MASARYKOVA UNIVERZITA

FACULTY OF SOCIAL STUDIES

Transfer of professional development to classroom teaching.

An analysis of professional development courses at the

University College of Teacher Education in Vienna, Austria.

PhD thesis

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FSS
Sociology
Brno, 2020

I declare that I have worked on this thesis independently, using only the primary and secondary sources listed in the bibliography.

In Brno, 2020 ……

Name Surname

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1. Introduction

When I started my career as a primary school teacher in the year 2007, I experienced for the first time how knowledge gained from my studies was not enough to fulfil my job. Obviously, I could learn from mistakes, from exchange with colleagues and from taking courses at the University College of Teacher Education (called professional development). After six years as a full-time teacher, I took a vacant position at the University College of Teacher Education and worked from that point half-time in school and half-time at the University College, organizing and planning professional development courses myself. This shifted my perspective from the side of a teacher to the side of a coordinator of such courses.

During that time, the University College of Teacher Education has gone through some changes itself. Organizational restructuring and modifications in the evaluation process affected my perception of professional development, which led me to engage with this topic more intensively. Technology has become more important, and while this has simplified the evaluation of such courses (with online surveys for course participants, for example), at the same time return rates have dropped. These technical changes caused another issue - coordinators not being able to see the results of these surveys anymore. However, this information had always proved useful in the past for future planning processes. Accordingly, the Department of Elementary and Primary Education, which I work for, established an internal evaluation procedure (using paper and pencil), to collect the opinion of participants on courses attended and their likely demand in the future. This information provides course coordinators in turn with useful information for their future planning.

The sum of these issues made me think about the deeper sense of professional development, which is, in my opinion, providing useful information for teachers to support their classroom teaching. However, ultimately the goal is to reach students and to enhance their learning, which results in the development of our future society.

That is how the idea to do some research on professional development was born.

1.1. Aim of the dissertation

Institutions which are related to educational processes (such as teaching, staff training or professionalization of certain occupational groups), need to find criteria which positively affect the learning processes of their target group. One way to identify the provided quality (and to discover opportunities for improvement) is an evaluation of activities such as classroom teaching in the school environment, staff training in the work environment of companies, or courses at a university level (e.g. Gessler 2011, Helmke 2014 or Tillmann et al. 2011).

Since this paper views evaluation under the aspect of professional development for teachers, it is necessary to take a deeper look at the university context.

Evaluation has become an essential part of the university process, with its diverse modes of implementation. Knie and Simon see evaluation as a symbol of quality for individual subjects or institutes. This influences the way an institution is considered from the outside. When it comes to funding of research projects this may also become relevant (Mähling 2011 and Knie and Simon 2010).

The most common way to evaluate teaching processes is to conduct a survey at the end of a seminar, which measures the attitude of participants towards the seminar itself (Hölbling 2007). Some researchers such as Tillmann dedicated a lot of time in developing such instruments. As a result, Tillmann et al. (2011) designed the “Frankfurter Studierendenfragebogen” (STUD-FEL): a survey for students, intended to measure the quality of seminars at the university. Several items of this standardized questionnaire result in a final score, which consists of the following constructs: structuring and clarity, coherent explanations and presentation, time management and troubleshooting, cooperation and atmosphere, interaction (support/guidance/feedback), processing depth and motivation (Ibid.).

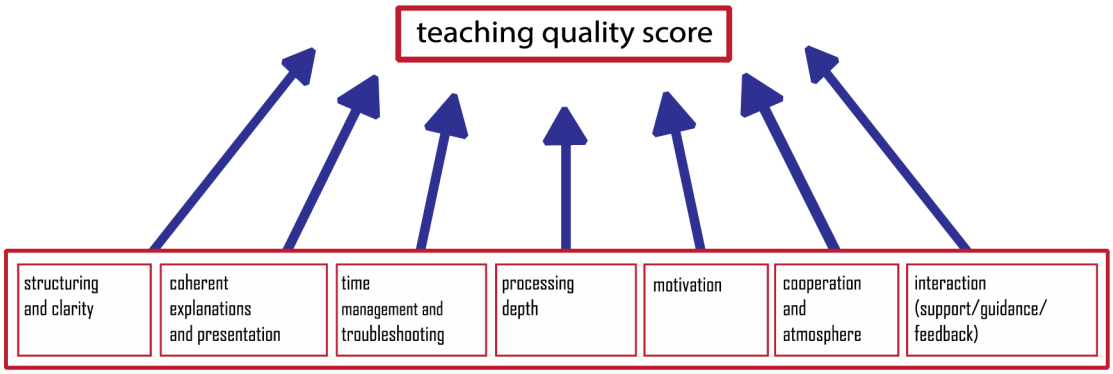

Figure 1.1: Model of didactic characteristics of personal teaching quality (according to Tilmann et al. 2011, p.81)

Results of such evaluation tools help to illustrate the quality of study programs, courses and subject areas with their strengths and weak areas, but they are limited to the scope of what they collect. Therefore, most evaluations describe qualitative course aspects with the aim of improving the quality (Mähling 2011), but they usually do not collect information about transferring learnt content into the practical field. However, research which investigates such a broad range of educational processes can be found – for instance, in the field of economics. Gessler, who observed whether participants of business courses could transfer learnt content into their field of work, performed one of these studies. He discovered significant correlations between a successful transfer and the transfer orientation of the training (r=0.526), between a successful transfer and the transfer motivation of participants at the end of the training (r=0.494) and between a successful transfer and chances to implement content from the training to their workspaces (r=0.421) (Gessler 2011).

But what do Gessler's results tell us about the relation, for instance, between transfer motivation and a successful transfer in the field of education?

Without results which verify the same effects, we can't make confident statements about a connection between them. In this matter, Finkel-Salzer and Gris point out the significance of transfer research. They show that an evaluation of satisfaction and acceptance at the end of a seminar does not necessarily correlate with an actual transfer of learnt content to classroom teaching, which Grewe (2007) or Böwer-Franke and Genger (1980) question,

likewise. For this reason, Finkel-Salzer and Gris disprove any relationship between satisfaction and a sustainable effectiveness (Finkel-Salzer 2002, Grewe 2007 and Gris 2008). Helmke confirms this assumption when he declares that motivation itself is no guarantee for a realization of an intended action (Helmke 2004).

However, some studies investigated courses such as professional development regarding their implementation into the field of work. Faas and Dalheimer, for instance, observed effects of such courses within the elementary level (kindergarten). Effects could be verified, though only to a limited extent (Faas and Dahlheimer 2015). Another study of Trondl was able to prove sustainable effects of professional development courses within its sample (N=93). Her research verified that content about methods of learning according to Heinz Klippert could be transferred to classroom teaching (Trondl 2006).

Regarding transfer research, it is a challenge to find parameters that predict transfer processes. Maresch tries to explain that phenomenon with the complexity of the field of teaching. In his opinion, many factors are interacting in such a process. He offers some hypotheses to explain which parameters might indicate effective development courses. From his understanding coherent planning, courses which take place over a longer period of time, long-term support of course instructors, and practical content, all have a positive impact on the effectiveness of seminars (Maresch 2010 and Steininger 2010). Helmke views teaching under the aspect of quality areas/dimensions (listed in Chapter 3.2) and refers to research on classroom teaching, which searches for aspects that have verifiable effects on learning success of students (Helmke 2014). In different models he also puts emphasis on different stakeholders, where Hattie, for instance, similarly detects criteria for successful learning (e.g. in the learning person, parents, school, teacher, curricula or classroom teaching) (Hattie 2015).

Accordingly, the scientific aim of this research is to find an answer on the question: *What influences transfer processes in professional development?*

The dissertation approaches this question, firstly by looking at the phenomena of transfer processes at a large scale (from influences in the prefield of course participants until the stage of realizing learnt content into classroom teaching) and secondly by focusing on the participants' motivation. Latter emphasis, which is oriented toward the self-determination theory of Ryan and Deci (2017), narrows the previously stated query into the research questions by asking: How do autonomy, competence and relatedness influence transfer processes in professional development?

Empirical data will expand the understanding of transfer processes in professional development by identifying supporting and blocking parameters, and responds to the questions posed beforehand with quantitative and qualitative results from this study.

A second aim of my dissertation, which relates to institutional development, is to establish transfer research at the University College of Teacher Education in Vienna. I aim to use this opportunity to provide the evaluated course instructors with the results of their courses. By doing that, they will obtain a new form of feedback about their courses, including information about transfer experiences, for the very first time. This should present a good chance for them to adjust future courses, if necessary.

1.2. Professional development under the aspect of lifelong learning

Before analysing the actual field of professional development, it makes sense to view it from a larger scale of lifelong learning. Lifelong learning (LLL) has its origins in the 1970s, when meaningful organizations started a discussion about it, even though the expression "lifelong learning" wasn‘t being used yet. The OECD talked about “Recurrent Education”, while UNESCO spoke of “Lifelong Education”, and the Council of Europe referred to “Education Permanent” (Edelmann and Tippelt 2007).

We find more results of European policy regarding lifelong learning for instance in the Bologna declaration and continuative conferences. The Bologna process might end in the year 2020, but lifelong learning is supposed to continue beyond that date, when we interpret Europe’s continuing intention to promote lifelong learning (OeAD 2016). Even though the expression of lifelong learning relates primarily to European institutions, we detect its importance outside European borders. Japan, for instance, highlights this emphasis by declaring teacher training explicitly as lifelong learning (Schubert 2003).

But what does this process of lifelong learning look like in our society? Mayr and Neuweg (2009) structure it in three stages: basic education (*stage 1*); a phase when students complete their studies and enter the field of work (*stage 2*); and finally professional development (including learning on the job) (*stage 3*).

Within this structure, the third stage is of particular importance, because it has had effects on teachers for decades (Maresch 2010 and Mayr and Neuweg 2009). Huber describes this third stage as a period in which teachers can continuously work on their individual professionalization in a self-regulated way, combined with institutionalized ways of development (for instance courses in conflict management for the whole school or seminars about current topics such as educational standards) (Huber 2009).

Since professional development is responsible for the expenditure of money each year, it is also clear that we need to examine it from an economic point of view. This means it has to face the question about any benefit from such activities. Since institutions are interested in careful allocation of their financial resources (Gessler 2011). That is why we are able to observe a change from an input to an output-orientation (or product-orientation) in this field. The implementation of educational standards is another result of this trend, because test results believe to measure how effective skills have been developed (Edelmann and Tippelt 2007, Helmke 2014, Knie and Simon 2010, Maresch 2010 and Mayr and Neuweg 2009).

Discussions such as these lead European organizations to monitor teacher training in terms of its output-orientation. Such events might also explain why the audit board demanded that the University Colleges of Teacher Education focus on the effectiveness of activities for professional development (Rechnungshof 2008 and Steininger 2010). The education ministers at the UNESCO assembly in Bonn 2009 requested additional implementation of education for sustainable development in teacher training and in professional development (Stoltenberg 2010).

Considering these aspects, it seems necessary that professional development has an impact on classroom teaching. To support such transfer processes, and by that the effectiveness of seminars, evaluation is a necessary tool. As I mentioned in the introduction (Chapter 1), the University College of Teacher Education in Vienna implemented an online-evaluation system in its quality management. However, research on transferring content to classroom teaching are hardly common, even though it appears to be important for the Ministry of Education. We can see this importance, for instance, in a circular letter of the former secretary of education, Claudia Schmied, who addressed the University Colleges of Teacher Education and their staff members to support the transfer of learnt content to classroom teaching (BMUKK 2011).

Personally, I think it is an important task of an educational institution to evaluate seminars in terms of their transfer to classroom teaching, which is what Grewe (2007) encourages researchers to do, since he locates a need for research in this field.

Based on my function at the University College of Teacher Education in Vienna, I appreciate discussion about quality management within my field of work. I feel responsible for providing good opportunities for such transfer processes. Thus, it is necessary to analyse professional development courses and locate effective elements for realizing this aim. This is why I intended to develop a suitable instrument for measuring the efficiency of such courses within my field.

1.3. Structure of thesis and its main findings

This dissertation is headed by my personal motivation, an introduction (including the current state of research in this field), the aim of this thesis and a statement of a problem.

The second Chapter introduces the Austrian education system and professional development at the University College of Teacher Education in Vienna, Austria.

After that, I shall start some theoretical discussion of learning/teaching and motivation theory. A short historical overview supports an understanding of how learning/teaching and motivation theories have developed. Then I shall elaborate on the main theories used in my research, which are specifically the learning models of Helmke (2004) and the motivation theory of Ryan and Deci (2017).

The fourth Chapter describes the methodological procedure of this study. It starts with the research questions, followed by hypotheses which are constructed on basis of theoretical statements from Chapter three. Subsequent to that, I shall cover the research design and the realization of this study at the University College of Teacher Education in Vienna, Austria in detail. A holistic understanding of transfer processes made it necessary to view this research under a quantitative and qualitative perspective. Consequently, the first methodological part describes the quantitative study and explains its exploratory function in detecting parameters for transfer processes. Built on results from these findings, the second, qualitative approach comes into use. This part of the dissertation describes the development and the application of interviews and their resulting benefits for this dissertation (e.g. in filling gaps of knowledge from the quantitative part).

Chapter five provides a demonstration of these quantitative and qualitative results, as well as findings beyond the research question.

The dissertation concludes with a summary of the main aspects within this research project, a discussion of critical findings and challenges that occurred during this work. The summary demonstrates the four major findings of this dissertation, which I will briefly list as follows:

Firstly, quantitative data (e.g. a medium effect between a participant's motivation to transfer ideas into a teaching lesson and a successful transfer of rho=0.3) and qualitative results both conclude that *motivation* is an essential element for transfer processes. Secondly, I found plenty of evidence which highlights the importance of *competence* for a successful transfer of professional development to classroom teaching. This statement is not only undermined by statistical relationships (such as the correlation between high qualitative courses and a successful transfer of rho=0.36), data from interviews also show positive effects of existing competence and negative effects when it is missing. Thirdly, we were able to observe support from the social environment on participants within this study. As a result, the relationship to superiors, colleagues and children is a motor for transfer processes. A good atmosphere (observable, for instance, in acts such as the sharing of ideas from a seminar between colleagues) enhances this feeling of *relatedness*. Lastly, teachers had a desire for professional development courses with some *practical value* for their work. Therefore, participants prefer courses with a practical orientation to those with abstract content and subsequently report a more successful transfer.

The last Chapter closes with perspectives on how to implement transfer research in professional development institutions and gives statements for essential follow-up studies.

Since I did not wish to interrupt the flow of this thesis with definitions, the reader will find an explanation of frequently-used terms at the beginning of the appendix (Chapter 10.1), followed by a translation of the survey and the interview guidelines, as well as more detailed information on descriptive results of the quantitative study.

