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Why combining interrelated subjects does not make a global subject – Lessons learnt from the latest curriculum reform of Austrian commercial schools

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Abstract

In order to enhance students' understanding of the interrelationships between business administration, business mathematics and accounting, the recently developed curriculum of Austrian commercial schools comprises one global subject in which the contents of these three subjects have been combined. A second subject called "business practice" has been introduced to provide sufficient time to apply the acquired business knowledge to practice-oriented tasks. The results of a formative evaluation study show that several teachers have considerable difficulties to put the main ideas of these two subjects into practice and that many students find it hard to understand the identity of these two subjects.

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1. Introduction and Objective

For many years, business administration, accounting and business mathematics have been three separately taught subjects at Austrian commercial schools ("Handelsschule", short HAS in the remainder of the text). In order to enhance students' understanding that these three subjects are interrelated, the recently developed new curriculum of Austrian commercial schools comprises one global subject in which the subject matters of the formerly three subjects have been combined. However, the global subject is not called "business" but "business administration, accounting and business mathematics" ("Betriebswirtschaft, Wirtschaftliches Rechnen, Rechnungswesen", short BWRR). Moreover, the curriculum itself mainly consists of a list of contents to be covered that does not take the interrelationships between the various fields of business into account. The concept of business education at commercial schools is completed by a second subject called "business practice" ("Betriebswirtschaftliche Übungen", short BWUF). This subject is intended to provide teachers and students with sufficient time to apply

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what has been taught and learnt in the global subject BWRR to real-life problems, business cases and practice-oriented tasks.

During the academic year 2011/12 a pilot project was initiated by the Austrian ministry of education in which 22 schools put the new curriculum into practice in order to gain experience on how to implement it and how to teach the newly developed subjects. It has been the objective of a formative evaluation study (Bortz & Döring, 1995) at seven of these schools to see how the implementation process actually works and is perceived by teachers and students (Greimel-Fuhrmann et al., 2012). This paper focuses on the evaluation results concerning the subjects BWRR (“business administration, accounting and business mathematics”) and BWUF (“business practice”).

Section two of this paper is dedicated to explaining the characteristics of Austrian commercial schools and the main features of the newly developed curriculum. The evaluation design and the research methods used are thoroughly described in the third section, followed by the presentation and discussion of research findings in section four. Based on these results, section five concludes the paper by generally discussing the ideas underlying the concept of teaching a global subject (rather than separating distinctive fields of a subject and teaching them separately) and of creating a subject for the mere application of knowledge that has been acquired in another subject.

2. Austrian commercial schools and their recently developed curriculum

The Austrian commercial school is a three-year school type that combines general and vocational education and is finished by passing a final exam. Its main intention is to prepare students for working in all fields of business, e.g. as assistant or accountant. Therefore the curriculum has consisted of a number of business-related subjects for many years: most importantly of business administration and accounting, but also of business mathematics, business informatics and business practice including running a virtual enterprise (Greimel, 1998). In many discussions with teachers on the shortcomings of the education at HAS, they complained that students often fail to see the interrelationships between these subjects. Therefore it is one of the main elements of the latest curriculum reform for HAS to introduce a global subject called “business administration, business mathematics and accounting”. While this subject mainly is intended to focus on the students’ knowledge acquisition, the practical application of this knowledge to practice-oriented tasks can be achieved in a second subject called “business practice”.

A closer look at the new curriculum reveals that the global subject BWRR comprises eight different fields of competency that have to be achieved in the course of three years at school – one for business mathematics, six for business administration and one for accounting. For each of these fields a number of learning objectives (ranging from two to seventeen) are defined, for example: “In the field of competency “business mathematics”, students are able to make basic calculations by applying percentages and interest rates”, “In the field of competency “dealing with sales contracts” [which is part of the content of business administration], students are able to detect contract violations by the seller and react appropriately” and “In the field of competency “accounting”, students are able to conduct regular records for the statement of revenues and expenditures.” Only very few of these learning objectives refer to more than one field of competency. Despite its intention to be interrelated, the curriculum itself extensively fails to provide appropriate learning objectives. The contents to be taught in the three years of HAS are also structured in a very similar way. In the first year three separate topics have to be taught: business mathematics, dealing with sales contracts and preparing a statement of revenues and expenditures. The topic sales contract comprises the following contents: “basic legal knowledge; contents, initiation and negotiation of a sales contract; materials management und purchase marketing; purchase principles; correct fulfillment of a contract and contract violations; commercial correspondence”. For the subject BWUF some additional learning objectives are defined which focus on knowledge application in specific situations, but there are no additional teaching/learning contents. Therefore, a teacher who decides to teach the three fields business mathematics, business administration and accounting consecutively – and hence separately – would still comply with the specifications of the curriculum. One could even argue that the specifications of the curriculum suggest that it should be done like that. Also the structure of the textbooks used for teaching BWRR mainly reflect the structure that is given in the curriculum. So the integration of the three fields remains to be achieved by the teacher. And the evaluation study described in this paper has examined how well teachers can tackle this task.

