

Study on Implementation of Learning Field Curriculum in Germany

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1. Research background

- It has been eight years since learning field curriculum program was fully implemented in Germany in 2003.
- After years of practice, what is the implementation effect of learning field curriculum? Has the curriculum program achieved the objective to foster students' comprehensive occupational competence? I conducted a study on this issue while in Germany as a visiting scholar.



2. Research method

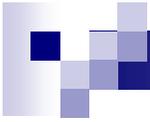
- To study this issue, I conducted a questionnaire survey in some vocational schools in the state of Bremen, Lower Saxony and North Rhine-Westphalia of Germany. The questionnaire adopted the eight competence criteria (Functionality, Comprehension and Presentation, Utility Value, Cost-Effectiveness/Efficiency, Business and Process Orientation, Social Acceptability, Environmental Compatibility and Creativity) to measure students' vocational competence level, which were developed by Professor F. Rauner, a famous scholar of German vocational education, and his team.

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- The questionnaire studies the teachers' and students' opinion on the eight competence criteria by asking two questions:
 - question for teachers: “What role have the eight criteria played when evaluating students' project?”;
 - question for students, “What role have the eight criteria played while fulfilling a task or carrying out a project?”
 - From this questionnaire, we can see whether or not the teachers have designed and organized teaching in accordance with the eight criteria and whether the students have considered the eight criteria while fulfilling occupational tasks.



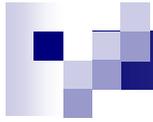
3. Findings

- *3.1 Students generally give high ratings to the significance of the eight competence criteria.*
- *According to the survey data, when fulfilling tasks, students' evaluation mean value for the eight criteria is between 3.23 and 4.00.*



Students' overall evaluation of the importance of the eight competence criteria

	Functionality	Comprehension and Clarity/Presentation	Utility Value	Cost-Effectiveness/Efficiency	Business and Process Orientation	Social Acceptability	Environmental Compatibility	Creativity
Ensemble average	4.000	3.678	3.840	3.470	3.340	3.759	3.230	3.752



- This indicates that after more than ten years of reform, German teachers basically agree with the objective of learning field curriculum program and have implemented them in teaching to a certain degree.

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- 3.2 During the whole period of study, students' evaluation of the roles of the eight criteria in completing tasks shows the following characteristics: the first-year to the third-year students report a gradual decline in their evaluation of the eight criteria, while the fourth-year students increase their ratings to varying degrees.

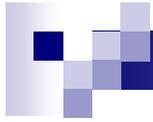
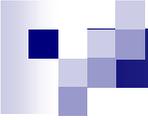


Table 2: Evaluation of the eight criteria from students in different grades

Grade	Functionality	Comprehension and Clarity/Presentation	Utility Value	Cost-Effectiveness/Efficiency	Business and Process Orientation	Social Acceptability	Environmental Compatibility	Creativity
Grade 1	4.170	4.007	4.082	3.857	3.520	4.051	3.388	3.959
Grade 2	4.047	3.653	3.879	3.434	3.364	3.707	3.146	3.747
Grade 3	3.907	3.542	3.639	3.201	3.229	3.542	3.146	3.639
Grade 4	3.898	3.618	3.823	3.532	3.290	3.863	3.339	3.726

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- This variation trend indicates that students have a high expectation of the dual-system vocational education at the beginning of vocational study. As the study is unfolded gradually, there appears a gap between what students have expected and the actual learning, which makes students' evaluation of the eight criteria decline gradually.

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- Yet by the fourth school year, students' evaluation begin to increase to varying degrees. This is because in the fourth school year students have to take a skilled worker examination held by the guild. The practical part of the examination usually requires students to complete an occupational task in accordance with the relevant requirements, and students will be according to the eight criteria mentioned above. Accordingly, during this period the teachers lay more emphasis on the eight criteria than ever before and also implement the criteria to their teaching. This naturally improves students' evaluation of the eight criteria to varying degrees.

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- 3.3 Of the eight criteria, the beginners (first-year students) of vocational schools give the lowest ratings to two criteria, “Business and Process Orientation” and “Environmental Compatibility”.

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- The reason why the first-year students give a low score to “Business and Process Orientation” criterion is that it is difficult for them to draw a relatively complete picture of future career and thus they can hardly understand the essence of “Business and Process Orientation” criterion.

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- The reason for a low score in “Environmental Compatibility” is that the first-year students’ environmental awareness is virtually quite general, which is only gained through public discussions and they have not associated specific pro-environmental behaviors with their future occupations.