2. The Austrian education system and professional development for teachers

Governments individually shape educational processes on a national level by creating frameworks for them. This also affects the universal meaning of the term education, when it is put into various contexts. Therefore, I believe it is necessary to present the Austrian education system, explain how a person becomes a teacher in this country and finally to describe professional development and its implementation at a national level. This information will then support the understanding of the political context of the research field.

2.1. The Austrian education system

The Austrian education system starts at kindergarten, where children find adequate care until they enter school. During that period, they are prepared for school, through pedagogic activities of various kinds (such as learning motoric skills, behaviour in a social group, memory training, etc.). Usually, children enter school at the age of six. They develop their basic skills during primary school, which lasts for four years (until the age of ten). However, there are some exceptions. Children may enter school earlier at the age of five, if they show the necessary skills, and they can have an additional year of pre-school at the age of six, should they need more time to develop their skills, which are deemed necessary for primary school. Following this, the regular age for entering the next stage, lower secondary school, is ten. At this point, the children have to decide if they wish to attend a new secondary (or middle) school or an academic secondary school. Academic secondary schools require good grades from students in order to be accepted, whereas new middle schools are open to all children. At the end of lower secondary school, pupils have again to decide about their future career by adding at least one more year of compulsory education (if they spent eight years of school until then, which is the usual case). At this point, there will be a decision between different types of vocational schools or the upper cycle of an academic secondary school. Figure 2.1 demonstrates the various options of education in Austria on a primary and secondary level.

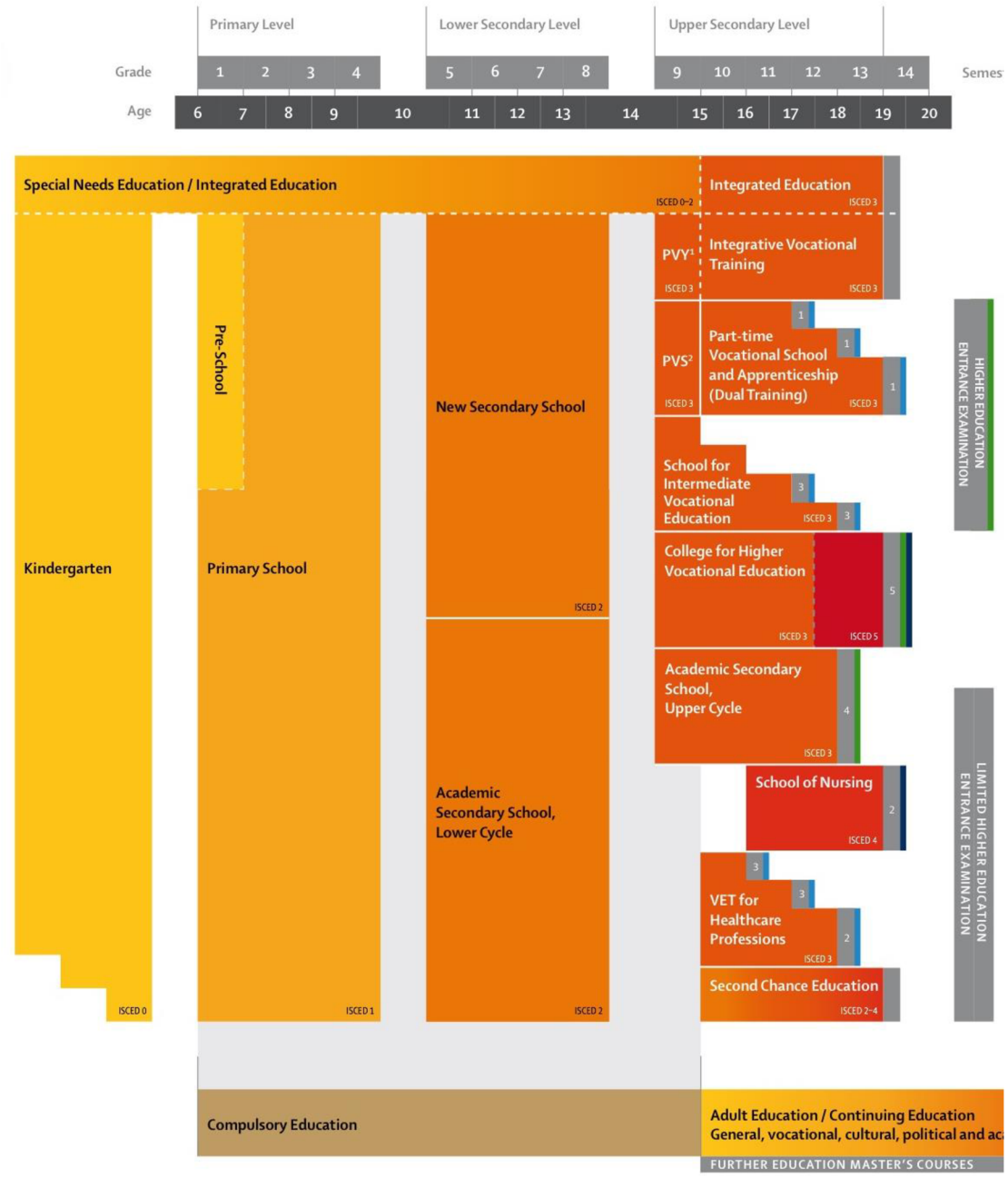

Figure 2.1: The Austrian education system up until entrance examination (Euroguidance 2014)

Secondary vocational schools complete with a wide variety of different certificates, starting from leaving examinations until initial vocational qualifications. However, post-secondary options are as diverse as secondary certificates. Programs support students with lower qualifications (such as professional experience) and with higher qualifications (e.g. initial vocational qualifications). Such post-secondary opportunities are, for instance, the school for people in employment, add-on courses, a master builder and construction worker school, a school for building tradespersons or a postsecondary VET (vocational educational training) course. However, students need a (limited) higher education entrance examination for doing a postsecondary VET course.

Some vocational schools and the upper cycle of an academic secondary school complete with the aforementioned limited or general higher education entrance exam, which will enable students to continue their education at a tertiary level (for example, universities, Universities of Applied Studies and the University Colleges of Teacher Education). However, as the name indicates, limited higher education entrance exams limit their students to a certain field of studies, whereas general higher education entrance exams are open to all kinds of studies. Study programs nowadays usually take six to eight semesters for a bachelor degree, and another two to four semesters for a master degree. Finally, universities provide the opportunity to complete with a PhD at the ISCED 8 level of the UNESCO (Euroguidance 2014 and PH Wien 2019b). For a detailed description of the options in Austria, please see Figure 2.2.

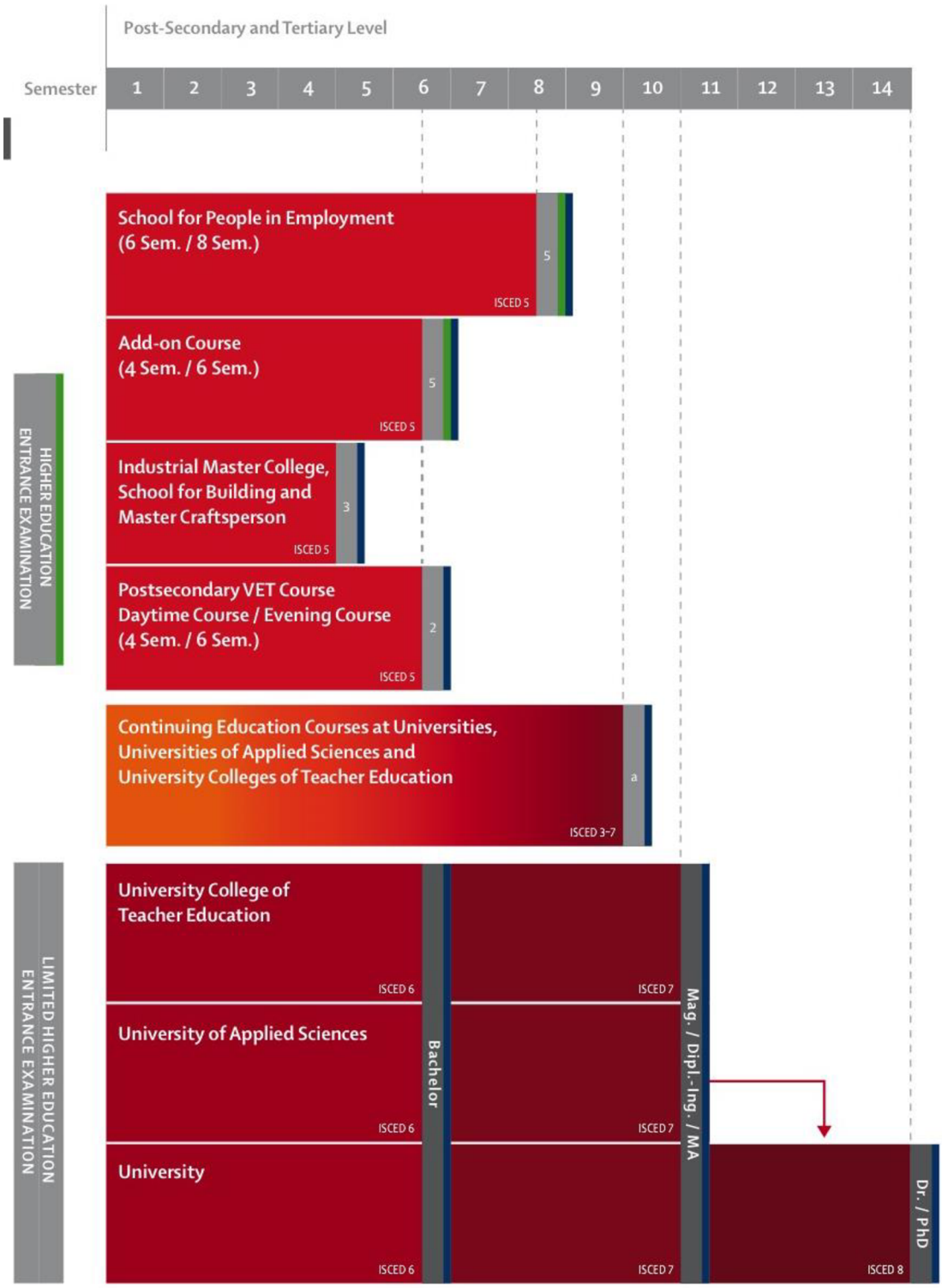

Figure 2.2: The Austrian education system after the entrance examination (Euroguidance 2014)

2.2. How to become a teacher in Austria

A pre-condition for future teachers is the (limited) higher education entrance examination (compare Figure 2.1 and Figure 2.2 from the previous subchapter). After that, prospective teachers have to select the future type of school they would like to teach in. This can either be in primary school (1st until 4th grade), secondary school (5th until 13th grade) or in a vocational school (9th until 13th grade) (Euroguidance 2014). These three types of studies are organized in different ways, which I shall explain in the following paragraph.

Future primary school teachers have to pass an entrance exam, consisting of various tests which measure, amongst other things, their skills in the German language, communication, motor and musical abilities. The purpose of this wide-ranging exam is to ensure that future primary school teachers are able to teach all subjects, since this is the requirement in Austria. The studies are structured as a bachelor and a master program. The bachelor program consists of eight semesters/240 ECTS and allows students to specialize in different focus points, such as science and health, creativity, and so on. This specialization can be continued in the master program, which varies between two (60 ECTS) and three semesters (90 ECTS). The master studies are compulsory and have to be completed within five years after finishing the bachelor program. The University College of Teacher Education is responsible for the organization of these studies (PH Wien 2019a).

Secondary school teachers are also required to pass an entrance exam, testing the participants' logical reasoning and knowledge of specific literature from the field of educational sciences. Students have to choose at least two subjects of interest, which they should be able to teach after completing their studies. Depending on their selection, they might also need an entrance exam in the selected subject (e.g. for Art, Sport, Music, Handicrafts). The studies consist of eight semesters (240 ECTS) for the bachelor degree and additional four semesters (120 ECTS) for the master degree. One of four regional networks of universities and University Colleges of Teacher Education is responsible for the organization of these programs, depending on the location of the chosen institution (Lehramt Nord-Ost 2019).

Finally, there's the option of becoming a teacher for vocational schools with a specialization on fashion and design, information and communication or nutrition. The bachelor program consists of eight semesters (240 ECTS) and the master of two semesters (60 ECTS). In the master program, students can select different fields of study, such as media pedagogy, educational applied media management, fashion and design or nutrition. The study programs for vocational schools are administered by the University Colleges of Teacher Education (PH Wien 2019b).

In Table 2.1 I have provided information about the number of students for each Bachelor program to demonstrate their relation (data from Statistic Austria 2019a).

Table 2.1: Students at University Colleges of Teacher Education in Austria (2018/19) (Statistic Austria 2019a)

Type of study		Percent
Bachelor Elementary Education	334	2.3
Bachelor Primary Schools[1]	6.684	45.8
Master Primary Schools	289	2.0
Bachelor Secondary Schools	5.128	35.1
Master Secondary Schools	94	0.6
Bachelor vocational schools	1.485	10.2
Master vocational schools	13	0.1
Bachelor for schools with special needs	56	0.4
Other[2]	502	3.4
In total	**14.595**	**100.0**

[1] According to the old and new curriculum (since October 2015)

[2] Current Bachelor and Master programs for schools for people in employment, colleges for higher vocational education, religion, career changers and for musical education

Although the previous statistics show that there are slightly more bachelor students for primary schools than for secondary schools, the teacher numbers of the same year illustrate that secondary school teachers comprise the majority in the Austrian school system. Table 2.2 shows us the variation of teachers in Austria according to the type of school they are currently teaching in (school year 2018/19), based on data from Statistic Austria (2019b).

Table 2.2: Teachers in Austria (school year 2018/19 incl. teachers in maternity leave) (Statistic Austria 2019b)

	Austria	Percent	Vienna	Percent
Primary Schools	36.441	28.2	7.141	26.2
School for Special Needs	5.852	4.5	2.228	8.2
New Secondary Schools	30.364	23.5	4.090	15.0
Academic Secondary Schools	23.401	18.1	7.164	26.3
Secondary Schools merged (New and Academic)	53.765	41.6	11.254	41.3
Vocational Schools	23.772	18.4	4.317	15.9
Other	9.528	7.4	2.293	8.4
All school types	**129.358**	**100.0**	**27.233**	**100.0**

2.3. Professional development at the University College of Teacher Education in Vienna, Austria

Finally, when teachers have completed their studies, they are able to teach in the classroom. This entrance into the field of employment is connected with new rights (such as guiding a class) but at the same time, it implies official duties, which teachers have to fulfil. Even though the end of their studies completes their basic education, there still remains a lot to learn in the field of teaching. Messerschmid (1980) already argued that teacher training only opens the door for future teachers, and consequently highlighted the necessity of further professionalization courses in this matter. Therefore, universities and University Colleges of Teacher Education assist teachers in their daily work by offering professional development courses with methodological and didactic assistance as well as courses to deepen their knowledge on specific subjects. This seems especially important in the vocational field, because jobs can experience rapid changes over time, but also because other processes of change affect teachers throughout their working life (for example, technological, political, legal or sociological changes, the implementation of new subjects, etc.). At the same time, professional development is an opportunity to compare the basic knowledge from teacher training with experiences from professional life and to develop those skills. However, in contrast to a bachelor's or master's study, professional development accompanies teachers during their occupational life, something which should be in the interest of a state's education system to ensure up-to-date quality of teaching (Klippert 1990, Kramp and Wehle 1980, Kröll 1980, Messerschmid 1980, Müller et al. 2010, Rechnungshof 2007 and Reincke 1980).

