

New Trends in Vocational Education in Europe. The Concept of “Learning-Fields” in Economic Vocational Education. The case of Germany.

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Abstract:

Not only in their own branch of occupation do trainees have to be able to meet continually increasing demands – it is most likely that in the future everybody should be prepared to change occupations once or twice during their working lives. Thus completely new demands will be made with regards to qualifications like self-directed learning, flexibility, etc.

Companies increasingly tend to instruct trainees only in specific sections of their overall activities. In contrast to the past, we no longer offer a functional education that incidentally gives trainees an insight into a company’s entirety. This is why holistic vocational training is becoming the main task of vocational schools.

To meet these altered demands, outline curricula were structured as **learning fields** which have to be developed in connection to different working fields within an occupation. What is more, these learning fields need to include the specific educational assignment of vocational schools.

1. Developing the concept of learning fields on the basis of hands-on learning

With regards to the basic conditions for developing outline curricula for vocational teaching at vocational schools, the instructions of the Ministry of Education and the Arts in Germany are characterized as follows¹:

- in the dual system vocational training in acknowledged occupations takes place in the “companies that take on trainees” and in “vocational schools”;

On a closer examination one first has to point out that the outline curricula do not contain any regulations on teaching methods.

On the extended educational assignment of vocational schools, not only specialized competence – as a part of the occupational competence to make decisions and act in a responsible way – is demanded but also personal and social competence.²

¹ Sekretariat der Ständigen Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland: Handreichungen für die Erarbeitung von Rahmenlehrplänen der Kultusministerkonferenz (KMK) für den berufsbezogenen Unterricht in der Berufsschule und ihre Abstimmung mit Ausbildungsordnungen des Bundes für anerkannte Ausbildungsberufe, issued on February 2nd, 1999.

² Friede C.K.: Sozialkompetenz als Ziel der Berufserziehung: begriffanalytisch betrachtet, in: Zeitschrift für Berufs- und Wirtschaftspädagogik, 1995, p.606-608; cf. also Euler, D.: Förderung von Sozialkompetenzen – eine Überforderung für das duale System, in: Euler, D., Sloane, P.F.E., (eds.), Duales System im Umbruch, Pfaffenweiler, 1997, p.263-265; On the clarification of social competence as a teaching goal cf. Euler, D., Reemtsma-Theis, M.: Sozialkompetenzen? Über die Klärung einer didaktischen Zielkategorie, in: Zeitschrift für

As stated in the outline agreements concerning vocational schools (the resolution was passed by the Ministry of Education and the Arts on March, 3rd, 1991), vocational schools should:

- “convey occupational skills combining specialized competence with general human and social competence;
- develop occupational flexibility to cope with changing demands in the working world and in society, and also to cope with Europe growing closer;
- wake the students’ desire to continue their professional education
- promote the ability and willingness to act in a responsible way when arranging one’s private and public life.”

In order to reach these goals, the instructions of the German Ministry of Education and the Arts are demanding that vocational schools have to:

- “bring their teaching into line with a pedagogy which is specific for their educational assignment and which emphasizes hands-on learning.”

The “didactic principles” (part III), serving as a guideline for the outline curricula mentioned earlier, should also be in accord with the altered demands on qualifications, and at the same time educational reflections should be oriented towards occupational activities to a greater extent than before.

Correspondingly, learning ought to be manifested fundamentally in relation to concrete occupational activities or – whenever this is not directly possible – in relation to an imaginary comprehension of occupational activities. In any case subject-specific classes at vocational schools ought to take specific occupational qualifications as well as general occupational qualifications into account.³

Above all, such learning has to imply the reflection of occupational activities (plan and course of activities, events).⁴

As maintained by Dubs⁵, the altered demands on vocational schools should be taken into account:

1. Not only in their own branch of occupation do trainees have to be able to meet continually increasing demands – it is most likely that in the future everybody should be prepared to change occupations once or twice during their working lives. Thus completely new demands will be made with regards to qualifications like self-directed learning, flexibility, etc.

2. Companies increasingly tend to instruct trainees only in specific sections of their overall activities. In contrast to the past, we no longer offer a functional education that incidentally gives trainees an insight into a company’s entirety. This is why holistic vocational training is becoming the main task of vocational schools.

