

The development of competences at vocational schools by using action systematically curricula

Curricula in “learn-field structure” will be sensed by German teachers as chance and weight likewise. On the one, hand it is a chance for a higher quality in the vocational educational process and so for realizing own ideas. On the other, hand it is an exercise with a lot of flops for the background of our realistic general conditions. These papers are designed as a guideline for teachers to create learn situation from learn-fields. The example in the last chapter is a self-experiment to test them as a learning and teaching arrangement in a defined learn-situation at the vocational school centre “Justus von Liebig” Dresden in the class TW06 (professional target: farmer in animal production). At this point I would like to say “Thank you” to my students for the support and the willingness to publish our experience.

Content

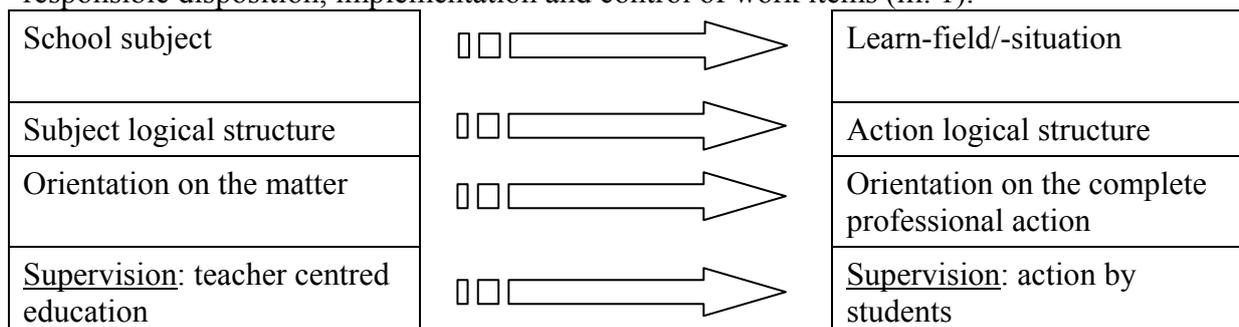
- 1 The “learn-field idea
- 2 The “learn-field principle”
- 3 The “learn-field implementation”
- 4 The example: Frame-curricula of the Kultusministerkonferenz (Assembly of the Ministers of Education and Arts), KMK, course of education= farmer in animal production, learn-field 3 titled:
”Prepare animal housings and keep these in good conditions”

1 The “learn-field idea”

The learn-field idea is not as new as you might think. Until the beginning of the nineteen-twenties in Germany the lessons were based almost exclusively on professional situations. A subject-systematology was not applied. With the beginning of the nineteen-thirties until the middle of the nineteen-nineties the lessons were compositions of a subject-systematology and professional-pragmatism – more or less. So you can get a maximum knowledge, but the preparation for the realistic vocational future is poor. Only now, for the last 10 or 12 years, we have recognized more and more the merits of an action oriented teaching. The trigger was the course of the working world – from the decomposition of work to the networking of tasks. The consequence was the rearrangement of the German professions. In agriculture the “farmer in animal production” was the first profession with an action systematically curriculum (2005). It was a political decision, that the curricula of rearranged professions by the KMK in the Free State of Saxony get a help – a material for one’s work and for the hand of the teacher. For teachers on training courses for farmers in animal production this material has been obligatory since the school year 2006/2007.

2 The “learn-field principle”

„Learn-fields“ are actions fields with a didactic treatment. They are combining professional or social matters by the aspect of action competence. “Learn-fields” encircle all the dimensions of action competence. It is the objective target by professional schools to construct the education in an action oriented way, that is, the development of student abilities such as a responsible disposition, implementation and control of work items (ill. 1).