3. Evaluation design and research methods

Based on a design that integrates the principles of triangulation of perspectives and methods, qualitative and quantitative data were analysed which allow a thorough insight into different perspectives on the implementation of the curriculum. "It is conventionally assumed that triangulation is the use of multiple methods in the study of the same object" (Denzin, 1989, p. 236), but it represents even more: Triangulation comprises the combination of different methodologies, different investigators, different data sources and theories as well as different settings of time and place (Flick, 1995).

Triangulation of perspectives consists in combining different empirical sources in order to gain as many different perspectives of a research object as possible. The major objective is not primarily to improve the study's objectivity but to reveal the complexity of research objects to get the whole picture instead of a single view. "We should combine theories and methods carefully and purposefully with the intention of adding breadth or depth to our analysis, but not for the purpose of pursuing objective truth" (Denzin, 1989, p. 246). The evaluation design therefore comprised the perspectives of students, teachers and principals as well as project coordinators at school.

Each method of social research has its own characteristics, its strengths and weaknesses, its potential for gaining information and its limitations. By applying one single method the researcher cannot overcome the method's weaknesses. Only by combining different methods (triangulation of methods) can the deficiencies of one method be counterbalanced by the strengths of another and vice versa. This is because "methods are like the kaleidoscope: Depending on how they are approached, held and acted toward, different observations will be revealed. This is not to imply that reality has the shifting qualities of the colored prism, but that it too is an object that moves and that will not permit one interpretation to be stamped upon it" (Denzin, 1989, p. 235). By combining several methods the information gained about the research object will be more complete. In the case of the evaluation study semi-structured interviews (Mayring, 1993 and 1996) and focus groups were combined with essays and a questionnaire.

Seven commercial schools, ranging from small (40 teachers) to large schools (135 teachers), situated in Vienna and Lower Austria were involved in the project. At different points of time throughout the pilot school year two headmasters, six project coordinators and 25 teachers were interviewed. 174 students completed an online questionnaire, 208 students delivered a written essay and 48 students participated in focus group sessions.

4. Research findings

This section of the paper summarizes the analysis of students' and teachers' perspectives on the subjects BWRR and BWUF. The results show that there are several teachers who have considerable difficulties to put the main ideas of these two subjects into practice and that many students find it hard to understand the identity of the newly developed subjects as well as the difference between them.

4.1. Teachers' perspective

Although almost all interviewed headmasters, coordinators and teachers welcomed the idea of combining business mathematics, business administration and accounting to create one global subject BWRR, most teachers admitted that they have had (at least initial) problems putting the idea into teaching practice. This is particularly true for those teachers who look back on many years of experience in teaching (only) one specific subject. Finding the right balance between the three subjects in a rather large number of lessons seems difficult because many teachers tend to emphasize one subject – according to their experience – while neglecting the others. Due to the large number of lessons, the global subject is usually taught by at least two teachers. However, there are various ways to jointly teach this subject. Different schools have developed different concepts as the respondents described:

- 1) A parallel structure seems to be the most common concept. Business mathematics, business administration and accounting are taught simultaneously, but very rarely in one and the same lesson – either topics are changing weekly or a certain number of lessons per week is dedicated to each of the topics. Some teachers who teach as a team have decided to divide the topics between them, enabling each teacher to focus on one, which in the end led to a teaching practice very similar to conventional teaching of three separate subjects.
- 2) Another approach was the modular structure. Business mathematics, business administration and accounting are taught consecutively as separate subjects.

- 3) Only in one of the seven schools a concept was developed and applied that really integrated the three topics into one subject by teaching “only business”.

Most teachers realize that the first two concepts do not fully comply with the idea of a global subject. In the interviews they explain why they think this is the case: A lot of students attending the first year of HAS lack indispensable prior knowledge of mathematics as well as of languages. When they start learning business mathematics, business administration and accounting – which are subjects that they have not had before – it is very important to start from the very beginning and train the basics thoroughly. It is more important to focus on these basics than on revealing the interdependencies of the topics being taught. At the earliest in the second or third year of HAS it seems possible and useful to connect these topics and interrelate them to create a whole picture of business. Furthermore – so the teachers argue – not only the topics but also the required learning processes are different, which supports the approach of an initial separation of topics.

As far as grading is concerned, teachers realize that students with difficulties in one single field (e.g. accounting) benefit from being taught a global subject, because they can compensate their poor performance in accounting with better performances in other fields.