Berufs- und Wirtschaftspädagogik, I.2./1999, p.168-170; cf. also Bastian, J.: Verantwortung. Pädagogik zwischen Freiheit und Verbindlichkeit, in: Pädagogik, I.7-8/1995, p.6.

³ Cf. Pätzold, G.: Lernfelder und Kooperation, in: Beiträge zum beruflichen Lernen, edited by VLBS, I.12/1998, p.4.

⁴Cf. Halfpap’s model of complete action in the context of his explanations on hands-on learning; Halfpap, K.: Lernen lassen, Darmstadt, 1996, p.10.

⁵Dubs, R.: Entwicklung von Schlüsselqualifikationen in der Berufsschule, in: Arnold, R., Lipsmeier, A., (Eds.): Handbuch der Berufsbildung, Opladen, 1995, p.171.

In the same breath Dubs⁶ recognizes an “atomization” of learning contents, which is increasingly characterized by an endeavor to reach completeness. As a consequence of short teaching periods, this tendency will lead to passive learning. This is also stressed by Kusch⁷, who mentions the increasing need for qualification ever since the 80’s. Kusch also hints at the necessity of interdisciplinary knowledge and skills next to social and personnel competence. Thus teaching is suffering from continually expanding theoretical demands. In Kusch’s view the discrepancy between learning from experience within a company on the one hand and augmenting theorization of knowledge on the other hand – especially at vocational schools - will overburden students with regards to cognitive aspects. Diverse experiments on interdisciplinary learning were directed towards typical courses of occupational activities and thereby aimed at diminishing the gap between theory and praxis. Furthermore, they took the following notion into consideration: students should gain their insights within their natural general context (holistic learning).

Reetz⁸ introduced the metaphor that “inert knowledge proves to be clumsy and viscous when it comes to applying it relevantly and flexibly in everyday life and work.”

On the basis of educational theories and pedagogic insights – and with respect to the growing theorization of learning in the course of the 70’s and 80’s – the instructions by the German Ministry of Education and the Arts present the following points of reference to structure activity-oriented lessons:

- situations which are important for the pursuance of one’s occupation are considered as pedagogic points of reference (learning for pragmatic activities)
- activities, preferably carried through by the students themselves or at least in their imagination, serve as the starting point of learning (learning by doing)
- if possible, activities have to be planned, carried through, checked, and if necessary corrected independently by the learners.⁹
- Activities should promote the holistic comprehension of occupational reality, e.g. by including technical, safekeeping, economic, legal, ecological and social aspects.
- Activities have to be integrated into the learners’ experiences and learners should reflect on these activities with regards to their social effects.¹⁰
- Activities should also include social processes, e.g. the declaration of interest or the settlement of conflicts.

To reach all these goals, outline curricula were structured in the manner of learning fields “which should be developed in accordance with occupational activity fields and incorporate the specific educational assignment of vocational schools. As a consequence

⁶Dubs, R.: Entwicklung von Schlüsselqualifikationen in der Berufsschule, in: Arnold, R., Lipsmeier, A., (eds.): Handbuch der Berufsbildung, Opladen, 1995, p.171; cf. also Arnold, R., Müller, H.-J.: Ganzheitliche Berufsbildung, in: Pätzold, G., (ed.), Handlungsorientierung in der beruflichen Bildung, Frankfurt, 1992, p. 97-99; Woll, H.: Die Forderung nach Ganzheitlichkeit im Rahmen der Handlungsorientierung an Beispielen des Wirtschaftslehreunterrichts, in: Zeitschrift für Berufs- und Wirtschaftspädagogik, I.1/1997, p.293-295.

⁷Kusch, W.: Berufliche Erstaus- und Weiterbildung im Lernortverbund, in: Die berufsbildende Schule, I.2/1999, p.44; Kusch, W.: Entwicklung moderner curricularer Bildungsansätze im beruflichen Schulwesen, in: VLB-Akzente, I.7/1998, p.19-20.

⁸Reetz, L.: Wissen und Handeln – Zur Bedeutung konstruktivistischer Lernbedingungen in der kaufmännischen Berufsbildung, in: Beck, K., u.a. (eds.), Berufserziehung im Umbruch, Weinheim, 1996, p.175.