In addition to this, professional development enables institutions (and as a final recourse, the state or education ministry) to have an impact on teachers by offering target-oriented courses. The obligation to participate in professional development is regulated differently, however, depending on the type of contract and school level of a teacher. Several laws regulate these duties for Austrian teachers. In general, we can distinguish between teachers, who are subject to state law (e.g. in primary school, new secondary school

and schools for special needs) and teachers who are subject to federal law (such as those in academic secondary schools and vocational schools). The most essential law, which regulates professional development for state teachers, is the public service law. It describes the duties in which "the state-teacher has to strive for professional development" [3] (Landeslehrer-Dienstrechtsgesetz, BGBl. Nr. 302/1984 i.d.g.F., see in RIS 1984). In a different part of this law, it is also defined that the state teacher has to avail themselves of at least fifteen hours' professional development per year [4] (Ibid.).

Federal teachers need to attend professional development courses if the occupational interests require their participation (regulated in the Beamten-Dienstrechtsgesetz 1979, BGBl. Nr. 333/1979 i.d.g.F., see in RIS 1979[5]).

As a result of several distinct contracts and relevant laws there is a difference in terms of professional development between federal teachers – who are encouraged to professionalize themselves in their own interest – and state teachers, who have to attend courses of at least fifteen hours per school year (Rechnungshof 2007).

[3] Translated from German. Original text from §29(3) "Der Landeslehrer hat um seine berufliche Fortbildung bestrebt zu sein." (Landeslehrer-Dienstrechtsgesetz, BGBl. Nr. 302/1984 i.d.g.F., see in RIS 1984).

[4] Original text: „§43(3) Im Rahmen der Jahresstundensumme gemäß Abs. 1 Z 3 sind [...] 4. für die Teilnahme an verpflichtenden Fortbildungsveranstaltungen, die im Zusammenhang mit der Tätigkeit des Lehrers stehen, 15 Jahresstunden [...] vorgesehen" (Landeslehrer-Dienstrechtsgesetz, BGBl. Nr. 302/1984 i.d.g.F., see in RIS 1984).

[5] Original text: „§58. Der Beamte hat, wenn es die dienstlichen Interessen erfordern, an Lehrveranstaltungen teilzunehmen, in denen die für die Wahrnehmung seiner dienstlichen Aufgaben erforderlichen Kenntnisse und Fähigkeiten vermittelt, ergänzt und erweitert werden beziehungsweise in denen er die für seine Tätigkeit notwendige praktische Unterweisung erhält" (Beamten-Dienstrechtsgesetz 1979, BGBl. Nr. 333/1979 i.d.g.F., see in RIS 1979).

After I have demonstrated the legal background of professional development in Austria, I shall explain its registration process and differing forms of organization.

Each teacher in Austria has access to an online platform which holds information about available professional development courses. The conventional process starts with a registration phase in May for upcoming courses in the winter semester, and another enrolment stage in November, for courses offered in the summer semester. Once teachers have registered for courses of interest, headmasters and the supervisory board need to approve their registration. At the end of an attended course, each teacher receives an attendance certificate, which has to be shown to the headmaster before the end of the school year (to verify participation in the compulsory fifteen course hours for state teachers).

As well as the variety of content within professional development courses, they can also be organized in distinct ways. One alternative is to offer a school-based course for the teachers of one specific school. This is especially useful when the council of a whole school works on team processes, a school profile or on quality management. Another form of professional development involves the teaching staff of more schools which are located nearby. The Ministry of Education currently emphasizes these two varieties. Typically, universities and University Colleges of Teacher Education offer professional development courses in a centralised way, accessible for all teachers of a state (or even for surrounding states). Some courses which are of central interest are open for teachers of all states of Austria. Usually, such courses aim additionally to create networks across the country. Besides courses which require personal attendance of teachers at a determined place, there is also the chance to register for online courses where teachers simply require an internet connection to participate. A third form combines presence and online participation and is called blended learning (BMBWF 2018, Edelhoff 1990, Niggemann 1980 and VPH 2019).

Lastly, professional development can be distinguished in its purpose of qualification. In the German language, there are even two distinct terms for this. It means that we distinguish between courses which deepen the

knowledge of teachers in terms of the subject they are teaching, methodology and didactic suggestions ("Fortbildung"), and programs which create new qualifications ("Weiterbildung"). The latter usually last for several semesters and include certificates (with ECTS) at the end. Courses about leadership, digital competence, German as second language, and so on, involve such additional qualifications (BMBWF 2018 and PH Wien 2019c).

At the moment, the public University College of Teacher Education in Vienna offers roughly 24,000 professional development courses with 50,000 participants in total, each year (PH Wien 2019d). This large number makes it necessary to coordinate the content of such courses on a local basis (for instance in agreement with the supervisory board) but also at a ministry level (BMBWF 2018).

3. Teaching, learning and motivation theory

The theoretical Chapter of this dissertation describes the development of teaching, learning and motivation theories, highlights their strengths and criticisms, and introduces a developed model to explain the process of the professional development of teachers.

The first part will demonstrate different learning theories from a historical approach and discuss quality criteria for teaching, which have impacts on learning as well. A strong emphasis lies on the concepts of Helmke (2004), whose deliberations have affected the educational landscapes of Germany and Vietnam. The second part of this Chapter will introduce important motivation theories, focusing on the self-determination theory of Ryan and Deci (2017); hence to its closeness to the educational field. Finally, the third part will sum up theoretical considerations in a created model to understand the process of professional development of teachers.

3.1. Learning and teaching theory

How is it possible that some students learn well, while others do not? How can it be, that students of the same class go out of a teaching unit with different learning outcomes?

Questions such as these suggest that the psychological processes of learning work differently on individuals and that we need to think about how to theoretically describe this process of learning. In the following part, I shall show the historical development of such models highlighting some major interpretations in learning/teaching theory.

3.1.1. Carroll's model

An early attempt and often-cited model for such an explanation comes from Carroll (1963). He developed a formula, emphasizing the time to measure school learning, which should moreover predict learning success. The first implementation of Carroll's model (Carroll 1962) was in language learning and tested children's aptitude. According to his findings, low aptitude resulted in a longer learning time to achieve a defined standard.

However, after framing his first model in language learning, Carroll suspected that other factors, such as the quality of instruction or the ability of students to understand them, might have an impact as well. His theoretical concept therefore expanded to five variables responsible for school achievement, which are aptitude, opportunity to learn, perseverance, quality of instruction and the ability to understand instructions. I shall explain these variables in the next paragraphs.

Firstly, *aptitude*, as previously stated, is related to a person's skills, which is able to be measured in tests. Carroll states that a person with high aptitude has to invest less time to reach a certain learning goal than a person with low aptitude. The second variable describes the *opportunity to learn*, which can vary according to the learning circumstances in the school. For some tasks the students may have less time, for others more time, for some they might be able to engage at home, other tasks might have to be learnt and tested at school during a limited time slot. The third variable is, like the two before, related to time. *Perseverance* defines "the amount of time a student is willing to spend on learning the task or unit of instruction" (Carroll 1989, p.26).

In contrast to the other three variables, the next two are concerned with achievement. Therefore, the *quality of instruction* influences learning, since a student has to invest more time in learning when the quality is not good. The same is valid for a person's *ability to understand instructions*. If this ability is low, again more time has to be dedicated to the task to achieve it. In worst case, a student might not understand an instruction at all (possibly because of poor quality or low ability), which would then lead to tasks not being achieved at all (Carroll 1963).

Carroll puts his theoretical assumptions in a simple formula, stating that the time students actively engage in a learning task is divided by the time needed to complete the task. The latter includes a relation between their aptitude (usually IQ), their ability to understand, knowledge they already have and the provided quality of instruction. In short, he expresses school learning as the function of time spent divided by time needed (Ibid.):

School Learning = f $\left(\frac{\text{time spent}}{\text{time needed}}\right)$.

Even though Carroll managed to explain the learning process in a very simple way, his model is more of a quantitative nature, neither relating to a different quality of learning time (McIlrath and Huitt 1995), nor responding to social influences on learning. Nevertheless, several other researchers grounded their ideas on Carroll's concept, as we shall see in the following theories.

3.1.2. Bloom's model of mastery learning

Carroll's model inspired, among others, Bloom. He developed his concept of mastery learning, which was based on Carroll's ideas. Bloom believed that students can achieve mastery learning either by reducing the time needed to accomplish a learning task, by increasing the time spent on the task itself or by both (Bloom 1968 and Carroll 1963).

This assumption also lead Bloom to criticize the fact that many students in school did not master their learning goals. He further argued that some teachers do not even expect all of their students to achieve these goals, which has a negative impact on educational processes. Bloom stated that teachers may expect one third of an average class to fail the goals defined by their teacher, one third merely to pass them, and one third to fulfil them in the way the teacher intended. Following this, he expressed his criticism about this system as follows, by warning against such an attitude, not only in the environment of a school, but also for society: "The cost of this system in reducing opportunities for further learning and in alienating youth from both school and society is so great that no society can tolerate it for long." (Bloom 1968, p.1).

As indicated in the quotation, Bloom sees not only the importance of successful school learning for children themselves, but also for our society in terms of lifelong learning (for example, through training on the job). He suggests that we should give learners the opportunity to master their learning goals if they were unable to complete them at a first attempt. This implies they need additional time, probably different teaching methods, learning techniques, or different learning materials to reach their learning goals. However, this approach has to distinguish itself from common sense, which suggests that school learning can be framed by a normal distribution. According to this thinking, there will be some good learners, some who fail and a majority passing goals without being outstanding. These results may be true if we assume a normally distributed class combination in terms of the students' aptitude and the same instruction given for all students (in terms of quality, provided time to fulfil a task, etc.). Nevertheless, Bloom sees exactly this factor as crucial for a change in education. The challenge, according to

him, is not to provide the same instruction for all students and assign grades in line with the normal distribution, but to detect individual differences and to provide learning options for mastering a subject. Bloom thinks that most students (over 90 percent) will be able to master their learning with support like this (Bloom 1968).

3.1.3. Proctor's model for teacher expectations

Proctor (1984) did important work on implementing social influences into his concept of learning. He was involved in developing a school-based model for teacher expectations with the Connecticut State Department of Education. The main idea of his concept is that teacher expectations have an influence on the achievement of their students, something also suggested by Bloom in his concept of mastery learning (Bloom 1968). This assumption arises from various studies, verifying the Oak School Experiment of Rosenthal and Jacobson (1968) (e.g. Doyle, Hancock and Kifer 1971 and Palardy 1969). In the original experiment, teachers of an elementary school had been told that some of their students were about to develop very well in the near future (which they called late blooming). The study, which lasted for two years, showed a higher intellectual growth[6] of the experimental group in contrast to the control group (Rosenthal and Jacobson 1968). Consequently, Proctor suggests, teachers with high expectations on their students positively influence their learning achievements, whereas teachers with low expectations have a negative impact on them.

[6] defined as the difference between the IQ of a student at the pre-test and at the post-test (Rosenthal and Jacobson 1968)

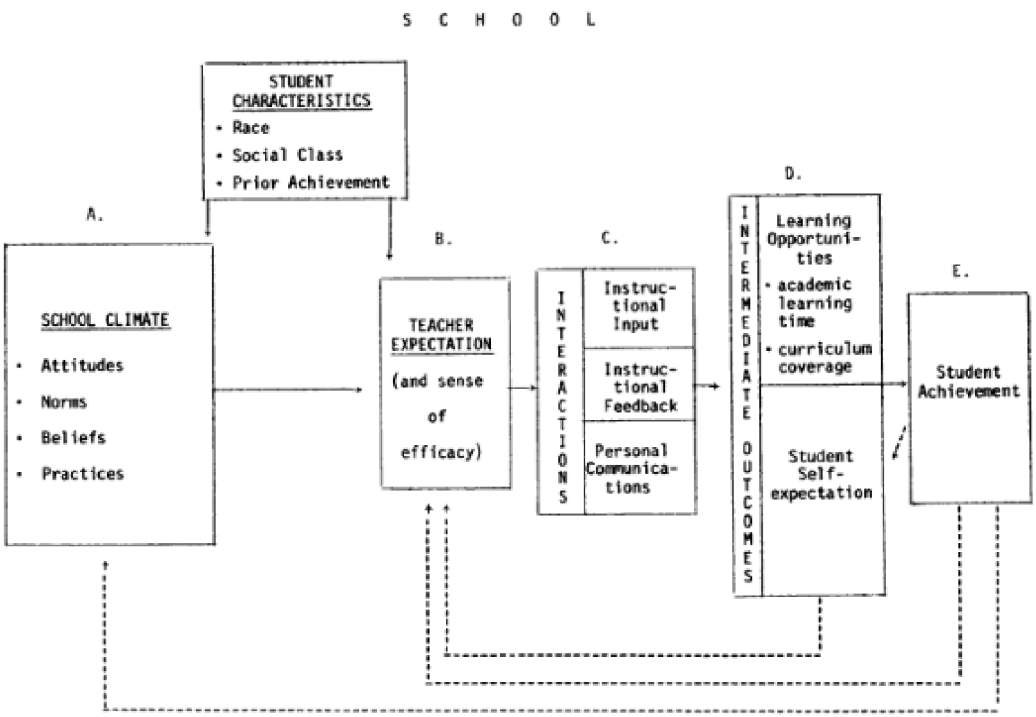

Figure 3.1: A school-based model for teacher expectations (Proctor 1984, p.476)

As illustrated in Figure 3.1, Proctor's model relates personal characteristics of students (such as race, social background and achievements they made in the past) and the school climate (norms, beliefs, etc. that predominate within the school) to an impact on student achievement, in contrast to other concepts of this time.

