: substitute teaching	0.75	1.50	0.00
3	Classroom teaching: preparation and follow-up of lessons	0.67	1.29	0.00
4	Tasks as a class teacher outside of classroom teaching	0.44	1.10	0.00
5	Interaction with students outside of lesson time	0.50	1.12	0.00
6	Interaction with colleagues	0.82	1.48	0.00
7	Interaction with external parties	0.90	1.55	0.00
8	Organization of the work environment	0.42	1.00	0.00
9	Supervision	0.20	0.77	0.00
10	Break	0.24	0.93	0.00
11	Recurring service routes	0.10	0.47	0.00
12	Training: formal	3.34	2.46	3.00
13	Training: non-formal	3.17	2.18	3.00
14	field trips, excursions	1.42	1.92	0.00
15	COVID-related tasks	0.23	0.92	0.00
16	Collaboration in committees and permanent teams	1.41	1.80	1.00
17	IT administration	0.88	1.47	0.00
18	Engagement in school projects	1.69	2.07	1.00
19	Exam-related tasks	0.85	1.55	0.00
20	Private school: supervision	0.72	1.36	0.00
21	Additional functions	0.95	1.57	0.00
22	Personal resource planning	0.45	1.02	0.00
23	Personnel management and selection	0.93	1.43	0.00
24	Exam administration	0.61	1.24	0.00
25	Management of internal school committees and teams	1.08	1.64	0.00
26	Student affairs	0.78	1.32	0.00
27	Interaction with the school board	0.99	1.46	0.00
28	Interaction with external parties	1.21	1.78	0.00
29	Miscellaneous activities	0.93	1.76	0.00

4.2 RQ2: Description of the Learning During Teachers' Daily Work Activities

Table 3: Outcomes of Vocational Teachers' Daily Work Activities (RQ2)

Activity	Number of LOs	Sum	Percentage
expansion of knowledge	684	1986	34.4410876
situational diagnostics	684	1986	34.4410876
consolidation of core competencies	121	1986	6.0926485
positive attitude towards teamwork	96	1986	4.8338369
ability to self-reflect	66	1986	3.3232628
awareness of the importance of conscientious, careful work	65	1986	3.2729104
conscientious, careful work	60	1986	3.0211480
composure	29	1986	1.4602216
learning new working methods	29	1986	1.4602216
joint planning and problem solving	19	1986	0.9566969
Break awareness and resource conservation	16	1986	0.8056395
awareness of the importance of serenity	10	1986	0.5035247
consolidation of own routine	10	1986	0.5035247
job dissatisfaction / frustration	9	1986	0.4531722

Activity	Number of LOs	Sum	Percentage
job satisfaction	9	1986	0.4531722
psychological safety	9	1986	0.4531722
awareness of the importance of concentration	8	1986	0.4028197
mutual support	6	1986	0.3021148
awareness of the importance of self-reflection	5	1986	0.2517623
emotional exhaustion	5	1986	0.2517623
emotional regulation	5	1986	0.2517623
effectiveness	2	1986	0.1007049
motivation	2	1986	0.1007049
ability to concentrate	1	1986	0.0503525
effectiveness at team level	1	1986	0.0503525
reduction of errors	1	1986	0.0503525
other	34	1986	1.7119839

4.3 RQ3: Learning Outcomes across Vocational Teachers' Everyday Work Activities

Table 4: Learning Categories across Vocational Teachers' Daily Work Activities (RQ2 (1))

LO category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Break awareness and resource conservation	2	0	2	0	0	3	0	0	0	7	0	0	0	0	0
ability to self-reflect	18	0	13	1	5	9	1	2	0	0	1	3	2	0	0
awareness of the importance of concentration	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0
awareness of the importance of conscientious, careful work	8	0	14	6	0	5	1	10	2	1	0	0	0	1	0
awareness of the importance of serenity	4	0	1	0	0	0	0	0	0	1	0	0	1	0	0
composure	13	0	2	0	0	3	0	0	0	0	0	2	0	1	0
conscientious, careful work	9	0	15	1	4	2	0	12	0	0	2	0	0	0	0
consolidation of core competencies	25	0	26	6	1	10	1	2	0	0	1	9	2	0	0
consolidation of own routine	2	0	5	0	0	1	0	0	0	0	0	0	0	0	1
emotional exhaustion	1	0	3	0	1	0	0	0	0	0	0	0	0	0	0
emotional regulation	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0
expansion of knowledge	58	4	159	11	15	77	16	19	2	4	1	66	67	5	2
job satisfaction	4	0	1	0	1	0	0	0	0	0	0	0	1	0	0
joint planning and problem solving	1	0	0	0	0	5	0	0	0	0	0	0	3	0	0
learning new working methods	9	0	6	0	1	4	0	0	0	0	0	5	1	0	0
motivation	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other	3	1	3	2	2	5	1	0	0	0	0	5	0	1	0
positive attitude towards teamwork	8	0	2	2	2	25	5	1	0	2	0	5	0	2	0
situational diagnostics	246	9	108	21	41	53	13	11	2	7	0	20	6	4	1
ability to concentrate	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
effectiveness	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
job dissatisfaction / frustration	0	0	2	1	0	0	0	0	0	1	0	0	0	0	0
mutual support	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0
awareness of the importance of self-reflection	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