⁹See Halfpap’s explanations on this issue: Halfpap, K.: Lernen lassen, Darmstadt, 1996, p.10.

¹⁰Cf. Dehnbostel, p.: Das Lernen mit dem Arbeiten verbinden, in: Bundesinstitut für Berufsbildung, (ed.), Lernen im Prozeß der Arbeit, Berlin, 1998, p.5-6; cf. also Dehnbostel, p.: Erschließung und Gestaltung des Lernorts Arbeitsplatz, in: Bundesinstitut für Berufsbildung, (ed.), Lernen im Prozeß der Arbeit, Berlin, 1998, p.17-19.

of the changing working and business processes in the companies, outline curricula also take up specialist insights which are causal for the changes.”¹¹

Bader¹² indicates that the underlying problematic is in no way new but it is rather the central problematic of each and every pedagogy, and especially of vocational pedagogy, to connect the teaching and learning processes to the learners’ experiences. Understanding should be possible through the realization of experienced interrelations and through categorizing these insights into a preexisting conceptual system.

The pedagogical consequences, which can be derived from high objectives like these, are described in part III of the outline curricula, titled “didactic principles”. As stated in the commentary on these didactic principles, a pedagogy that is in line with the changing demands on qualifications has to be oriented towards occupational processes – as demanded by the Ministry of Education and the Arts.

The explanations in the work-related preface of part IV and the comments on the learning fields in part V put the teaching outline plans into concrete terms. The particularities of each occupation, however, as well as the arrangements of learning fields according to the formulation of goals, time guidelines and contents, still need to be worked out.¹³

2. Realizing the concept of learning fields

2.1 Constructing the concept of learning fields

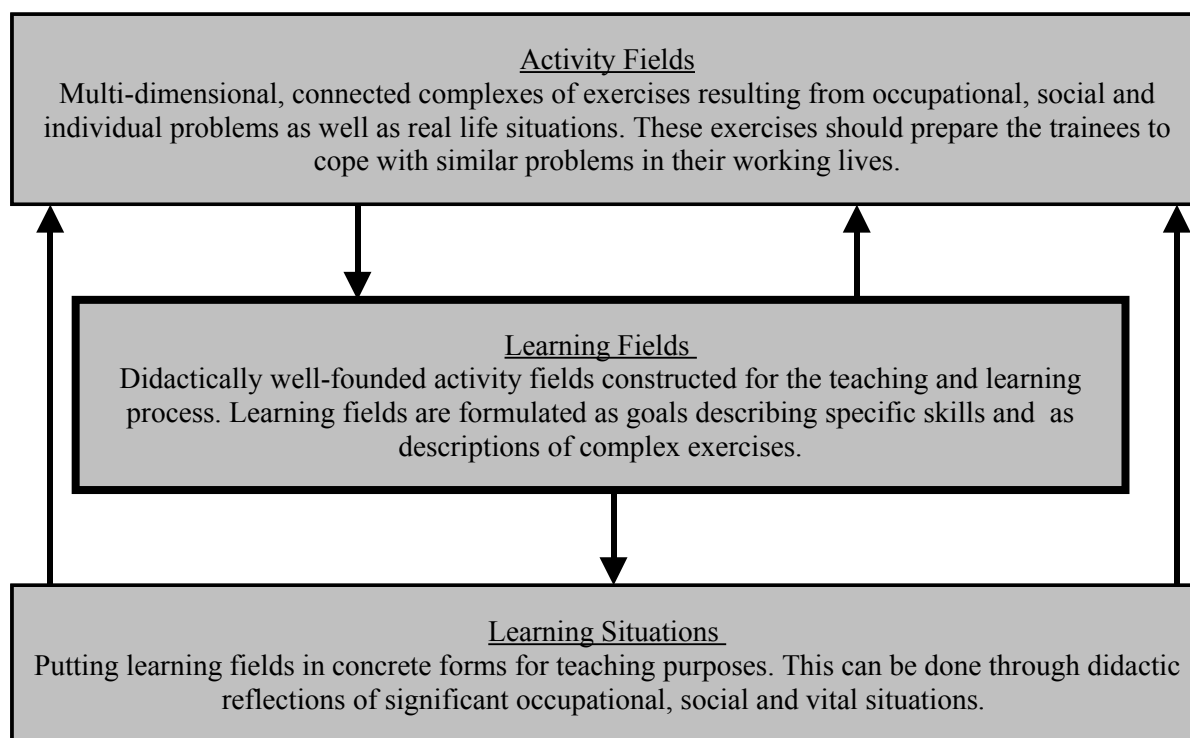
As mentioned earlier above, the teaching outline plans are structured in the manner of learning fields, activity fields and learning situations.