3.1.4. Cruickshank's model

Cruickshank, a former professor in teacher education at the Ohio State University, Columbia, reviewed existing models and merged them to explain the interaction between teaching and learning in the classroom. He argues in an analysis that concepts for determining "good" or effective teachers showed no significant findings until the 1960s. An explanation for this fact lies in inconsistent research methods (such as rating the quality of teaching by different raters with divergent results), according to him (Cruishank 1985). Therefore he based his considerations on models which were developed after this period - e.g. the models of Dunkin and Biddle (1974), and Mitzel (1960). The idea to look at teaching in terms of product, process and presage originates from Mitzel (1960). He defined product as a change in students'

behaviour, process as an interactive element between teachers and students, and presage as the ability to adapt teaching on the needs of students. Therefore, Mitzel suggests that presage affects process, which consequently has an influence on the product (Ibid.).

In their model for the study of classroom teaching, Dunkin and Biddle extended Mitzel's presage, process and product variables with context variables (see Figure 3.2). Additionally, they described the variables in more detail. According to them, presage, for instance, includes the formative experiences of teachers, their experiences from training and their properties and skills. Their added context variable highlights – for instance, properties and formative experiences of the pupils, and the classroom climate. Consequently, presage and content variables have an impact on the process by influencing teacher and pupil behaviour in the classroom. As a result, the behaviour of pupils changes and leads to product variables, indicated by immediate and long-term effects of the pupils (Dunkin and Biddle 1974).

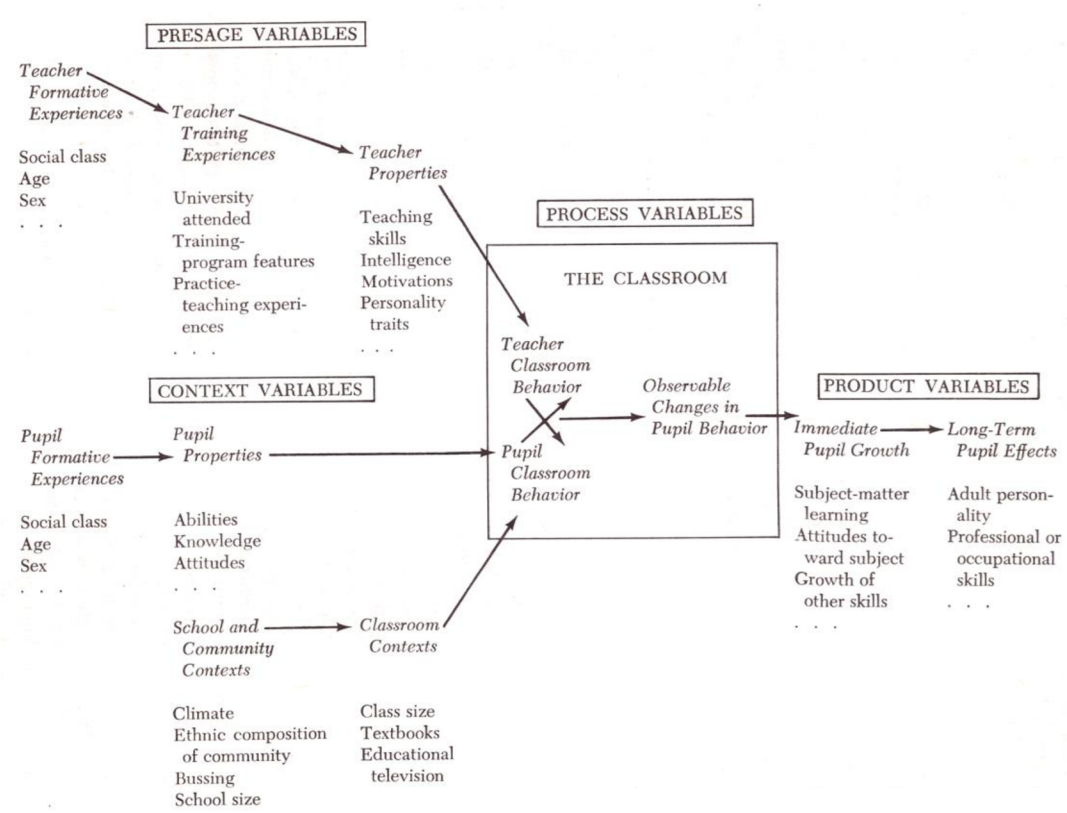

Figure 3.2: A model for the study of classroom teaching (Dunkin and Biddle 1974, p.38)

Concluding, Cruickshank suggests different elements which can enhance student's learning (product variables), based on results from various

studies. In terms of classroom organization, he recommends that teachers have high expectations of students (similar to Bloom's suggestion) and to communicate them in a clear way to the students. Concerning didactic, Cruickshank mentions the importance of reviewing, summarizing and individualization (e.g. for feedback, but also when setting individual levels of difficulty for learning activities). Finally, he gives advice to organize the classroom well according to clear rules and to establish a friendly atmosphere (Cruickshank 1986). In a second paper, he highlights the importance of teacher clarity, which can be implemented in various fields (such as choosing preservice teachers or enhancing the abilities of in-service teachers) (Cruickshank 1985). In summary, we can find many suggestions in Cruickshank's considerations for improving the teaching process, which thus leads to better learning of the students as well.

3.1.5. Gage and Berliner's model

Gage and Berliner's model distinguishes itself from the concepts mentioned before, because it explicitly involves evaluation in the teaching/learning process. Their model (as illustrated in Figure 3.3) shows a timeline on the top, which explains certain elements that occur before, during and after instruction. Gage and Berliner highlight the fact that considerations have to be made before any instruction begins. Therefore, teachers need to select objectives which students should achieve by the end of a teaching session. This is sometimes a challenge if there is a lot of information on a specific topic, which will need to be reduced. The objectives should be linked to the interests of students, otherwise it will be hard to engage in a topic and further motivate them to learn. The process of instruction begins when the teacher has determined adequate methods which support students to achieve prior defined learning goals. Finally, teachers have to use appropriate evaluation tools, to obtain feedback on students' knowledge and skills. This means the instructional sequence may end, if students accomplish previously defined objectives. In the case of students achieving their learning goals partially, the teacher should provide some additional time to revise the topic and if they do accomplish learning the defined objectives, there should be a need to reconsidering the whole instruction and approach to the topic (Gage and Berliner 1996). The consequences of these evaluation processes have been mentioned already in Bloom's mastery learning, which likewise suggests individual repetition until mastery arises.

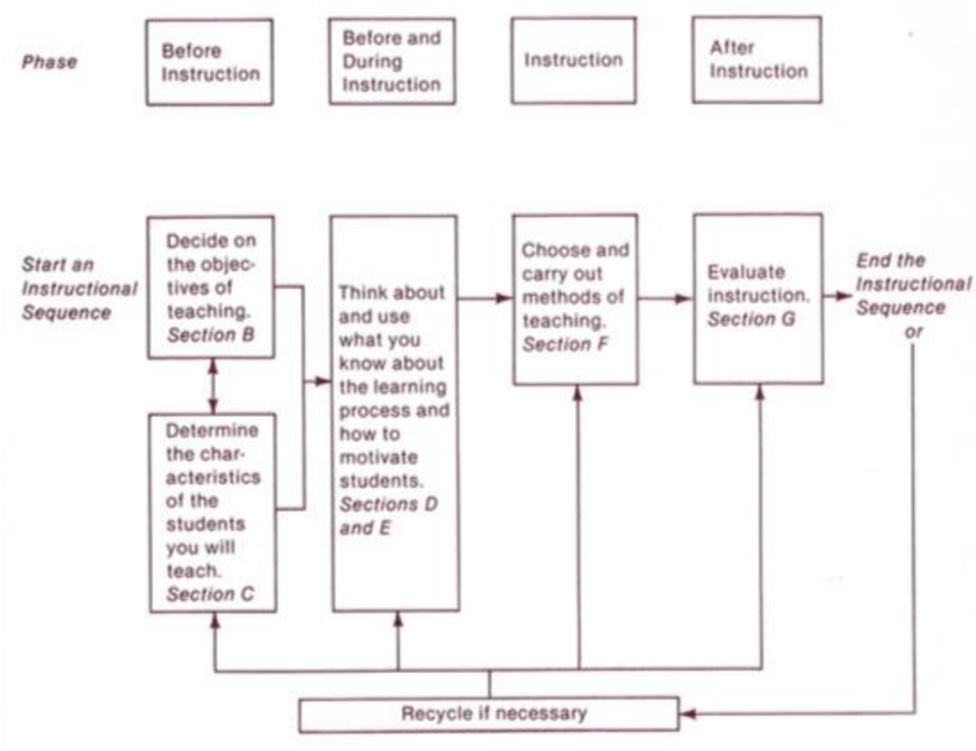

Figure 3.3: A model of the teaching-learning process, showing how the sections of educational psychology fit the model (Gage and Berliner 1984, p.7)

The essential element of Gage and Berliner's model is that evaluation is a necessary process to identify divergences between objectives, set from the teacher and objectives, accomplished by the students. Once we have detected these, we have the chance to give each individual learner more potential and time to succeed in them, or in other words, to achieve mastery learning.

3.1.6. Huitt's model

Huitt analysed existing learning and teaching theories (similar to Cruickshank in the 80s) and created his own model based on that knowledge. He began his considerations with processes within the classroom, which can be found in early concepts (e.g. Carroll 1963), and embedded them in context variables (e.g. Cruickshank 1985 and Proctor 1984). Huitt explains the importance of contextual influences on learning processes, with a shift of our society from an agricultural/industrial emphasis into an age of information. This makes it necessary to emphasize the context processes, since they open a gap in which society has an influence on learning processes. Additionally, it

is also in the interest of schools to prepare their students to perform well in that society.

Based on these assumptions, Huitt created his model for teaching/learning processes in three steps. It begins with an input, depending on the characteristics of students and teachers, and is followed by classroom processes in which teachers and students interact. The teaching/learning process completes with an output – illustrated, for instance, by student achievement. The whole process is embedded in various contexts, such as the family, state policies, or even religion and television. Once again, Huitt shows his emphasis on the contextual part (better illustrated in Figure 3.4) (McIlrath and Huitt 1995).

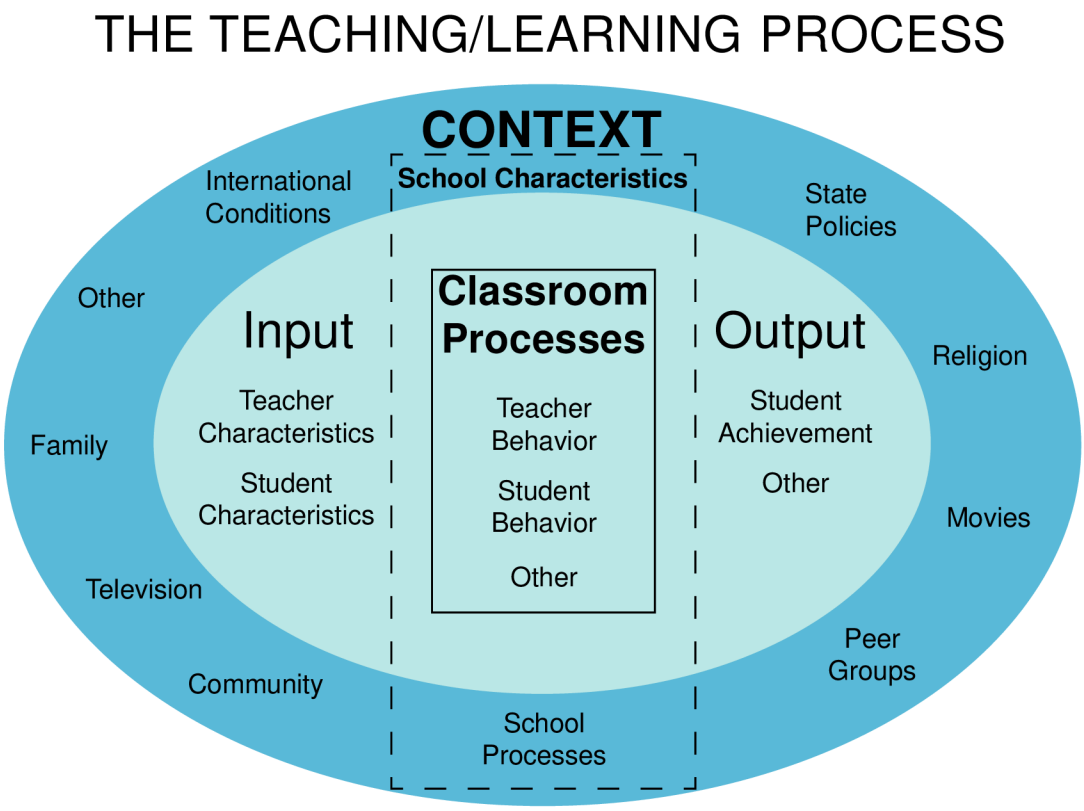

Figure 3.4: Huitt's model of the teaching/learning process (own illustration according to McIlrath and Huitt 1995)

Huitt analyses his model and suggests good predictors for certain elements of it. To do this, he uses Academic Learning Time (ALT), which is a part of classroom processes, as a reliable indicator of student achievement. In this context, he defines ALT as the time available for a learning task which will be tested. Supplementary to Carroll's (1963) considerations, he argues that effective learning time in school also varies on the days of the current school year, the sum of days over which a student attends (e.g. in the case of being ill) and the time which is available throughout a school day (varies if a student stays in school half a day, or the whole day). In terms of input, Huitt suggests teacher efficacy to be a good predictor of student achievement, since the belief of a teacher in the students' aptitude has a large impact on the results of the students (as shown in studies e.g. of Doyle, Hancock and Kifer 1971 and Palardy 1969). The second important input variable, according to Huitt, is the aptitude of students, which has to be taken into account, especially when all students have the same learning time. Then it is obvious that student achievement will rely on the individual aptitude.

To conclude, Huitt has already provided a very detailed model to explain teaching/learning processes. The following concepts of Helmke will deepen these considerations a little further.

3.1.7. Helmke's offer-uses-model of the effectiveness of teaching

The German researcher Helmke is well known for his expertise in the field of education. He advised German and Vietnamese ministries in educational decisions and developed models with the aim of explaining teaching and learning processes.

In the following section, I shall describe his first model, which puts teaching and learning into an offer and use relation. The theoretical consideration on this model is based on Fend (1981). Helmke and Weinert supplemented this base-model and created the offer-uses-model (Helmke 2004). We will also uncover similarities with the model of Dunkin and Biddle, which I have described previously (e.g. in terms of influences from context variables, experiences from teachers and pupils, or even the classroom climate) (Dunkin and Biddle 1974).

The presented model implies that instructors provide an offer through their classroom teaching. However, the use of this offer can be influenced by many parameters (Helmke 2004).