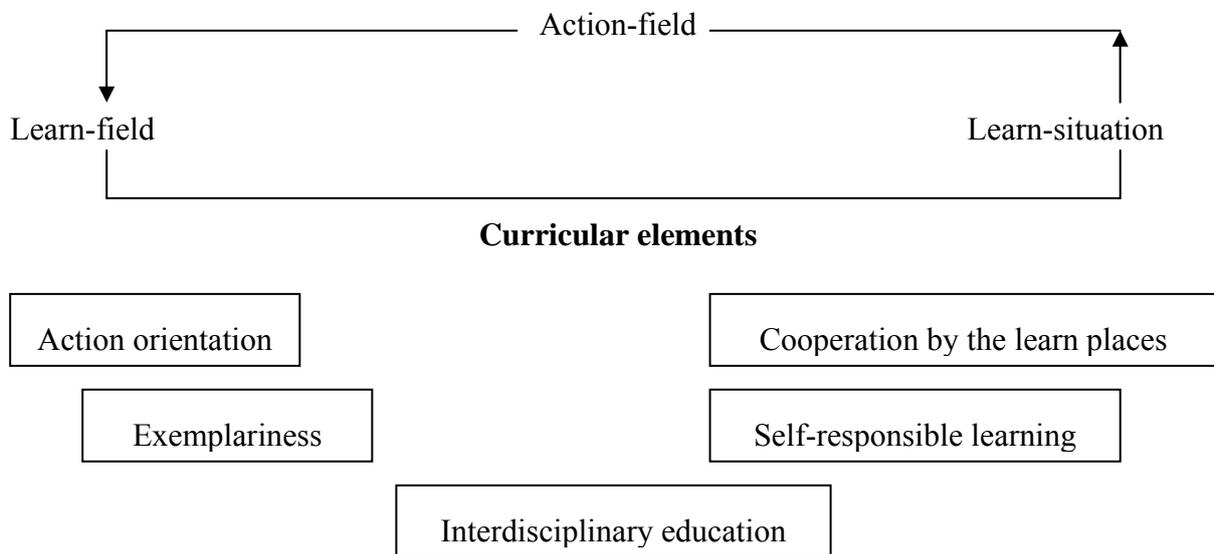


Ill. 1: The Learn-field approach

“Learn-fields” will be given in curricula as topical units in the formulation of targets. The problem is the lack of methodical concepts – every method is allowed. So the principle holds chances and risks, e. g.:

1. Interconnected thinking and action orientation by students on a high level – we need new evaluation (and examination-) methods for the complete professional action
2. Self-responsibility and clearance for the teacher – the results of students must be comparable and so we need more standards for an “up-to-date-job-outline”
3. High level of understanding on the complete professional action by the students – we need the teachers with a respective qualification and with the volition for teamwork

The professional curriculum structure is based on a job outline which is a result of economic demands. In the dual system the delegates by practice and theory derive together from this job outline the top competences for special action fields. After a didactic analysis in a commission the frame-curricula with learn-fields will be developed. It’s a challenge for my teacher colleagues at schools now to implement the learn-fields in learning and teaching arrangements and in learn-situations (ill. 2).



III. 2: From the action-field to the learn-situation – what you should respect

3 The “learn-field implementation”

My understanding of “learn-situations” is¹⁾:

- Exemplarily, curricular module, which fleshed out the guidelines of the learn-fields in a learning and teaching arrangement
- Orientation on the educational target and on the complete professional action
- Wording is action oriented
- Enriched with complete and authentic professional problem definitions and competences
- Theories are application-oriented
- Result is the reproduction of a closed professional action with planning, implementation and controlling

How learn-situations will develop?

Step A: didactic rough planning

1. Analysis

→ of planning facilities (like curricula, working guides...), typical authentic action fields in regional companies, the previous knowledge of students, the net points between the learn-fields, the specific frame conditions at your school

Management: by the vice principle of the school, by the discipline leaders and the technical advisers

2. Coordination

→ between the teachers in the course of education teams in your school, between the dual partners, between the school and regional companies and institutions

Management: by the discipline leaders and the leaders of the teacher teams

3. Brainstorming

→ e. g. deduction from professional action fields, acquisition of propositions by trainer and trainees, looking for concepts of other schools, study of literature

Management: by the technical advisers and the discipline leaders

4. Disposition of learn-fields

→ in action patterns, which are exemplary, typical and closed in themselves, limited by 15 to 50 lessons, with a description of the initial situation and the target, with the allocation of subject matters, with the formulation of the aspirated competences

Management: the leaders of the teacher teams with the teachers together

5. Sequencing of the learn-situations

→ as a help for the didactic scheduling of the school year, for a logical timing between the teachers in the different learn-fields

Management: the leaders of the teacher teams with the teachers together → the result is a proposal for the vice principle of the school

The whole didactic rough planning will be realized in the Free State of Saxony by a teachers' commission from different schools, led by the Saxon Educational Institute (former Comenius-Institute). The result is a material for one's work, written for the hand of teachers. The usage is optional.

Step B: didactic detailed planning

1. Scheduling the employment

→ by qualification you have at a vocational school an extreme heterogeneous council – teacher with or without pedagogical certification, scientific or technical teacher, specialist subject teacher and teacher for general education, not more than 3 teachers in 1 learn-field

Management: by the vice principle of the school

2. Development of a concrete job and predefinition of the working products

→ alternative products in result of a job are e. g. a working plan/timetable, a letter or form, a mind map, a website, a presentation, a documentation, a protocol, a draft version....

Management: by the specialist subject teacher

3. The arrangement of the learn situation

→ master data of the learn-situation (title, learn-field, duration), subject main points, action phases, methods of teaching, recourses (rooms, material, study trips, speaker,...), aspirated competences

Management: by the specialist subject teacher

The didactic detailed planning finds its implementation in the matter-division-plan of the teacher. This plan in deduction of an action oriented curriculum must have a different layout than plans in the implementation of subject oriented curricula.