¹¹ Sekretariat der Ständigen Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland: Handreichungen für die Erarbeitung von Rahmenlehrplänen der Kultusministerkonferenz (KMK) für den berufsbezogenen Unterricht in der Berufsschule und ihre Abstimmung mit Ausbildungsordnungen des Bundes für anerkannte Ausbildungsberufe, issued on February 2nd, 1999, p.4; Modellversuchsgruppe hummlen: Vom Lernfeld zum Lernauftrag, in: Die berufsbildende Schule, I.4/1999, p.160-162; cf. also Grammes’ example: Grammes, T: Lernfeld Gesellschaft/Politik und Allgemeinbildung, in: Pädagogik, I.3/1997, p.44.

¹²Bader, R.: Lernfelder – Erweiterter Handlungsraum für die didaktische Kompetenz der Lehrenden, in: Die berufsbildende Schule, I.3/1999, p.73-76; cf. also Bader, R.: Das Lernfeld-Konzept in den Rahmenlehrplänen, in: Die berufsbildende Schule, I.7-8/1998, p.211-212; Bader, R.: Handlungsfeld – Lernfeld - Lernsituation, in: Die berufsbildende Schule, I.5/1999, p.177; Bader, R.: Lernfelder, in: Die berufsbildende Schule, I.1/1999, p.3.

¹³ The recommendations in figure 5 already contain examples from which learning fields can be constructed and shaped.

Illustration 1: Learning fields in relation to activity fields and learning situations



Source: Pukas, D., Das Lernfeld-Konzept im Spannungsfeld von Didaktik-Relevanz der Berufsschule und Praxis-Relevanz der Berufsausbildung, in: Zeitschrift für Berufs- und Wirtschaftspädagogik, volume 95, issue 1 (1999), p.86.

According to Bader/Schäfer¹⁴ learning fields and learning situations can only become the basis for the renewal of vocational teaching if “the reflection of these ideas is grounded on pedagogic foundations.”

The German Ministry of Education and the Arts has set certain demands on learning fields and learning situations. Depending on the question one deduces from these demands, one can look at learning fields and learning situations from different perspectives.

¹⁴Bader, R., Schäfer, B.: Lernfelder gestalten, in: Die berufsbildende Schule, I.7-8, 1998, p.229; similar thoughts on the strategic discussion can be found in O.V.: Lernfelder für den berufsbezogenen Bereich der kaufmännischen Berufsschule – Strategien zur Identifikation und Legitimation, in: Die kaufmännische Schule, I. 7-8/1998, p.239-241; these learning fields must not be confused with the learning fields of labor teaching, e.g. Bermiller, A., Lucic, W.: Eine moderne Volksküche entsteht. Fächerübergreifendes Projekt im Lernfeld Arbeitslehre, in HTW Praxis, I.10/1997, p.285-287.; cf. also Braun, A.: Vom sozialen Rechtsstaat zum europäischen Gesellschaftsmodell. Ein Lernfeld der politischen Bewegung, in: Praxis Politische Bildung, I. 2/1997, p.85-87; cf. also Kremer, H.H., Sloane, P.F.E.: Lernfeldkonzept – Erste Umsetzungserfahrungen und Konsequenzen für die Implementation, in: Bader, R., Sloane, P.F.E., (eds.), Lernen in Lernfeldern, Markt Schwaben, 2000, p.71-73.

Bader/Schäfer infer educationally relevant learning fields and learning situations from complex occupational activity fields. This process of searching is based on:

- Criteria of didactic analysis as stated by Klafki;¹⁵
- Describing teaching processes in line with Heimann, Otto, Schultz;¹⁶
- Approaches derived from the theory of action in sense of complete action;
- Insights in the development of competence in the sense of seeing subject, social and human competence as an integrated whole.