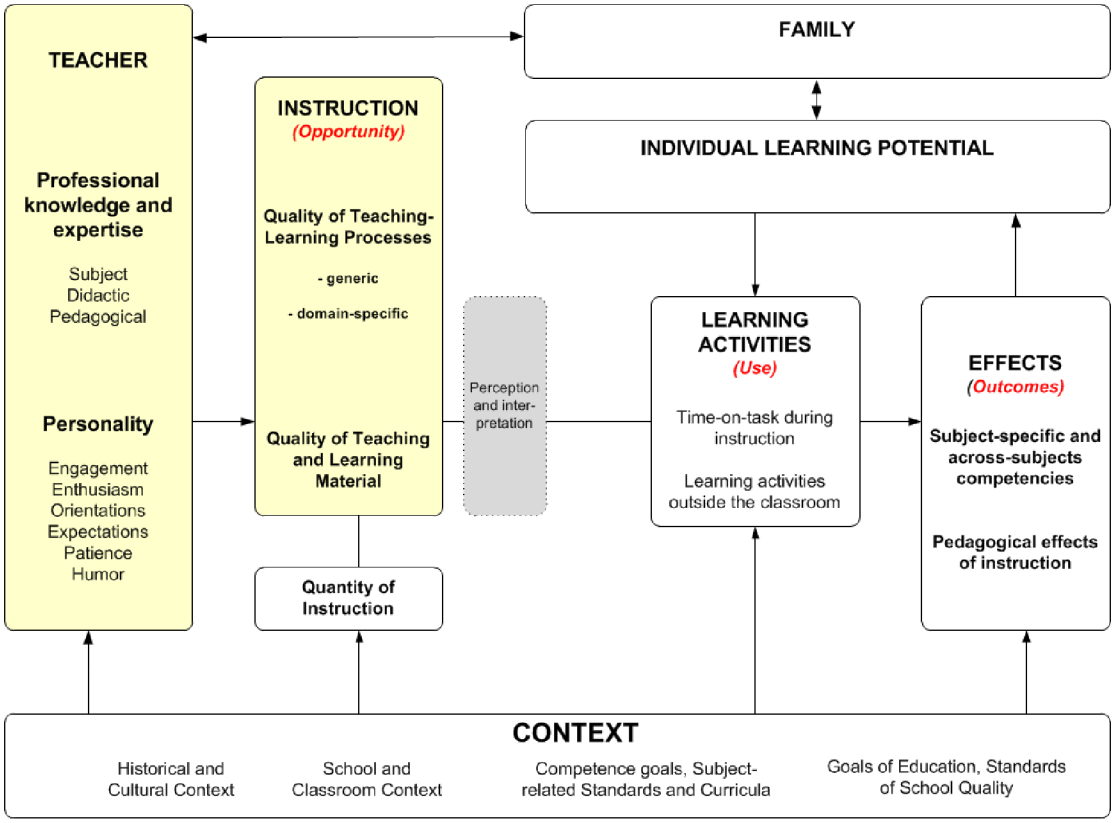

Figure 3.5: Offer-uses-model of the effectiveness of teaching (Helmke 2004, p.42[7])

Helmke structures the teaching/learning process in several interacting elements so as to create a better overview of it (see Figure 3.5):

Teacher: Teachers usually initiate the learning process in schools. Characteristics that distinguish them are their expertise and personality. Consequently, knowledge about the subject, didactic and pedagogical skills, or even patience and humour of a teacher can affect the instruction and therefore the quality of teaching and learning. Figure 3.5 indicates such an influence, even if it is in an indirect way (in contrast to instruction, for instance (Ibid.).

Instruction (opportunity): This subarea consists of sensitive handling with differentiation and individualization, adjustment to the student's needs and the current situation, coherence of the classroom teaching and motivation. It implies the quality of teaching/learning processes, likewise the quality of material supporting it. In contrast to Gage and Berliner (1996), Helmke defines this stage also as an opportunity for the learner to develop knowledge and skills (Helmke 2004).

[7] translated figure received from the author via e-mail

Family and individual learning potential: Different learners have different qualifications and experience different influences from their families. Consequently, there are differences in pre-knowledge, learning strategies, intelligence, motivation and many other parameters. As a result, these entire characteristics have an influence on learning processes (Ibid.). Bloom's model of mastery learning picks up on those differences with the aim to reach learning goals by focusing on individual learning techniques, strengths or simply enough time devoted to learning a subject. If students are therefore provided with such opportunities, he predicts cognitive but also affective growth (Bloom 1968).

Perception and interpretation: How pupils perceive classroom teaching depends on many parameters. Motivation and emotion, for instance, play an important role in this process (Helmke 2004). Helmke and Weinert structure these processes, also called mediation processes, into three categories: (1) selective perception of information from classroom teaching (offer) accompanied by a process where this information is classified and weighted, (2) subjective interpretation, followed by encrypting and reviewing procedures and (3) processes that include a student's attention (Helmke and Weinert 1997). The models described in the last subchapter have not mentioned this emphasis explicitly. For Helmke and Weinert it is essential, though, because this is the last stage, which influences learning processes and therefore leads to successful or failed learning.

Learning activities: The learner confronts herself/himself actively with learned content while learning activities take place. That is when the offer (content) is embedded in practical use (Helmke 2004).

Effects (outcomes): We find the output of this offer-uses-model in intended and unintended effects. Helmke differentiates those into disciplinary and interdisciplinary effects (Ibid.).

Context: Finally, the context influences many parts of this teaching/learning process. Similar to Proctor (1984), Cruickshank (1985) or Huitt (McIlrath and Huitt 1995), Helmke highlights the importance of contextual factors. Figure 3.5 demonstrates that the context affects several other parts within this process. Contextual factors, according to Helmke,

involve, for instance, the cultural background of students or the location of a school, various characteristics within the classroom (heterogeneity or individual qualifications) and even curricula and educational standards (Helmke 2004).

In summary, Helmke's offer-uses-model of the effectiveness of teaching shows how different elements of a teaching/learning process interact and how effects may arise.

3.1.8. Helmke's framework of individual, social and institutional conditions of changes in personal teaching

In a second model of Helmke, he describes different sequences within this transfer process of learning. Apart from continuous stages of learning processes (affected by classroom teaching), he also describes individual qualifications and relations within and outside of a school context (Helmke 2004).

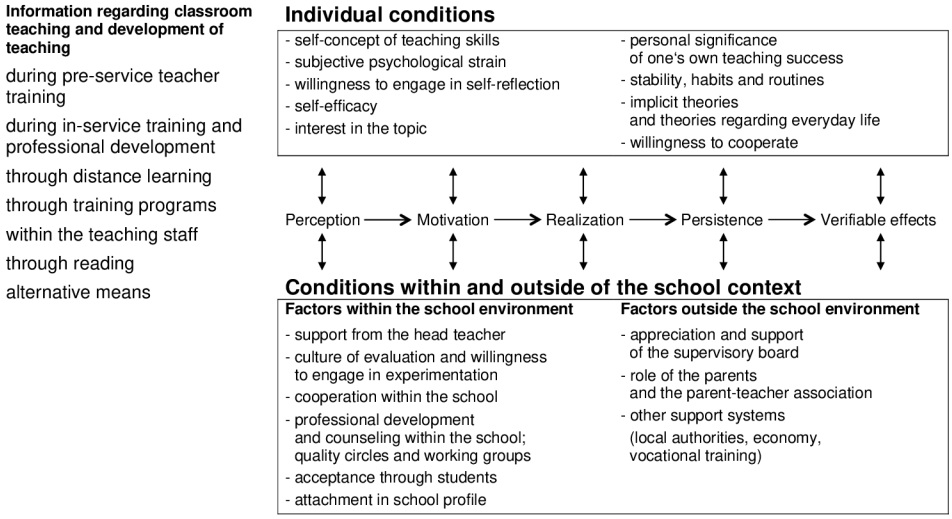

Figure 3.6: Framework of individual, social and institutional conditions of changes in personal teaching (own illustration, translated from Helmke 2004, p.200[8])

Figure 3.6 shows six continuous stages within classroom teaching that are listed horizontally:

1. Information: The initiating element of Helmke's model is information. It can be obtained from different sources such as working colleagues or a seminar which a teacher has attended (Ibid.).

2. Perception: The learning person perceives information within this stage, similar to the offer-uses-model. In the context of professional development this would mean that a teacher perceives information, provided by a course instructor within a seminar, for instance (Ibid.).

[8] translation approved by Andreas Helmke

3. Motivation: After collecting information, the learner must make a decision. One option is to transfer the learned content into a new situation (e.g. classroom teaching), another one is not to do so (Ibid.).

Information that ends at stage three of Helmke's model might be explained with the term inert knowledge, originally created by Whitehead. This notion describes knowledge which is ostensibly available, but not used in a situation. Renkl sees this problem not only in a school, but also with students who are unable to transfer learned knowledge into their professional lives. He gives three explanations for inert knowledge: incomplete meta-processes, structural lacks (knowledge is not available in enough extent to transfer it) and knowledge that is connected to certain situations and cannot be transferred to another context (Klauer and Leutner 2012 and Renkl 1996).

4. Realization: Once the learner (in our case the participant of a professional development course) passes stage three positively, content might find its way to classroom teaching. This process is called realization. Motivation alone (stage three) is, according to Helmke, no guarantee to transfer information into an action (Helmke 2004).

5. Persistence: When someone repeats an action, such as implementing an idea from a seminar in classroom teaching several times, persistence applies. This stage is not always easy to master since problems can occur. Nevertheless, for passing it positively it's necessary to continue performing the learnt actions (Ibid.).

6. Verifiable effects: The final stage of this framework is reached when changed behaviour has been established and can be measured/verified by the learner's outcomes (Ibid.).

Parameters such as individual qualifications and relations within and outside of a school context have an additional effect on the functional chain described before.

Individual conditions: The willingness to self-reflection, self-efficacy, an individual's own interest in the topic and the willingness to cooperate can influence the mentioned stages (Ibid.).

Conditions within and outside of the school context: Activities, such as professional development involving the whole teaching staff of a school,

provide a supportive environment for implementation processes in classroom teaching. The principal's support of such activities has an additional impact on such processes (Helmke 2004 and Röder, Drössler and Jerusalem 2010).

Helmke and Weinert postulate that the learning success of students can be additionally improved either by school-internal or external parameters. In this context they mention school-internal parameters such as education and professional development of teachers, cooperation between colleagues, school environment (rooms, equipment, etc.), the qualification of the principal, the meaningfulness of a school-profile (including agreed behaviour/actions in certain situations) and the socio-demographic background of students. Relevant external parameters are, for instance, the importance of the family/the role of parents or appreciation of the school supervisory board, according to Helmke and Weinert (Helmke and Weinert 1997 and Helmke 2004).

3.1.9. Summary of learning and teaching theory

In this Chapter about teaching and learning theories, we started with early attempts to explain the relation between teaching/learning processes and student achievement. One of the first significant models came from Carroll (1963), who was a pioneer in defining learning time. He simply stated that the time spent divided by the time needed results in school learning. We are able to identify Carroll's considerations in many other theories which based their ideas on his thoughts. One of them was Bloom (1968), who introduced the term "mastery learning", which he considered as essential for learning processes. According to his theory, a teacher should give the student enough time to learn and use various didactic approaches to reach as many learners as possible. We also talked about Proctor (1984), who highlighted the importance of clear instructions to support the understanding of students. Another important instrument for teaching/learning is evaluation, which was introduced in Gage and Berliner's model (1996). They used evaluation to measure if objectives of a teaching session have been achieved, or if they need to be compensated in future sessions. Then we highlighted theories which involve context variables to describe teaching/learning processes. One

of these can be found in a model of Huitt (McIllrath and Huitt 1995). He summarized several other theories and merged elements of them into his own concept, which focuses on input variables (such as the teacher and the student), classroom processes, output variables and the context (for example society, family, etc.), which have an influence on all others.

Finally, we focused on two concepts, both developed by Helmke (2004), which I shall use in an adapted version to describe teaching/learning processes within my own study. Helmke discussed learning/teaching as an offer from a teacher and instruction as an opportunity, which learners are able to utilise. This offer-uses model puts its attention to processes of perception, since they are influenced in many ways like the learner's individual knowledge (or aptitudes), or even from impacts from our society onto the learner. Lastly, we reviewed a second model of Helmke, which describes the stages between perception and outcomes in more detail. This states that perception is followed by a certain amount of motivation to use the learned information, which may lead to a realization of skills and abilities and after a period of persistence can result in verifiable effects of the students.

We can see that learning and teaching processes are very complex, as this brief summary of this Chapter demonstrates. However, the more we are able to describe them, the better we can understand how ideas come alive.

3.2. Quality of teaching

In the previous sections, we discussed different models for learning and teaching to explain this process theoretically. For a wider understanding of it we still need to classify such a teaching process in terms of its quality.

Teaching in everyday life is often associated with the attributes “good” or “bad”, which is further assumed as labelling the quality of teaching and learning. Helmke traces two approaches that try to identify the quality of classroom teaching. The first one is a process-orientated perspective that focuses on processes during lessons. From its point of view, “good” classroom teaching follows profound scientific quality principles (e.g. observation of classroom teaching according to standardized categories). The second one is a product-orientated perspective that emphasizes outcomes (effects) of a lesson. Such outcomes are measured with empirical methods and have become a significant instrument in research. Helmke advises a combination of both approaches, however, to give comprehensive statements about teaching quality (Helmke 2014). However, Terhart focuses on a distinction between “good teachers” and “successful teachers”. According to him, a good teacher fulfils functions such as teaching, supporting and advising students, whereas a successful teacher is identified by a greater positive output from his students, measured by standardized tests (such as PISA, TIMSS, etc.). Supporting and advising students can certainly be methods successful teachers employ, similar to what a good teacher does in their teaching. Nevertheless, successful teachers show additional, high outputs of their students, which can be measured by various tests with empirical methods, in contrast to “good teachers” (Terhart 2007). In terms of the former mentioned product-process-paradigm, Borich and Klinzing state a different approach. They highlight the student’s perspective, in dividing processes into ones that involve teachers and ones that concentrate on the students. We can imagine the whole process being initiated by the actions of a teacher, followed by triggered processes from students, resulting in an output, again created by the students. This is why the paradigm they mention is called the process(teacher)-process(student)-product(student)-paradigm (Borich and Klinzing 1987).

For a deeper understanding of the term quality within this context, it is necessary to think about characteristics that are part of classroom teaching and that might “co-determine”[9] teaching and learning.

In this matter Helmke (2014) mentions ten quality areas, which are classroom management, structuring and clarity, consolidation, activation, motivation, supportive classroom climate, student orientation, competence orientation, handling of heterogeneity and diversity of “instructional methods and learning activities” (Brophy 2000, p.6).