LO category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
psychological safety	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
reduction of errors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
effectiveness at team level	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
sum	416	14	366	51	74	214	38	58	7	23	5	116	84	14	4

Table 5: Learning Categories across Vocational Teachers' Daily Work Activities (RQ2 (2))

activity	16	17	18	19	20	21	22	23	24	25	26	27	28	29	Total
Break awareness and resource conservation	0	0	1	0	0	0	0	0	0	0	0	0	0	1	16
ability to self-reflect	2	1	0	2	0	1	1	0	1	2	0	0	0	1	66
awareness of the importance of concentration	0	0	0	1	0	1	0	0	1	0	0	0	0	0	8
awareness of the importance of conscientious, careful work	2	1	0	3	0	2	0	0	2	0	1	2	2	2	65
awareness of the importance of serenity	0	0	0	1	0	0	1	0	0	0	0	0	0	1	10
composure	0	0	1	2	0	0	2	0	2	0	0	0	1	0	29
conscientious, careful work	1	0	0	2	0	1	2	1	3	2	0	0	2	1	60
consolidation of core competencies	11	0	1	6	1	8	1	4	0	3	1	0	2	0	121
consolidation of own routine	0	0	0	0	0	0	0	0	1	0	0	0	0	0	10
emotional exhaustion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
emotional regulation	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5
expansion of knowledge	26	16	19	31	1	32	6	5	4	9	10	2	8	9	684
job satisfaction	0	0	0	0	0	1	1	0	0	0	0	0	0	0	9
joint planning and problem solving	1	0	3	2	0	0	3	0	0	1	0	0	0	0	19
learning new working methods	0	0	0	0	0	2	0	1	0	0	0	0	0	0	29
motivation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
other	0	0	1	3	0	2	0	0	1	2	0	0	1	1	34
positive attitude towards teamwork	11	1	4	5	0	4	5	1	0	2	1	1	5	2	96
situational diagnostics	7	4	9	38	0	25	7	4	8	11	13	2	8	6	684
ability to concentrate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
effectiveness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
job dissatisfaction / frustration	1	0	1	1	0	1	0	0	0	1	0	0	0	0	9
mutual support	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6
awareness of the importance of self-reflection	0	0	1	0	0	1	1	0	0	1	0	0	0	0	5
psychological safety	1	0	1	0	0	0	0	0	0	0	0	0	0	1	9
reduction of errors	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
effectiveness at team level	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
sum	63	24	43	97	2	82	31	16	23	34	26	7	29	25	NA

4.4 RQ4: Relation of extent of perceived learning to coded learning outcomes

Table 6: Relation of Extent of Perceived Learning to Coded Learning Outcomes (RQ4)

LO category	Number of LOs	M	SD	Mdn
expansion of knowledge	684	3.423977	1.8624150	3.0
situational diagnostics	684	2.682749	1.6369437	2.0
consolidation of core competencies	121	2.983471	1.5967857	3.0
positive attitude towards teamwork	96	3.312500	1.9483461	3.0
ability to self-reflect	66	2.818182	1.7445219	2.0
awareness of the importance of conscientious, careful work	65	2.430769	1.6004807	2.0
conscientious, careful work	60	2.183333	1.2001648	2.0
other	34	4.029412	1.8171789	4.0
composure	29	2.413793	1.5472843	2.0
learning new working methods	29	4.103448	1.8194353	4.0
joint planning and problem solving	19	3.263158	1.4848159	3.0
Break awareness and resource conservation	16	2.812500	1.6418993	2.5
awareness of the importance of serenity	10	3.400000	1.7126977	3.0
consolidation of own routine	10	3.500000	2.3687784	3.0
job dissatisfaction / frustration	9	3.000000	2.7838822	1.0
job satisfaction	9	4.000000	2.5495098	3.0
psychological safety	9	2.888889	1.6914819	2.0
awareness of the importance of concentration	8	3.250000	2.0528726	3.0
mutual support	6	3.166667	2.6394444	2.0
awareness of the importance of self-reflection	5	4.400000	2.1908902	5.0
emotional exhaustion	5	1.400000	0.5477226	1.0
emotional regulation	5	3.000000	2.3452079	2.0
effectiveness	2	2.000000	1.4142136	2.0
motivation	2	2.000000	1.4142136	2.0
ability to concentrate	1	5.000000	NA	5.0
effectiveness at team level	1	1.000000	NA	1.0
reduction of errors	1	7.000000	NA	7.0