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- 3.4 The survey result is not consistent with the conclusion of competence test items
 - Such inconsistency indicates students' competence acquired in training does not reach the level expected. Meanwhile, according to students' evaluation and actual developmental level of vocational competence, students show strength in "Functionality". By contrast, students show a great weakness in "process and creativity". This indicates a lack of effective teaching design and plan that could improve such competence. The objective of learning field curriculum has only been partially realized.

- *3.5 Teachers evaluate the importance of most competence criteria (with an exception of “Utility Value” and “Cost Effectiveness”) much more highly than students.*

Table 3: Average evaluation by teachers and students on the importance of the eight criteria

	Functional-ity	Comprehens-ion and Clarity/Pre-sentation	Utility Value	Cost-Effective-ness/ Efficiency	Busi-ness and Process Orientation	Social Accepta-bility	Environ-mental Compati-bility	Crea-tivity
Average evaluation by teachers	4.1414	4.1009	3.7197	3.4242	3.9697	3.9091	3.6364	3.9697
Average evaluation by students	4.000	3.678	3.840	3.470	3.340	3.759	3.230	3.752

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- Teachers give a much higher rating particularly to three criteria, i.e., “Business and Process Orientation”, “Environmental Compatibility” and “Comprehension and Clarity/Presentation”. Teachers score the three criteria 0.4-0.6 points higher than students do.

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- The reason why teachers evaluate the “Business and Process Orientation” criterion more highly than students is that it is the main feature of the learning field curriculum program. Although people in Germany hold different views on learning field curriculum program, yet they all agree that “Business and Process Orientation” is the major feature of the program. After more than ten years of implementation, teachers have partly understood and grasped the essence of “Business and Process Orientation” criterion.

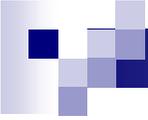
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- As to why teachers give a higher rating to “Environmental Compatibility” criterion, this is because teachers have a good understanding of the profession and are familiar with career practice, which makes them better understand the essence of “Environmental Compatibility” criterion and so they have the competence to link environmental requirement with specific occupations.

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- “Comprehension and Clarity/Presentation” is a criterion which has always been given importance in teaching. Teachers have always seen this criterion as a standard to examine whether students have mastered what they have learnt. Therefore, compared with students, teachers give a much higher rating to the above three criteria.

- *3.6 f. Teachers share a common view on the value of “functionality” criterion, but their evaluation of the other seven criteria vary considerably.*

Table 4: The average evaluation and standard deviation by teachers on the importance of the eight criteria

	Functionality	Comprehension and Clarity/Presentation	Utility Value	Cost-Effectiveness/Efficiency	Business and Process Orientation	Social Acceptability	Environmental Compatibility	Creativity
Average evaluation	4.1414	4.1009	3.7197	3.4242	3.9697	3.9091	3.6364	3.9697
Standard deviation	.43325	.62625	.71468	.98521	.51447	.80482	.89506	.84723

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- According to the results, teachers give the highest score to “Functionality” criterion (with a mean value of 4.1414). Also, the standard deviation of “Functionality” was the lowest (0.43325), which indicates a minimum difference in their views upon this criterion. That is to say, teachers give a high and uniform recognition to the importance of the “Functionality” criterion. This is because “Functionality” is the most fundamental and most important criterion in all occupational areas. It also indicates that the vocational teaching has always attached great importance to this criterion and teaching has been designed and carried out in accordance with this criterion.

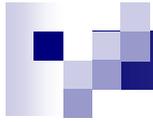
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- Teachers' evaluation of other criteria vary considerably. The difference is particularly obvious in the evaluation of "Cost-Effectiveness/Efficiency", "Environmental Compatibility" and "Creativity". The standard deviations of the three criteria are respectively 0.98521, 0.89506 and 0.84723. This means that great differences exist between individual teachers in the recognition of the importance of these criteria, and such differences will be reflected in teaching design and teaching practice.



4. Conclusion

- After more than ten years of reform and practice, teachers in Germany basically agree with the learning field curriculum's objective to foster students' vocational competence and the objective has been reflected in teaching to a certain degree. However, although the eight criteria have been highly evaluated by teachers and students, yet students' actual ability acquired do not reach the level expected. This indicates a lack of effective teaching design and plan in learning field curriculum. The objective advocated by the learning field curriculum program has only been achieved in a limited way.

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- The key to enhancing the implementation effect of the learning field curriculum is through improving the teachers' teaching design and implementation capacity and by integrating the concept advocated by the learning field curriculum with the teaching design. The eight criteria for measuring students' occupational competence developed by professor F.Rauner and his team can be utilized as reference standards by teachers in teaching and task design.



■ Thanks