The quantity of the above listed quality areas gives once more an illustration of the complexity of teaching and learning processes. Helmke postulates that within this complex system it is not necessarily the maximum of each attribute that leads to “good” teaching. Some weaknesses/strengths might be compensated for, others can be supportive/unsupportive in different subjects, educational objectives or class combinations (Helmke 2014). Lipowsky considers the latter as an important parameter for students’ learning. He argues that teachers in learn-efficient classes can adapt their classroom teaching to the high learning potential of their students and increase learning progresses by that. In this regard, he explains up to 30% of learning progresses with characteristics of classroom teaching, the teaching person and classroom combination, citing for instance Hattie (Lipowsky 2007).

In what follows, I shall illustrate Helmke’s quality areas with a focus on aspects relevant for transfer processes of professional development in adultery education:

3.2.1. Classroom management

This category implies how students are instructed within learning settings in the classroom, how rules and routines are applied and how time for learning activities is used (actively or passively, e.g. for teaching content or for disciplinary purposes, which we can also find in Terhart’s behaviour of successful teachers (Terhart 2007). In terms of an effective use of the

[9] Helmke and Weinert use the term “co-determine” (Helmke and Weinert 1997, p.72) to accentuate that we cannot find linear connections between one parameter that explicitly relates to learning success.

available time for learning processes, Helmke and Weinert suggest not a maximal, but an optimal use of it. They warn us that a maximal use of learning time could result in decreasing motivation of students (long-term) (Helmke and Weinert 1997). In an investigation of the subject of English (listening comprehension) Helmke was able to show that classroom management correlated well with the students' interest in learning ($r=0.44$). The correlation was highly significant at the level of $p<0.001$ (Helmke et al. 2008b).

However, rules and disciplinary strategies might not be of such importance for professional development, if we consider the length of these courses in contrast to long-term work with pupils. In any case, the effectiveness of active learning time might influence the effort and interest of participants as well as in school settings.

3.2.2. Structuring and clarity

Classroom teaching that supports learning processes therefore has to offer information (e.g. in a presentation or in activities). The structuring and clarity of that information is essential for subsequent learning processes (e.g. Helmke 2014, Meyer 2004 or Slavin 1994). But not only does the structural set-up of content have an impact, also comprehensible language shows influences on learning (e.g. Hattie 2015, Meyer 2004 or Slavin 1994). Schnell addressed this issue already in 1850 when he appealed to teachers to use clear and succinct language (Schnell 1850).

Unsurprisingly, several studies show positive effects of structuring and clarity on learning. Gage, for instance, suggests that a well-organized teaching session has a positive impact on the learning of students (Gage 1996). He concludes this assumption from results of several studies, for example through relating the performance of students to the efficiency of short learning sequences (Belgard, Rosenshine and Gage 1971), or by relating it to disorganization (Anderson and Walberg 1968, Walberg and Anderson 1968, Walberg 1969a, 1969b). In his book *Visible Learning*, Hattie highlighted the importance of clear and comprehensible language for learning in schools with

an effect of d=0.35 (Hattie 2009). He also points out that advance organizer[10] (supporting the learner to connect old with new information), transparent success criteria and recognizable learning goals have effects on learning (Ibid.). Helmke and Schrader showed, in their SCHOLASTIK-study, that three characteristics of teaching were extremely important for the performance of students (according to Helmke's quality areas), which are structuring and clarity, efficient classroom management and motivation. This means that these characteristics are also meaningful for successful teachers (Helmke and Schrader 1998). In another study of Helmke, Rindermann and Schrader they proved that clarity and structuring are particularly relevant for a learning progress (clarity correlated with values ranging from r=0.42 until r=0.56, and structuring at r=0.57 with learning progresses) (Helmke, Rindermann and Schrader 2008a).

3.2.3. Consolidation

Helmke points out the importance of practice and repetition for learning processes, which we also see addressed in Bloom's model of mastery learning (Bloom 1968). However, such activities can be performed very differently. The range varies from drilling and practice to motivational, individual activities with social and methodological variations (Gudjons 2006, Helmke 2014 and Heymann 2005).

3.2.4. Activation

Learners can be activated in different areas. Cognitive activation has the aim of increasing self-directed learning with learning strategies and different methods. In Hattie's meta-analysis he was able to demonstrate large effects (d=0.85) of organizing and transforming skills (such as summarizing or paraphrasing) on the learning success (Hattie 2009). Social activation implicates cooperative learning, which is, according to Hattie, noticeably more effective than competitive or individual learning (Ibid.). Other ways to activate

[10] John Hattie defines advance organizers as means for helping the learner in structuring and organizing learnt content. This procedure supports the learner in linking old with new information (Hattie 2009).

students are student-orientation (e.g. by involving them in planning processes) or physical activation (Helmke 2014). Terhart confirms the importance of student-activation by defining it as a criterion for successful teachers (Terhart 2007)

3.2.5. Motivation

Since the theoretical approach of motivation in the context of learning processes needs a more detailed consideration, I shall come back to that in Chapter 3.3.

3.2.6. Supportive classroom climate

The classroom climate is linked to a large extent with the teacher as a role model. Characteristics such as being friendly, caring and supportive provide a pleasant learning atmosphere and should be maintained by students as well as by teachers. Reciprocal respect, awareness for rules and opportunities to learn from mistakes expand those values (Brophy 2000, Helmke 2014, Meyer 2004 and Weinert 1999). Humour is another aspect that is often related to a positive learning atmosphere. Several studies prove the positive impact of it on learning processes, especially in teaching foreign languages (e.g. Darling and Civikly 1987, Nöth 1995, Raaf 2005, Rißland 2002 and Schulze 1995).

Helmke also sees relations between a positive classroom atmosphere and aspects such as interest, motivation and pleasure in learning. Some studies have demonstrated only marginal relationships between these latter parameters and the performance of students, however. Helmke has an explanation for this discrepancy. According to him, it does not make sense to take the maximum value of a classroom atmosphere for the optimal setting. Helmke suggests finding an optimum between the two extremes (e.g. humourless - excessively humorous, etc.) (Helmke 2014).

In addition to interpersonal attributes, structural skills may affect the classroom climate as well. Therefore, a well-structured learning atmosphere

can support the individual needs of students (such as working on different tasks at a different pace).

3.2.7. Student orientation

This quality area overlaps with activation and with the classroom climate. Meyer even sees it as a part of the classroom climate (Meyer 2004). Nevertheless, student orientation as a standalone quality area also involves a personal connection between teacher and student (that is, if a teacher sees the value of time to speak about student problems or personal things, whenever they occur). In addition to this, student orientation implies student feedback as a chance to improve the quality of classroom teaching (e.g. Helmke 2014 or Tschekan 2011).

3.2.8. Competence orientation

Knowledge transfer must be linked with precise planning, when it is being viewed under competence orientation. Therefore, it should focus on targets (competences that students need to achieve at the end of a learning sequence) and proceed in reverse order, compared to the learning process itself (Helmke 2014 and Lange 2005). Lersch adds that competence-oriented teaching necessarily leads to different didactical and methodological decisions in contrast to traditional teaching and highlights the importance of those (e.g. the necessity of options for training pronunciation when learning a language) (Lersch 2007).

3.2.9. Handling of heterogeneity

Helmke points out four criteria of learners under discussion in terms of heterogeneity of school classes: pre-knowledge, migration background, the stage of development and the learning style. Leutner gives three orientations to support teaching in a heterogeneous setting. According to him, teachers can adapt learning targets, teaching methods or time required to complete tasks. However, all of these adaptions should be orientated towards the pre-knowledge of the students (Leutner 1992 and Helmke 2014).

3.2.10. Diversity of "instructional methods and learning activities" (Brophy 2000, p.6)

This quality area describes the diversity of teaching methods (e.g. discovery learning, open learning, teacher-centered learning, etc.) (Helmke 2014). Wiechmann states the importance of a good balance between those methods and a plausible use of them (Wiechmann 2011).

3.2.11. The quality areas under a tertiary perspective

Though these quality areas have been constructed for a school context, Helmke constantly indicates that most of it can be applied at a university level as well (Helmke 2014 and Helmke, Rindermann and Schrader 2008a). Therefore, it is not surprising that we find many similarities when discussing teaching quality at universities. As a consequence, Tillmann's evaluation tool (STUD-FEL) represents, for instance, constructs such as structuring and clarity (quality area 2 according to Helmke), motivation (quality area 5) or cooperation and atmosphere (quality area 6) (Tillmann 2011). We find another example from Huber, who makes suggestions for professional development courses on the basis of results from an international study of education managers. This research from fifteen countries also partly overlaps with Helmke's quality areas. He mentions that active participation (quality area 4), an orientation on the evaluation of a course, participants' needs (such as learning time), and competences (quality areas 7 and 8), can have positive effects on such courses. In addition to that, he underlines the importance of orientation on transfer, practical implementation, relevance, and so forth (Huber 2009).

Besides pointing out many similarities, Helmke also states differences between these two institutions (school and university) regarding learning. Hence there are divergences – for instance, in the degree of voluntariness, autonomy and self-responsibility (in terms of learning activities), the role of individual interests and competences, the learning environment and frequency of exams for the learning person (Helmke, Rindermann and Schrader 2008a).

3.3. Motivation theory

The first theoretical part of this Chapter focused on teaching and learning without going deeper into motivational aspects accompanying these processes. The purpose of this second subchapter is to compare major motivation theories, explain why the self-determination theory has been selected for this research project and to give a deeper understanding of this specific motivation theory.

Before going into depth about certain theories, we should consider the question of what motivation actually consists of. Armstrong and Taylor share a simple, yet concrete, definition in their handbook of human resource management practice. They describe motivation as “the strength and direction of behaviour and the factors that influence people to behave in certain ways” (Armstrong and Taylor 2014, p.167). But what influences us to behave in certain ways?

Historically, many theorists have tried to understand the motivation underlying human behaviour. Early approaches explained behaviour as a consequence of instincts. Ideas about that extend back to the time of Darwin, who investigated instincts in animals. In the last century, other researches such as Lorenz continued his work with the aim of understanding animal behaviour (Darwin 1859 and Lorenz 1937). When we confront instincts from the perspective of evolution, it makes sense that humans also rely on them. Rheinberg and Vollmeyer (2012) suggest that humans respond to instincts in particular when physiological needs or the needs of survival arise (Ibid.). When it comes to psychological processes, the opinion of scientists differs. Different theoretical approaches towards motivation reflect this contrast. There are (a) content (or need) theories and (b) process (or cognitive) theories. In what follows, I aim to explain those two schools of motivation and highlight important interpretations of them. The main part of this Chapter will then describe the self-determination theory, structuring it into sub- (or mini-) theories for a better understanding, and emphasising theoretical considerations with studies and examples in the field of education. I shall conclude with some major sociological papers and highlight them under the aspect of motivational theories.

3.3.1. Content/need theories

Pratap characterizes content theories, which are theories focusing on the internal processes of humans, to explain behaviour (Pratap 2016). In other words, motivation is primarily driven by human needs seeking to be satisfied. Famous interpretations of this content-approach are Maslow, Alderfer, Herzberg and McClelland, whose theories I will briefly explain in what follows.

3.3.1.1. Maslow's theory of hierarchical needs

Maslow made an important step in describing motivational processes with his hierarchy of needs. He categorized human needs as a hierarchical order and assumed that lower needs must be satisfied first, before higher needs arise.

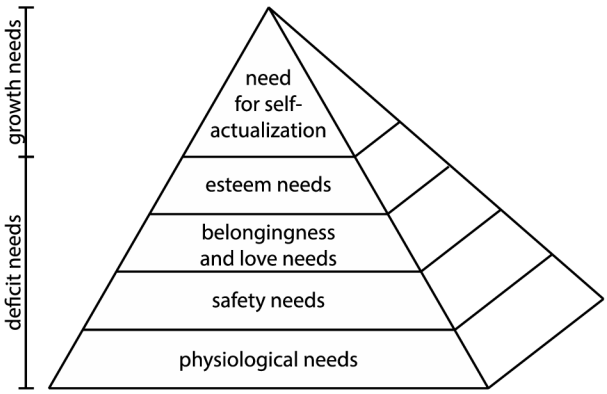

Figure 3.7: Maslow's hierarchy of needs

Maslow theorizes five human needs, demonstrated in Figure 3.7. These are psychological needs, security needs, belongingness needs, esteem needs and self-actualization needs. According to his theory, people have to fulfil their physiological needs (food, water, sleep) first in order to generate a need for safety. Once this person feels safe (has a secure job, can afford a sufficient standard of living, etc.), needs for belongingness (such as friendship and love) will arise. Together with esteem needs, such as receiving appreciation from others, these comprise the so-called deficit needs, which humans feel driven to satisfy first. Once a person reaches this stage of the hierarchy, a new category, called growth needs, may apply. Self-actualization is such a growth need, according to Maslow (Haag 2013 and Maslow 1970).

Maslow's model of motivation helps to explain different behaviour of

humans in similar situations by the need a person is currently trying to satisfy. This model provides a good understanding of human behaviour, but it has been criticized for not being suitable to predict future behaviour (Haag 2013).

3.3.1.2. Alderfer' ERG theory

Alderfer continued Maslow's work and adapted his hierarchy of needs. He subsumed Maslow's needs to three needs and described them as existence needs, relatedness needs and growth needs. The name of Alderfer's theory builds from the first letter of those needs (ERG, for existence, relatedness and growth).

Figure 3.8 shows the connection between Maslow's and Alderfer's need categories. Thus, existence needs include hunger, thirst (physiological) and safety needs on a material base (such as earnings from work). Relatedness needs cannot be satisfied alone – it takes relevant others to achieve them. They involve interpersonal safety, belongingness and interpersonal esteem. The next category is growth needs, which push a person to the limit of available capacities. Growth needs lead to an individual developing new skills as they are being satisfied. As a result, fulfilling a growth need creates a feeling of becoming one step closer to being complete. This category implies self-confirmed esteem and self-actualization (speaking in terms that Maslow used) (Schneider and Alderfer 1973).

Maslow Categories	ERG Categories
Physiological	Existence
Safety—material	
Safety—interpersonal	Relatedness
Belongingness (social)	
Esteem—interpersonal	
Esteem—self-confirmed	Growth
Self-actualization	

Figure 3.8: Comparison of Maslow's and ERG's concept (Schneider and Alderfer 1973, p. 490)

Besides this classification distinction between Maslow's hierarchy of needs and Alderfer's ERG theory, there is another difference. According to Maslow, his needs have to follow in chronological order, which Alderfer does not presuppose. According to him, it is also possible that humans are motivated for the need of relatedness, even though they might be suffering financial problems, which would be a need of existence/safety and therefore a pre-condition from Maslow's point of view (Ibid.).