Table 7: Relation of Extent of Perceived Learning to Coded Learning Outcomes (RQ4)

LO category	Number of LOs	M	SD	Mdn
competence	1923	3.017161	1.789150	3
performance	29	3.206897	1.878056	3
other	34	4.029412	1.817179	4

4.5 RQ5: Predicting Vocational Teachers' Informal Learning Using Stress and Coping during their Daily Work Activities (as stated in Karasek's Learning Hypothesis)

- interaction effect

Table 8: Correlations between Variables RQ3

Measure	1	2	3	4	5	6	7	8	9
1. sex	—	—	—	—	—	—	—	—	—
2. age	.12	—	—	—	—	—	—	—	—
3. jobscope	.31	-.06	—	—	—	—	—	—	—
4. stress	.04	-.02	-.04	—	—	—	—	—	—
5. coping	.03	-.00	-.03	.51	—	—	—	—	—
6. pc_learn	.03	-.01	-.03	.26	.23	—	—	—	—
7. n_entry	.01	.01	.12	-.07	-.00	-.07	—	—	—
8. stress_z	.04	-.02	-.04	1.00	.51	.26	-.07	—	—
9. coping_z	.03	-.00	-.03	.51	1.00	.23	-.00	.51	—

Table 9: ICC RQ3 (REML)

ICC_adjusted	ICC_conditional	ICC_unadjusted	Freq
0.2865	0.2865	0.2865	1

Table 10: Summary Multilevel Model RQ3

	Model 1	Model 2
(Intercept)	0.829*** (0.037) (<0.001) [0.757, 0.901]	1.645*** (0.267) (<0.001) [1.122, 2.169]
sex		0.073 (0.071) (0.299) [−0.065, 0.212]
age		−0.007* (0.003) (0.034) [−0.014, −0.001]
jobscope		−0.004 (0.002) (0.111) [−0.008, 0.001]
stress_z		0.171*** (0.007) (<0.001) [0.156, 0.185]
coping_z		0.079*** (0.007) (<0.001) [0.065, 0.094]
n_entry		0.000 (0.000) (0.113) [0.000, 0.000]
act_no_1		−0.312*** (0.067) (<0.001) [−0.443, −0.180]
act_no_2		−0.311** (0.097) (0.001) [−0.501, −0.121]
act_no_3		−0.337*** (0.067) (<0.001) [−0.468, −0.206]
act_no_4		−0.508*** (0.071) (<0.001) [−0.648, −0.369]
act_no_5		−0.411*** (0.072) (<0.001) [−0.552, −0.271]
act_no_6		−0.126+ (0.068) (0.065) [−0.259, 0.008]
act_no_7	13	−0.174* (0.083) (0.036) [−0.337, −0.012]

5 Conclusion

6 Data availability statement

The anonymized data are available on Mendeley Data (<https://www.elsevier.com/researcher/author/tools-and-resources/research-data>) under the following link: ...

7 References

- Böhm, M., Nina Marlene, S., Rausch, A., & Aprea, C. (2024). Working Hours, Work Activities, Work Experience and Job Satisfaction of Teachers at Vocational Schools: Conclusions for the (Un)Attractiveness of the Teaching Profession. *bwp@ Berufs- und Wirtschaftspädagogik – online*, 47, 1–21. <https://www.bwpat.de/ausgabe/47/boehm-etal>
- Rausch, A. (2014). Using Diaries in Research on Work and Learning. In C. Harteis, A. Rausch, & J. Seifried (Eds.), *Discourses on Professional Learning* (Vol. 9, pp. 341–366). Springer Netherlands. https://doi.org/10.1007/978-94-007-7012-6_17

8 Appendix

Possible Journals

Teaching and Teacher Education (IF: 4.0),
[https://doi.org/10.1016/S0742-051X\(02\)00101-4](https://doi.org/10.1016/S0742-051X(02)00101-4) was also published here

Regelungen/Hinweise:

- Abstract: 100 words, 3 - 6 keywords
- Report: 5.000-9.000 words

Ansonsten:

- Human Resource Development International (IF: 3.8)
 - <https://doi.org/10.1080/13678860010004123> was also published here
- Journal of Workplace Learning (IF:)
- Vocations and Learning (IF: 1.9)
- Learning Environments Research (IF: 2.7)
- Technology, Knowledge and Learning (IF: 3.0) - not that fitting...
- Empirical Research in Vocational Education and Training (IF: 1.6)
- Learning and Instruction (IF: 4.7) - not that fitting...