The large number of lessons dedicated to BWUF is appreciated by all interviewed teachers. They notice that the second subject allows redundancy which supports the learning process and results in better learning outcomes. Nevertheless the strict separation into a theory-oriented subject BWRR and an application-oriented subject BWUF is criticized by a high percentage of the teachers.

Schools have developed different concepts to allocate time and teachers to these two subjects:

- 1) BWRR is either taught by one teacher, by two teachers alternately or by two teachers in a team.
- 2) BWUF is always taught by two teachers, either in two separate groups of students or with the whole class being taught by both teachers in a team teaching process.
- 3) In most cases, the teachers who teach BWRR also teach BWUF. But there are exceptions to that “rule”.

Having two subjects with more or less the same learning content, but different approaches (acquisition of knowledge versus its application) and having at least two teachers responsible for these subjects requires a lot of coordination between the teachers. However, dividing theory and practice is not feasible in reality. On the one hand, it does not make sense from a pedagogical and didactical point of view to concentrate on the acquisition of knowledge without applying it, because the application of knowledge significantly enhances the acquisition of knowledge. Consequently, there are tasks which make the students apply their knowledge in both subjects which makes it hard for the students to understand the difference between the two subjects (very often taught by different teachers!). On the other hand, if students have not yet understood the learning content, it is not possible to apply it by solving problems and real-life tasks in BWUF, but teachers need to explain the content, ending up doing the same as in BWRR. Only one school has developed a clearly different concept: all BWUF lessons take place on one so-called “Business Day” per week, when students “work” in a (virtual) training firm and deal with simulated but realistic business situations.

Another question has arisen in the interviews: As there are written exams in both subjects, it is possible that students achieve different grades for the same learning objectives. How can this be explained to students?

4.2. Students' perspective

One of the aims of the online-questionnaire for students was to find out how students perceive the two subjects BWRR and BWUF. The results of the four items covering this aspect are shown below:

- “I think that BWRR and BWUF are totally different subjects”: One third of the students agreed with this statement, one third partly agreed/partly disagreed and one third disagreed with it.
- “I am confused because we learn similar things in BWRR and BWUF”: 37 % admitted their confusion, while 41 % indicated not to be confused.
- “It is not clear to me how business administration, business mathematics and accounting are interrelated”: For less than 50 % of the respondents the interrelations between the different topics are clear, nevertheless for about one quarter they are not.
- About half of the students stated that they could immediately give a correct answer to the question “What is business administration?”, while 21 % indicated that they could not.

Interestingly enough, the essays and especially the focus group discussions showed that most students did not have a clear idea of the similarities and differences between BWRR and BWUF. They also do not understand the similarities and differences between business administration, business mathematics and accounting. Many students reported that sometimes they cannot figure out which lesson they actually have and that they have problems to assign specific contents to the different subject matters. Focus group discussions revealed that many students think that they are taught business administration in BWRR and business mathematics and accounting in BWUF. Students also do not understand why they have to take examinations in both subjects and are graded separately.

Some of the students attended the first form of HAS for the second time (their bad grades had not allowed them to proceed to the second year) and consequently were able to compare the new concept of BWRR and BWUF with the former concept. 54 % of them appreciated the new combined global subject. Nevertheless 46 % of this group of students are confused by the new concept and do not understand the distinction between BWRR and BWUF.

5. Discussion and reflection

The results of this study clearly show that the integration of different subjects into one global subject needs more than some general principles of teaching and a list of contents. If it is intended to focus on the interrelationships of various business-related subjects, this focus should also be visible in the curriculum. Otherwise it can be fulfilled without achieving the intended integration. As textbooks have to reflect the content and structure of the curriculum, also the new textbooks follow a modular rather than an integrated and interrelated structure. In the end the integration has to be achieved by the teachers, but most of them look back on a long tradition of teaching business administration and accounting separately, some have even become experts in one field and are likely to emphasize this field in their classes. There are many reasons why they are not prepared to adopt an integrated approach.

It has also been obvious that many teachers and students are confused by the co-existence of a theory-oriented subject and an application-oriented subject. In addition to the obvious organisational issues that may arise, it is hard and also pointless to teach a subject matter without applying the knowledge to realistic tasks and problems (e.g. Fortmüller, 1991 and 1998). And it is just as hard only to apply knowledge without any explanations or iterations of the material that has been taught by another teacher. The more freely and creatively the teachers interpreted the curriculum of BWUF e.g. by running a training firm with the students, the easier it was for the students to identify a difference between the two subjects. The more the teachers focused on practising what had been taught, the more students got the impression that the two subjects are more or less the same.

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