4 The example

Curricula: http://www.sachsen-macht-schule.de/apps/lehrplandb/downloads/lehrplaene/lp_bs_tierwirt_2006.pdf

Short characteristic of the course of education p. 5/6

Learn-field table p. 7

Didactic rough planning (facultative) p. 22 ff.

Private didactic detailed planning:

Learn-field no. 3 – Prepare animal housings and keep these in good conditions (80 lessons)

Learn-situation no. 3.1 – The reconstruction of a barn stable (49 lessons)

The activity: Analyze the status of a barn stable and schedule the reconstruction of the whole physical structure!

Action	Development of competences	Lessons	Organisation
Planning 22 lessons	Get to know the learn-field-principle (methodical competences)	1	Introduction in the learn-field – whole class
	Discussion about the keeping of animals in the area of tension by economy, consumer anticipation, animal protection and ecology (social competences and knowledge)	2	regionally and actually material – whole class
	Research requirements on barn stables - building materials (methodical and learn competences)	2	Internet work in 2 groups – PC-laboratory or Laptops
	- hygienic requirements - building regulation (knowledge)	1	whole class
	Consideration (knowledge)	1	Short control
	Analysis of livestock farming and different barn stables (social competences and knowledge)	1	Gaining experience – whole class
	Compose facts to barn stable climate - general climate factors (knowledge)	1	teacher centred education – whole class
	- animal specific climate data (methodical and learn competences, knowledge)	1	Looking for videos and working with special exercises – whole class
	- arrangement of the barn stable climate via ventilation; research in the literature, development of a projection film	2	Self-responsible learning in 2 groups
	Consideration (knowledge)	1	Short control
	Investigate and compare different types of livestock farming – cattle production and work in self organised small teams (human and social competences, methodical/learn competences, knowledge)	4	Self-responsible learning in groups and with different medias, standards of groups, characters (roles), evaluation of a groups work
	Indicate different types of livestock farming – pork production (knowledge)	2	teacher centred education – whole class
	Consideration (knowledge)	1	Short control
	Discussion of variations to reconstruct an old barn stable (social competences and knowledge)	1	Discussion generalities – whole class

	Development of a common view of the criteria of a reconstruction plan	1	Summary of planning – whole class
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Implementation 22 lessons	Analyze the actual condition of a barn stable (methodical, social, human competences, knowledge)	5	Study trip and visit to a farm, collection of information (measures, photos, drafts,...), working in the different rolls
	Realise the reconstruction plan	8	Self responsible working in the small teams and with the different rolls, using different media, communication via the Internet (e-mail with companies, search for offers), process the photos and drafts, timing the presentation..., similar controls
	Calculate the materials	2	
	Order the materials	1	
	Draw the concept of ground plan and front	2	
	Prepare the presentation	4	
Control 5 less.	Presentation and comparison	5	Final control, predefinition of the evaluation criteria, evaluation of similar results in a group

III. 3: Private matter-division-plan

In the concrete example of my matter-division-plan for the learn-situation 3.1 the students of the class TW06 reconstructed in the 49 lessons a real barn stable (3-sites-court). The learn-situation opened the first year as an apprentice and the students did not have any previous knowledge or much work experience. The class was in its composition heterogenic: 28 students, app. 50 % male, mostly with CSE after 9 or 10 years, one person with general qualification for university entrance and one person from a school for children with learning difficulties. The students worked in 4 teams in voluntary composition. Every team was structured in the following rolls: manager, vice manager, speaker, writer, calculator, drawer and worker. The organisation of the teams and the allocation was realized at first by guidance of the teacher, later in self responsible manner. The tasks of the teacher were: instruction, consultation, organisation, observation and tutoring. It was a matter of fact, that the students were overcharged in one time and the realization of the order happened with fun and success. The teacher was in the complete professional action the supervisor and the teacher accepted in the finale situation the result. The presentation of the results was video recorded. The manager of the team and the team speaker represented and vindicated their work, which was propounded by a map, too. The maps contained: a recommendation for the reconstruction, a plan draft, a material overview and a calculation for the costs. The presentations were supported by Power Point or overhead transparencies. The duration per presentation was app. 15 minutes. After them, the other students could ask questions for 10 minutes. The final part of the lesson was the assessment of the student achievement under the following criteria:

1. Textual quality: the application of specialist knowledge, legal relevance, linguistic treatment of the presentation, clearness and logic
2. Quality in formation: artwork, power of persuasion in context with the eliminated images, orthography
3. Presentation: time management, technical content of the lecture (special terms, expression), power of persuasiveness

The team manager gave a vote for the single members of the team. The teacher gave the second vote as an oversight reflection. If the votes were different, teacher and team manager made a final decision. According the students, the assessments were transparent and fair.