3.3.1.3. Herzberg's two-factor model

Herzberg also based his theoretical thoughts on Maslow's assumptions. Herzberg looked at the hierarchical structure in an organizational context, which lead him to rethink Maslow's theory. He was not satisfied with the idea that employees would have to fulfil their deficit needs first, before being able to satisfy growth needs (which would be the case according to Maslow's theory). Herzberg performed a study in which he interviewed approximately 200 people consisting of engineers and accountants working in U.S. companies. The researchers asked them about situations in which they felt very happy or unhappy related to their job. Afterwards, the reported statements were collected and related to a satisfier (good feeling) or a dissatisfier (bad feeling). After evaluating the results of his research, he developed a theory distinguishing between the mentioned two factors, which he called hygiene factors and motivators. The former leads to job dissatisfaction when they are not fulfilled (e.g. pay or good working environment), whereas motivators can result in job satisfaction (e.g. enjoyable work tasks, opportunities of professionalization and personal development, recognition or responsibility). Herzberg's two-factor model suggests that hygiene factors and motivators do not stand in opposition, but are simply separate from each other (see Figure 3.9).

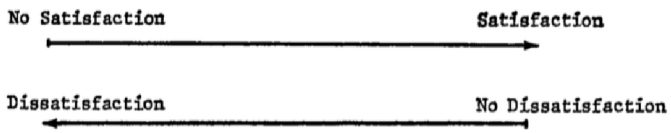

Figure 3.9: Dual-Factor Continua (Bockman 1971, p. 160)

Thus, they are considered as a separate unipolar continuum, in contrast to conventional theories, describing it as a bipolar continuum (see Figure 3.10) (Bockman 1971, Herzberg, Mauser and Bloch Snyderman 1965 and Herzberg 1971).

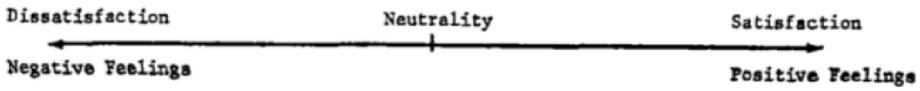

Figure 3.10: Conventional Continuum (Bockman 1971, p. 156)

Organizations which implement Herzberg's theory use (for instance) his suggestions about human resource management. This means managers should not only focus on the lower needs of their employees (such as pay), but also enhance their potentials in personal development, career, etc. (higher needs). Aside from the various companies which engage Herzberg's methodology, it does however faces criticism. Bockman (1971) discusses this "Herzberg controversy", as he calls it, in his paper, by offering some research which confirms Herzberg's theory and other studies which criticize it. On the one hand, Herzberg's theory finds support in studies by Hahn (as cited in House and Wigdor 1959) or Schwartz, Jenusaitis and Stark (1963). On the other hand, it faces criticism – for instance by Ewen (1964), who detected a weakness in Herzberg's study owing to its focusing only on engineers and accountants, instead of applying it to a wider range of jobs. Results from Rosen (1963), for example, located an inconsistency within Herzberg's theory with heterogeneous groups. He found out that jobs which were complex and demanding had a satisfying effect for white-collar workers, but were perceived as dissatisfying for blue-collar workers. Other criticism suggests Herzberg's theory to be too simplistic and detects a lack of ways for predicting behaviour (e.g. Hinton 1968 or Schwab and Heneman 1970). Apart from this scientific controversy, Herzberg's two-factor model is still used for enhancing motivational processes in organizations.

3.3.1.4. McClelland's learned needs theory

In contrast to other need theories, McClelland emphasizes only on psychological needs, whereas, for instance, Maslow (1970) and Alderfer (1973) include physiological needs (such as hunger and thirst) as well. The learned needs theory suggests, as the name already indicates, that humans do not inherit psychological needs, but learn them. McClelland states three motivators that are responsible for our behaviour: achievement, affiliation and power. He argues that we possess all three motivators, but that one is dominant (or sometimes two), depending on our prior experiences. According to McClelland, achievement motivates an individual to complete challenging tasks and to compete with others, affiliation implicates the desire to belong to a group and to work in collaboration with others and power involves the drive to have an influence on other people (or organizational processes). These definitions can be seen to imply that McClelland's theory was intended to explain processes in the work environment and to enhance them by evaluating the motivators of employees. McClelland conducted a study to test his theoretical assumptions. Therefore, he showed pictures to participants and counted their statements, which were related to achievement. The experimental group had been told that their performance was important for their future career, the control group having no such information. The resulting score (*n Achievement*) showed that participants with an urge for achievement reported more achievement-related statements than the control group.

McClelland also points out the significance of cultural differences in terms of his theory. Historically, he relates his achievement motive to Weber's *The Protestant Ethic of the Spirit of Capitalism* (1930). In his important sociological work, he describes the historical impact of the reformation, and a change in people's attitude towards work. Since they did not receive salvation from the priest (in the way Catholics did) they had to earn it based on their individual deeds. In contrast to paying for their sins, there was no obvious sign if someone had received absolution from god or not. Therefore, they interpreted success as a sign of living according to god's will, which resulted in hard work. As a result, one could think that Protestants are more highly motivated towards achievement than Catholics. A study of Winterbottom

(1958), investigated this assumption and found that Protestant parents expected their sons to have achieved self-reliance at an earlier age (6½ on average) compared to Irish-Catholic (7½) and Italian-Catholic parents (8½). The results of this research concluded that the expectations of their parents would thereby influence the achievement motive of the boys. McClelland also mentions studies which surveyed two motivators at the same time, e.g. in terms of analysing political history. The findings of one of these studies identified upcoming totalitarian regimes (as in Germany and Austria) with a high score of *n Power* and a low score of *n Affiliation* (measured in the 30s). For further studies, testing the motivators of McClelland's learned needs theory, I refer the reader to his book *The Achieving Society* (McClelland 1961).

Today, McClelland's theoretical considerations find many implementations in work environments by identifying an employees dominant motivators and optimizing their motivation. Grande (2017), for instance, points out its significance in giving employees feedback. Thus, employees with a dominant power motive should be praised in front of others, because they enjoy being in the centre of attention, but employees who high on *n Affiliation* prefer to receive their feedback face to face, because they do not enjoy a situation when they are in the spotlight. Suggestions like these may help managers to understand their staff's motives and consequently create a better working atmosphere.

3.3.1.5. Summary of content/need theories

Within this subchapter, we have discussed major need/content theories and their relevance for today, which is primarily in an organizational setting. Most of these have developed from Maslow's hierarchy of needs (1970), which is a good example for explaining human behaviour in satisfying our needs step by step. We can understand his theoretical considerations very well from our everyday life, in situations such as being hungry or thirsty, seeking for safety or care, and in trying to fulfil those needs. Alderfer (1973) simplified Maslow's theory by reducing the number of needs and by unlocking the necessity of subsequent needs. Herzberg (Herzberg et al. 1965 and

Herzberg 1971), in a similar manner to Alderfer, made an attempt to reduce needs to two-factors, comprising hygiene factors and motivators. According to his theory we try to avoid hygiene factors (which make us feel bad) and attract motivators (which make us feel good). Herzberg's theory can be implemented very well in the human resource management of organizations.

Finally, we discussed McClelland's learned needs theory (1961), arguing that our behaviour is regulated by the motivators of achievement, power and affiliation (social connection). According to McClelland, we are primarily driven by our dominant motivator, which has been established based on our life experiences.

In summary, the mentioned need theories explain the primary concern of our behaviour in satisfying inherited needs (such as hunger/thirst) or learned needs (such as the need for growth). Either way, the emphasis lies on need satisfaction, in contrast to process/cognitive theories.

3.3.2. Process/cognitive theories

In contrast to the models discussed before, process/cognitive theories make human decisions responsible for motivation. They focus on psychological processes involved in motivation and put emphasis on effects of the environment (for example the work environment) (Armstrong and Taylor 2014). Interpretations of this theory are seen, for instance, in Skinner, Vroom, Adams or Bandura. I shall address the major theories of these interpreters in the following section.

3.3.2.1. Reinforcement theory

The basic idea for the reinforcement theory goes back to Thorndike. He performed tests on cats which had been locked in a cage. The animals could escape from this contained situation by pressing a button, which finally led them to food as positive reinforcement. If he repeatedly put them into the closed cage, the animals remembered that they could always escape with the same procedure which cleared the way to their reward (food). Subsequently, he argued that pleasant consequences will reinforce behaviour and unpleasant consequences will halt it, which he called “the law of effect” (Thorndike 1911).

Based on these ideas, Skinner developed his theory of explaining behaviour. He stated that if we want to understand the behaviour of humans, we would have to analyse as many variables as possible which can influence it. This is necessary to predict future behaviour. If we manage to do this, we are able to manipulate these variables and in consequence control behaviour. Skinner was focusing on animal behaviour, as Thorndike did, because he wanted to move from the simple (animal behaviour) to the complex (human behaviour). Experiments with animals showed that external intervention (stimulus) led to controlled behaviour (response). This interaction of stimulus and response is called reflex. In a well-known experiment of the Russian psychologist Pavlov, he used a sound when dogs received food, which led them to salivate. Repeating this process at some point completed this conditioned reflex and the dogs salivated merely by hearing the sound.

According to Skinner, it is possible to mould human behaviour in a similar manner to Pavlov's experiment. It can be strengthened by positive reinforcement or undermined by negative reinforcement (punishment) (Skinner 1953). This comparison between animal and human behaviour faced criticism consequently, because many scientists assumed humans to be more complex (e.g. Boulding 1984).

3.3.2.2. Vroom's valency-instrumentality-expectancy theory

Similar to Skinner's theory, Vroom's conceptual thoughts have their origins in Thorndike's law of effect (Thorndike 1911), explaining human behaviour as being driven from pain and towards pleasure. Hull (1943, 1951) developed Thorndike's model by relating motivation to satisfiers (rewards) and dissatisfiers (punishment). In Vroom's theory, we can rediscover this focus on external factors such as rewards to explain motivation. He mentions three important factors that are responsible for motivation: expectancy, instrumentality and valence. Vroom demonstrates their connection in the following formula:

Motivational force = Expectancy x Instrumentality x Valence.

The first key component of this formula is expectancy. It describes the probability with which an effort will lead to a particular performance. At the workplace, it means that a worker who does not believe that their effort will lead to a certain level of performance has an expectation of 0. If that worker however considers that the given effort will be able to achieve the intended level of performance, the expectancy has a strength of 1. The second factor in Vroom's model is instrumentality, which links performance and output. It expresses the degree of confidence that an action will actually lead to an expected reward. Consequently, it can diminish future behaviour, if work is never related to a desired outcome (for example, to promotion or salary raise). Finally, valence describes the importance of an outcome for the acting person. Theoretically, someone can be sure that an effort will lead to a certain performance (expectancy), which will be followed by a financial reward (instrumentality). However, there is still a chance that this output is not attractive because money has not such a high value for that person. This

latter issue is of historical relevance for Vroom, who identifies changes throughout history. Thus, during the Greek and Roman Age, work was experienced as a “necessary evil to which mankind must submit himself” (Vroom 1964, p.35). This changed, especially during the time of reformation, which is highlighted in Weber’s *The Protestant Ethic and the Spirit of Capitalism* (Weber 1930). People perceived hard work to be important to fulfil god’s will and to further receive absolution on the day of judgment. Consequently, people (in particular Protestants) strived to work very hard. However, today we experience a strong emphasis on material values, particularly in capitalistic countries such as the United States. Nevertheless, Vroom highlights the importance of social interaction in the workplace as well, because, according to him, financial rewards are not the ultimate solution to achieving valence for employees. This means satisfaction also arises from social rewards such as respect and admiration within the work environment. Additionally, work may also have consequences for the social status of a person in their social environment outside of the workplace.

In short, Vroom argues that all three factors (expectancy, instrumentality and valence) are highly important for motivation and that, if either one is missing, such behaviour will not happen (Encyclopedia of Management 2009, Lunenburg 2011 and Vroom 1964).

His simple theory makes it easy to explain motivation, but also leaves space for more complex theories describing it.

3.3.2.3. Adams' theory of (in)equity

Adams created a new approach to motivation with his equity theory, explaining behaviour by social comparison. His theory developed from the phenomenon of exchange, in which humans experience a situation either as just or unjust (though Adams distances from these expressions and uses the terms equity and inequity instead). A simple context where inequity can arise is between two individuals each receiving something in an exchange, but it can also be seen in complex processes, involving more people (for example, two workers and their employer). Moreover, inequity can be perceived as such from either one person or from both (or more individuals, if more are

involved in this exchange).

Adams argues, that “Inequity exists for Person whenever he perceives that the ratio of his outcomes to inputs and the ratio of Other’s outcomes to Other’s inputs are unequal.” (Adams 1965, p.280). Illustrated in a formula, inequity can appear in two combinations, wherein Adams describes the output of a person (O_p) divided by the input of a person (I_p) in relation to the output of others (O_a) divided by the input of others (I_a):

$$\frac{O_p}{I_p} < \frac{O_a}{I_a} \qquad \frac{O_p}{I_p} > \frac{O_a}{I_a}$$

In terms of equity, the formula symbol changes to equal as well:

$$\frac{O_p}{I_p} = \frac{O_a}{I_a}$$

Adams wanted to discover the consequences of satisfying and dissatisfying situations (or more precisely, situations an individual experienced as being satisfied or dissatisfied). The equity theory is potentially implemented in work organizations. A theoretical example demonstrates its practical use: Employee A perceives her work in relation to employee B. If there’s a difference in the employee’s salary, inequity may arise, except if there’s a reasonable explanation for this difference. Let us say that employee A earns more, because she has worked longer in the company. This explanation might re-establish equity in the employee’s perception.

At the same time, inequity may occur if someone puts a lot of effort into working tasks while others similarly involved do not. Since an individual is working harder than the others, for the same salary, the phenomenon of under-reward applies in this specific situation. As a result, that person could probably change future working behaviour (work less hard), might ask for a rise in salary or even address the relevant colleagues concerning this issue, asking them to work harder too. In a similar manner, someone can experience the opposite when working less than their colleagues, which Adams describes as over-reward. The equity theory obviously addresses managers to establish transparent and fair systems within their organizations. Otherwise, under-reward can create inequity and further a decrease of their employees’ motivation (Adams 1963, 1965).

3.3.2.4. Bandura's social learning theory

At the very beginning of life, we are able to perform certain actions without learning them. Such elementary reflexes, as Bandura describes them, support a new-born child in its survival. During the years which follow, children focus on imitating behaviour and learning by trial and error. By doing so, they learn from experience and shape their future behaviour. These processes are similar to how social learning theory explains human behaviour, though on a more complex level, which will be briefly discussed in what follows.