The guiding question in which way activity fields can be deduced is then answered by Bader/Schäfer¹⁷ as follows: with the help of activity fields, occupational, social and individual problems can be dealt with by way of taking clues from concrete situations which are given during apprenticeships and follow from training regulations. In this sense learning fields are said to have interdisciplinary as well as subject-integrating qualities.

Within the framework of putting activity fields in more concrete forms the following question comes up: In which way can activity fields be transformed in pedagogically justified fields of learning? With regard to this question, Bader/Schäfer¹⁸ hint at Klafki's didactic analysis¹⁹ and its consideration of current, future and exemplary meaning.

In conclusion, Bader and Schäfer²⁰ ask in which way activity structures can be constituted in learning situations. Their answer is:

“If learning situations are put into pedagogic terms by orienting them towards occupational problems and by representing complete, reflected activities (informing, planning, deciding, carrying out, controlling, evaluating), the concept of learning fields can help qualifying young people to organize important occupational, vital and social situations.”

¹⁵Klafki, W.: *Neue Studien zur Bildungstheorie und Didaktik*, 5th edition., Weinheim, 1996.

¹⁶Heimann, P.: *Didaktik als Theorie und Lehre*, in: *Die deutsche Schule*, I.54, 1962, p.407-409; Heimann, P.: *Didaktik als Theorie und Lehre*, in: Kochan, D.C., (ed.), *Allgemeine Didaktik, Fachdidaktik, Fachwissenschaft*, Darmstadt, 1970, p.110-112; Heimann, P.: *Didaktik als Theorie und Lehre*, in: Kochan, D.C., (ed.), *Allgemeine Didaktik, Fachdidaktik, Fachwissenschaft*, Darmstadt, 1970, p.110-112.

¹⁷Bader, R., Schäfer, B.: *Lernfelder gestalten*, in: *Die berufsbildende Schule*, I.7-8, 1998, p.229; Bader, R.: *Lernfelder – Erweiterter Handlungsraum für die didaktische Kompetenz der Lehrenden*, in: *Die berufsbildende Schule*, I.3/1999, p.73-76; cf. also Bader, R.: *Das Lernfeld-Konzept in den Rahmenlehrplänen*, in: *Die berufsbildende Schule*, I.7-8/1998, p.211-212; Bader, R.: *Handlungsfeld – Lernfeld - Lernsituation*, in: *Die berufsbildende Schule*, I.5/1999, p.177; Bader, R.: *Lernfelder*, in: *Die berufsbildende Schule*, I.1/1999, p.3; Bader, R.: *Konstruieren von Lernfeldern – Eine Handreichung für die Rahmenlehrplanausschüsse und Bildungsgangkonferenzen in technischen Berufsfeldern*, in: Bader, R., Sloane, P.F.E., (eds.), *Lernen in Lernfeldern*, Markt Schwaben, 2000, p.44-46; Kremer, H.-H., Sloane, P. F.E.: *Lernfelder implementieren. Zur Entwicklung und Gestaltung fächer- und lernortsübergreifender Lehr-/Lernarrangements im Lernfeldkonzept*, Paderborn, 2001, p.13-15.

¹⁸Bader, R., Schäfer, B.: *Lernfelder gestalten*, in: *Die berufsbildende Schule*, I.7-8, 1998, p.229; Bader, R.: *Lernfelder – Erweiterter Handlungsraum für die didaktische Kompetenz der Lehrenden*, in: *Die berufsbildende Schule*, I.3/1999, p.73-76; cf. also Bader, R.: *Das Lernfeld-Konzept in den Rahmenlehrplänen*, in: *Die berufsbildende Schule*, I.7-8/1998, p.211f; Bader, R.: *Handlungsfeld – Lernfeld - Lernsituation*, in: *Die berufsbildende Schule*, I.5/1999, p.177; Bader, R.: *Lernfelder*, in: *Die berufsbildende Schule*, I.1/1999, p.3; cf. also Buschfeld, D.: *Qualitätskriterien für lernfeldstrukturierte Lehrpläne – Anschubser eines Nachzüglers*, in: Bader, R., Sloane, P.F.E., (eds.), *Lernen in Lernfeldern*, Markt Schwaben, 2000, p.167-169; Lisop, I.: *Konstruktionsprinzipien für Lernfelder*, in: Bader, R., Sloane, P.F.E., (eds.), *Lernen in Lernfeldern*, Markt Schwaben, 2000, p.205-207.

¹⁹Klafki, W.: *Neue Studien zur Bildungstheorie und Didaktik*, 5th edition, Weinheim, 1996.

²⁰Bader, R., Schäfer, B.: *Lernfelder gestalten*, in: *Die berufsbildende Schule*, I.7-8, 1998, p.229-231.

A closer look at the wordings of these goals shows that they describe qualifications and skills which result from successful learning processes in schools.

The formulation of goals “expresses the pedagogic focus and the level of requirements (for example knowledge or judgment).”²¹ (instructions by the Ministry of Education and the Arts).²²

Considering the contents of learning fields, the German Ministry of Education and the Arts hints at the necessity to give pedagogic justifications for the choice of these contents. These justifications are required in order to fulfill educational aims within the learning fields. The following formulation is remarkable: “a systematic subject completeness, as it is characteristic of the diverse reference sciences, does not have to be achieved.” At any rate, however, one can see the demand for securing a logical structure of vocational subject contents.

With regards to the ministry’s time setting, it is striking that every learning field is assigned an individual time-guideline, which makes differentiated measures possible.²³

2.2 An exemplary realization of learning fields and learning situations in occupations that require training

The German Ministry of Education and the Arts already gives examples for learning fields, such as “**learning field 3**” within the training of car-merchants:

“Running sale conversations in the area of car-accessories and parts and to consult customers”

Formulation of the goal: *students present parts and accessories to prepare the sale.*

In a suitable situation they speak to the customers and find out their needs. When presenting the merchandise they use their specialized knowledge of the subject to give the customer suitable arguments. They also use media as a sales aid and offer individual solutions. In case of objections they react appropriate to the situation, hint at supplementary articles and bring the sale conversation to an end.

If there are refunds or exchanges, students have to consider the interests of the company as well as the customers’ interests and behave in an appropriate way.

Contents:

Survey of the assortment, presentation of merchandise

Aids for presentation and sale

Consulting and sale conversations

Refund and exchange

All in all, the following learning fields and time-guidelines are named within a car merchant’s training:

²¹ See also the exposition on the taxonomy of learning goals.

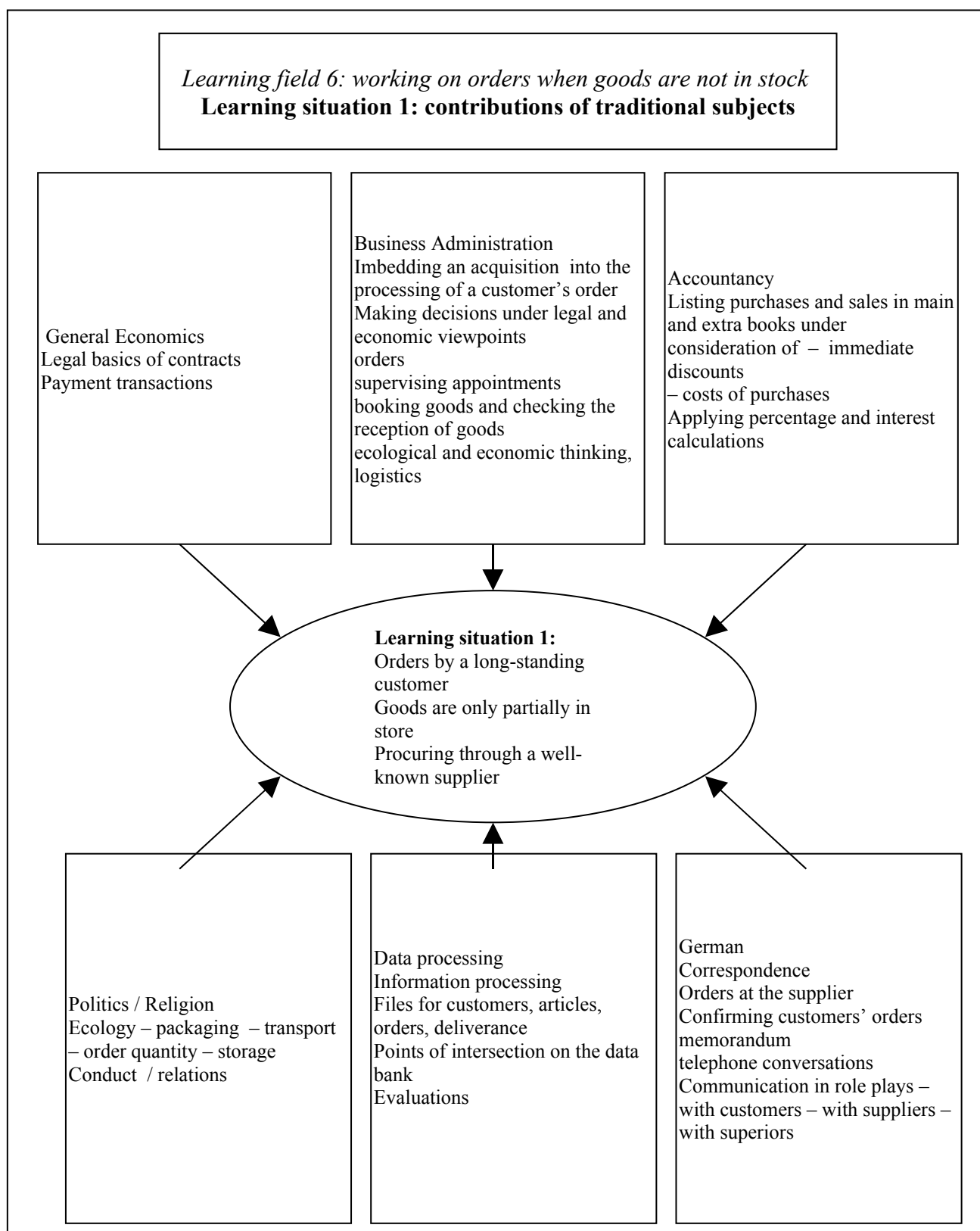
²² It is interesting to read the remark that “should-demands” should not be made because they question one’s own goals. The formulation is also required in the present tense and an adequate level of abstraction should be maintained.

²³ See also the choice of exemplary textbooks which are in line with the new guidelines by the Ministry of Education and the Arts, e.g. Kühn, G., et al.: *Automobilkaufleute. Allgemeine Wirtschaftslehre*, Bad Homburg, 1999; Böhme, M., et al.: *Automobilbetriebslehre. Vertrieb und Finanzdienstleistungen*, Bad Homburg, 2000; Grigat, E., et al.: *Vertriebs- und Serviceleistungen für Automobilkaufleute*, Neusäß, 1999; Kliewer, U., et al.: *Finanzdienstleistungen und Controlling für Automobilkaufleute*, Neusäß, 2000. See also other textbooks on the qualified bank clerk, e.g. Sauter, W., et al.: *Bankkauffrau / Bankkaufmann*, volume 1, Lernfelder 1-6, Neusäß, 2nd edition., 2000; Sauter, W., et al.: *Bankkauffrau / Bankkaufmann*, volume 1, Lernfelder 7-12, Neusäß, 1998; Andreas, B., et al.: *Wirtschaftslehre für Bankkaufleute*, Bad Homburg, 1999.

Figure.2 Learning field Time-guideline (in hours.)

		1. Year	2. Year	3. Year	Total
1	Getting to know the company and its achievements, integration into the company and actively shaping one's own vocational training	80			80
2	Realizing the tasks of human resource management and using acquired skills for one's personal and professional development		40		40
3	Taking basic social conditions and influential magnitudes into consideration when looking at economic decisions within the motor vehicle branch			80	80
4	Comprehending and documenting stocks and flow of values	40			40
5	Collaborating on the annual accounts, investigating costs and achievements and processing these data for the company's decisions		80		80
6	Checking on accomplishments and preparing factors for entrepreneurial decisions			40	40
7	Running sale conversations in the area of car-accessories and parts and to consult customers	80			80
8	Working on orders for parts and accessories	120			120
9	Working on orders for car servicing and reparation		80		80
10	Planning, justifying and constituting customer-related measures in the context of a marketing strategy		80		80
11	Involvement in the new and used car business, dealing with orders for new and used cars			40	40
12	Arranging and working on financial services as well as on company-specific services			120	120
	SUM	320	280	280	880

Figure 3: An exemplary learning field



Source: Hahn, H.: Umsetzung der Lernfeldkonzeption der neuen AO im Groß- und Außenhandel, Unterricht heute, in: Wirtschaft und Gesellschaft im Beruf, issue 3, May 1998, p.129.

3. Conclusion and a Critical Appreciation of Learning Fields in Vocational Education

Within the framework of the analysis of opportunities and risks involved with learning field-structured curricula, the key arguments for the corresponding structure of the outline curricula of the Cultural Ministers' Conference should be reiterated. These are:

1. the aligning of objectives and contents with the work process-oriented conditions of the trainee's future occupational profile (with a simultaneous move away from a subject-content system towards a pragmatic system);
2. the promoting of learning place cooperation between the vocational school and the company providing the training;
3. the "prolonging of life" for the curricula by reducing the degree of detail;
4. the attempt to also do justice to the demands for adjustments to examination requirements in accordance with a comprehensive "hands-on" approach.

Zöllner²⁴ recognises here the arguments of the supporters of learning fields who see in the new structure a step towards the strengthening of inter-disciplinary and "hands-on"-oriented teaching, contributing towards an increase in curricular flexibility in schools and containing an attempt to modernise the "dual system".

Learning field pedagogy appears to be an attempt in this respect to pedagogically align commercial vocational training with the requirements of a **process**-oriented business administration, whereby justice is done to the fact that the word "**process**" is not only enjoying great popularity at the moment but also contributes to sustainably altering companies and their operating procedures, as demonstrated, for instance, by the "lean management" field.²⁵

If this conception is subjected to a critical analysis, then it must be noted that, for many years now, vocational schools have been continuously subjected to new conceptions and requirements without, however, sufficient attention being given to the phenomenon of obsolescence and insufficient material and equipment. Stommel²⁶ is correct when pointing out that, "Science and administration repeatedly "lays down" new terms and concepts or "forces" them onto the vocational college. In the wake of learning targets-oriented teaching²⁷, science-oriented, decision making-oriented, "hands-on"-oriented, computer-oriented, values-oriented or otherwise-oriented teaching methods; in the wake of learning workshops, future workshops, pragmatic workshops and simulative learning measures and learning measures [sic]²⁸ in the North-Rhine Westphalian Education Commission's "House of Learning", the vocational schools are now faced with the *dernier cri*, that is, the "learning fields" together

²⁴ Zöllner, A.: Lernfelder in den Rahmenlehrplänen des Bundes und in den bayrischen Lehrplänen der Berufsschulen, in: Die berufsbildende Schule, I.4/1999, p. 155.

²⁵ Krammes, D.: Lernfelddidaktik in beruflichen Schulen, in: Wirtschaft und Gesellschaft im Beruf, I.1/2000, p. 24. The process is linked to the Japanese term "Kaizen" which calls for constant cost reduction through continuous process improvement.

²⁶ Stommel, A.: Lernfeldstrukturierte Rahmenlehrpläne: Amtlich verordnetes Durcheinander als neue Ordnung des Unterrichts – a supplement to Winkler's Flügelstift I.2/1998.

²⁷ Reetz, L.: Zur Bedeutung der Schlüsselqualifikationen in der Berufsausbildung, in: Reetz, L., Reitmann, T., (Eds.), Schlüsselqualifikationen, Hamburg, 1990, p. 20.

²⁸ Presumably teaching measures and learning measures.

with the related "learning fields"-structured outline curricula, as a new basis for their activities. Stommel then makes emphatic reference to the taxonomy of learning targets according to Möller²⁹, and calls the objectives within the learning fields "learning targets of the very roughest kind".

Gieseke takes this consideration a step further when he says, "The cultural invention "teaching" enables us to do something that would otherwise be impossible, that is, to bring an actually still quite confusing reality into well- ordered conceptions and to retain these for future (...) application when the situation calls for them. All of the learning processes which take place during a lifetime anyway, remain, on the contrary, bound to their topicality and serve an immediate purpose."³⁰

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²⁹ Möller, C.: Technik der Lernplanung, 4th edition, Weinheim, 1973.

³⁰ Gieseke, H.: Wozu ist Schule da'? Die neue Rolle von Eltern und Lehrern, Stuttgart, 1996, p. 199 and p. 254.

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