Bandura starts his considerations with the simple formula B=f (P, E). Phrased as description, this means that behaviour (B) arises from personal factors (P) and from factors of the environment (E). However, there is the issue that personal and environmental factors have an impact on each other. Bandura takes this problem even further, by stating that all three factors (behaviour, person and environment) influence each other, which is why he adapted the formula as shown in Figure 3.11:

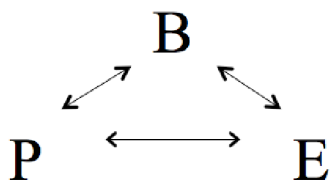

Figure 3.11: Schematization of the relations between the three classes of determinants in triadic reciprocal causation (own illustration according to Bandura 1986, p.24)

The social learning theory, as mentioned earlier, does not limit the learning processes to immediate experience (trial and error), but makes observation responsible for learning. The latter is especially useful when trial and error is too dangerous; in addition, it makes learning processes more efficient. For instance, when we learn to drive a car it would be fatal to attempt this by self-experience. We learn driving rules and how to operate a car safely before we drive unaccompanied on the road. This kind of learning requires abstraction, though, which is why these processes have to evolve. New-born children and young children, in contrast, rely more on imitation, without abstracting behaviour.

Bandura further describes four sub-processes for learning from

observation, which are processes of attention, retention, production and motivational processes (see Figure 3.12).

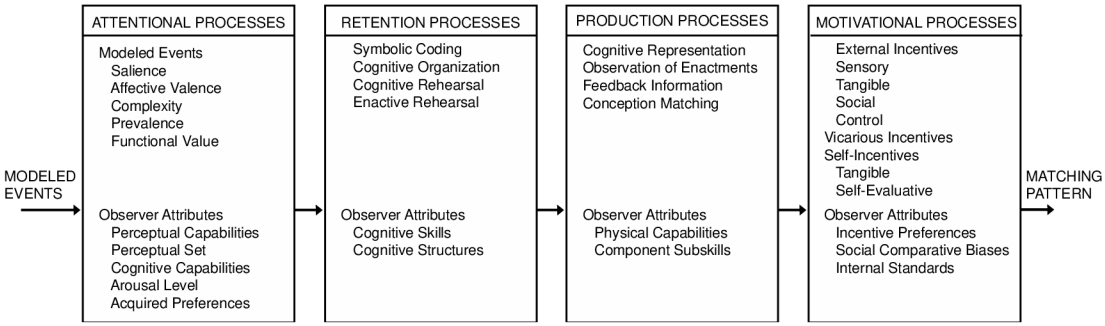

Figure 3.12: Sub processes governing observational learning (own illustration according to Bandura 1986, p.52)

Figure 3.12 shows that we initiate learning from observation by choosing what we focus our attention on. Media such as television or the internet (for example YouTube videos) make access easy to content which catches our attention. After we have decided to engage in an object (or subject), we can observe it and create symbolic codes (stage of retention). Those symbols support memorizing and repeating behaviour, which can also exist in an abstract way (as would a racing skier visualising the layout of the slope in their mind, before actually participating in a race). The observation is then followed by a product, which means to act the behaviour out. We can compare these steps with a dancing lesson, where the teacher shows us a certain dancing figure. We will then revise it in our mind and act it finally out. In the end, Bandura states that it is motivational processes which decide whether what we have learned has any value for us or not.

To sum up, social learning theory states that future behaviour is based on the consequences from previous learning processes. This means we make hypotheses about possible consequences of different kinds of behaviour. Experiences that we have had (no matter whether by trial and error or by copying the behaviour of other people) can therefore strengthen or decrease our future behaviour (Bandura 1979, 1986).

3.3.2.5. Summary of process/cognitive theories

Process/cognitive theories explain our behaviour by means of the cognitive processes in our mind. Therefore, our motivation is not primarily determined by satisfying our needs, but by processes which involve thinking and decision taking. Early process/cognitive theories limited behaviour to reinforcement (e.g. Thorndike 1911 or Skinner 1953) and developed from studies on animals to human behaviour. Vroom (1964), for instance, adapted these early theories to match human motivation and theorized a model involving valency, instrumentality and expectancy. According to him we calculate whether our actions will lead to expected performance with the desired outcome and some worthwhile value that we receive from it. A quite different approach derives from Adams (1963, 1965), who emphasized social comparison as a means of explaining our behaviour. He theorized that we compare our actions with relevant others and consequently place them in relation to each other. This implies we can experience whether our performance is either equal or unequal to others (higher or lower). The focus of Adams lies on the latter, which explains how we either try to work harder (in the case of others working more than we do) or possibly reduce our performance (if others work less than we do). Finally, Bandura's social learning theory states that our behaviour, personal factors and the environment influence each other. According to his theory, the environment may have an influence on us, but at the same time, this might influence our behaviour as well. Bandura (1979) highlights in his theory how humans have the ability to learn by observation, which distinguishes us from lower animals (who are only able to imitate behaviour). This skill helps us to enhance our behaviour by observation and abstraction, and is an essential advantage for faster and safer learning (for example, by avoiding dangerous situations with the help of abstract learning). In summary, process/cognitive theories highlight our mind as the motor behind our actions. Expectations (Vroom), social comparison (Adams) or observation and abstract learning (Bandura) activate these underlying processes.

3.3.3. Self-determination theory (Ryan and Deci)

The two subchapters earlier explained motivation either with the focus on content/needs or from a process/cognitive perspective. The self-determination theory addresses both aspects of motivation, by covering internal processes as well as influences from the environment on human behaviour. Even though it is faced with the critique that it concentrates on motivation in education, it suits the purpose of this research, because the subject of interest is tertiary education.

The self-determination theory (SDT), primarily a psychological theory, has the aim of understanding human behaviour and the motors driving it, similar to other theories mentioned previously. Two professors of the University of Rochester – Ryan, teaching clinical and social science in psychology, and Deci, teaching social sciences – developed this theory. In contrast to other motivational approaches, they assumed the existence of three basic psychological needs (autonomy, competence and relatedness), which affect our actions, in addition to the well-known basic physiological needs (food, water, warmth, rest, e.g. in Maslow's hierarchy of needs) (Maslow 1970). Even though SDT is often related to psychology, it emphasizes in particular on impacts of sociological contexts within motivational processes. Therefore, it connects the concerns of different disciplines such as psychology, sociology, economy and history within its concept of basic psychological needs (Ryan and Deci 2017).

SDT focuses on the support or thwart of basic psychological needs as explanations for human behaviour, in contrast to theories which limit the source of human behaviour to culture (e.g. Iyengar and DeVoe 2003 or Shweder and Sullivan 1993). The authors assume their basic psychological needs to have universal relevance between different cultures and social environments, although to varying extents. The central aim of SDT is thus to understand different characteristics of basic psychological needs within different cultures (Ryan and Deci 2017).

The first basic psychological need that requires further explanation is

autonomy. Deci and Ryan define it as “the need to self-regulate one’s experience and actions” (Ibid., p.10). They warn us though, not to confuse autonomy with independence (e.g. independence from others or from social environments as it can be found for instance in social-cognitive theory, cognitive attribution theory, or cultural relativism) (e.g. Bandura 1989 or Ivengar and Lepper 1999). Deci and Ryan link autonomy to the extent of volition involved in behaviour (Ryan and Deci 2017). They argue that autonomy is a basic psychological need, since it is relevant for all human beings (no matter if someone is part of an Eastern/Western culture, irrespective of gender, etc.) (Ibid.).

The second basic psychological need, stated in the following, is competence. We can find a connection of competence and motivation already in White’s *Ego and reality in psychoanalytic theory* (White 1963). He emphasized on exploring the behaviour of animals and young children. During his studies and theorizing, he illustrated a process, in which motivation led to learning, which further built competence. If we consider a child that plays with an object out of pleasure, it will as a result learn something about this object or about handling it. This process of learning will further build competence. White sums up his argument by stating, “We discover how powerful is our motive to maintain the sense of competence. Thus, it can be said that competence becomes in the course of development a highly important nucleus of motivation.” (Ibid., p.39). Deci and Ryan concentrated in a similar manner on motivational reasons for competence-building. They suggest that this motivation can result either from inner striving (intrinsic reasons) or from external forces (Ryan and Deci 2017).

The third, and last, psychological need in SDT is relatedness. Deci and Ryan theorize that social contexts can also influence our behaviour (Ibid.).

Different types of motivation can drive those basic psychological needs. Roughly, within SDT, motivation can be differentiated into self-determined actions (intrinsic motivation) and other-directed actions (extrinsic motivation). Both actions are determined through motivation; however they differ fundamentally in their development (Deci and Ryan 1991). That differentiation goes back to the assumptions of De Charms and Heider, who

distinguished between intentional actions that include internal perceived locus of causality (I-PLOC) or external perceived locus of causality (E-PLOC) (De Charms 1968 and Heider 1958).

Figure 3.13 gives an overview of Deci and Ryan's different forms of motivation, which will be explained in the following.

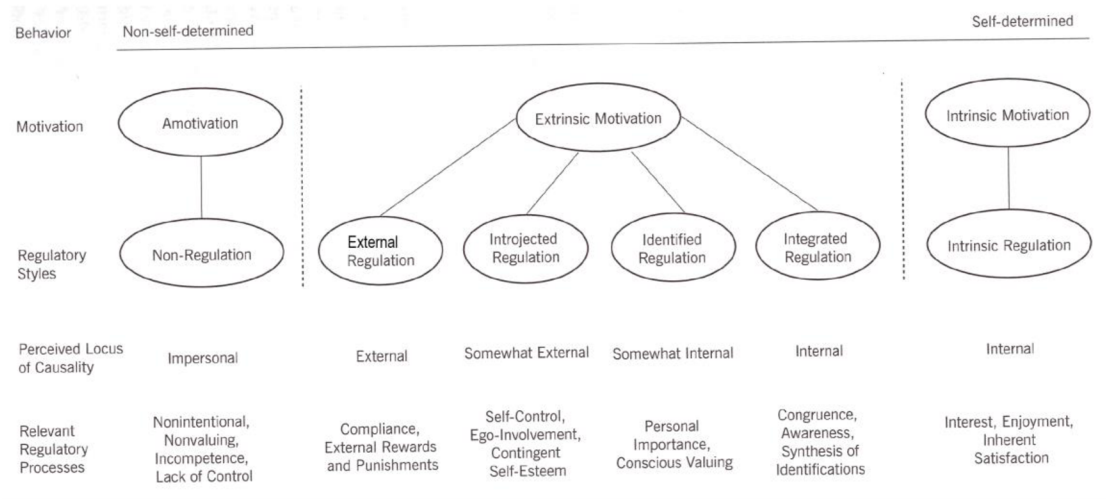

Figure 3.13: The Organismic Integration Theory (OIT) taxonomy of regulatory styles. Adapted from Ryan and Deci 2017, p.193[11].

Starting with a non-self-determined form of motivation (left upper corner in Figure 3.13), *amotivation* implies the absence of an expected action. This can either involve an action which is absent entirely, or an action that intentionally differs from the expected action. There are several reasons which might to explain this phenomenon. An amotivated person can, for instance, lack the necessary appreciation towards an action, not feel competent enough to perform it or have doubts about the action itself (Deci and Ryan 2000 and Ryan and Deci 2017).

Extrinsic motivation does show intentions to perform desired actions (in contrast to amotivation), even though they are not fully self-determined. These other-directed actions can vary in their extent of self-determination (Fries 2010) and are classified into four different regulatory styles: external regulation, introjection, identification and integration (Deci et al. 1991).

External regulation: Behaviours are influenced through external

[11] I corrected a mistake in the figure with admission from the authors. The first type of extrinsic motivation was accidently labeled as introjected regulation in the book instead of external regulation.

parameters (for instance rewards or sanctions) and often lead to poor maintenance. This kind of motivation has the lowest self-determination among forms of external motivations (Deci et al. 1991 and Ryan and Deci 2017).

Example for an external regulation: A girl who is punished by her parents if they catch her drinking alcohol may avoid drinking when her parents are around but might do so if she's certain that she will not get caught (Ryan and Deci 2017).

Introjection: Introjected actions can be assimilations that did not manage to complete or have only partially succeeded. An acting person theoretically has the choice to perform an action or to avoid it. Actually, there is no real alternative to the action itself, which is why introjection has a low extent of self-determination. When introjected, people put control on themselves, which distinguishes it from external regulation.

Examples for introjection: Someone, who does not identify with punctuality and is nevertheless on time to salve their conscience, will not be performing that action voluntarily. Another example would be a girl who does not drink alcohol any longer because she would feel ashamed if she did so (Deci et al. 1991 and Ryan and Deci 2017).

Identification: Behaviour that is related to identification is experienced as personally important, though it might not be totally in line with a person's whole identity. The motivation for such behaviour is still other-directed. The performing person has the feeling of an alternative and can identify with this process.

Examples for identification: Someone who thinks that a lot of practice helps to pass mathematics is aware of the necessary effort to reach a desired goal. Another example would be a girl who gave up drinking alcohol because of her health (Deci et al. 1991 and Ryan and Deci 2017).

Integration: The kind of extrinsic motivation with the highest self-determination is integration. When integration applies, other-directed actions are brought in line with own needs, values and the personal identity, which is why it is considered as fully authentic. A central aim of integration is the personal benefit, in contrast to intrinsic motivation, which is more concerned with the pleasure of an activity (Ryan and Deci 2017).

Intrinsic motivation: In the 19th century, Groos already suspected that young animals did not simply play because of their age, but because they enjoyed playing (Groos 1898). Woodworth interpreted the behaviour of animals likewise, when he considered that a young bird flies because it enjoys the activity. It does not know yet that it needs to practice flight to be able to find food by itself one day (Woodworth 1958). Besides pleasure, intrinsic motivation is also connected to interest, which is markedly predominant when we are children. Intrinsic motivation involves the highest extent of self-determination and finds its satisfaction in the activity itself, in contrast to extrinsic motivation (Ryan and Deci 2017).

Deci and Ryan created six mini-theories within SDT for a better distinction of the mentioned forms of motivation and basic psychological needs, emphasizing different aspects of needs and motivation, which will be illustrated in what follows. Those mini-theories are Cognitive Evaluation Theory (CET), Organismic Integration Theory (OIT), Causality Orientations Theory (COT), Basic Psychological Needs Theory (BPNT), Goal Contents Theory (GCT) and Relationship Motivation Theory (RMT).

3.3.3.1. Cognitive Evaluation Theory (CET)

Cognitive Evaluation Theory (CET) places emphasis on events of the social environment and the question about how they influence intrinsic motivation. This is why CET's primary concern is intrinsic motivation. It assumes that events which enhance a person's autonomy and competence will increase intrinsic motivation, whereas events that reduce one's autonomy and competence will decrease it. Similarities to this theory can be found for instance in Bandura's (1989) self-efficacy and Csikszentmihalyi's (1990) concept of flow. However, Deci and Ryan do not limit their theory to competence. They additionally emphasize the importance of autonomy for intrinsic motivation, in contrast to Bandura and Csikszentmihalyi. Relatedness, the third basic psychological need, is likewise relevant when social contexts are involved in motivational processes (Ryan and Deci 2017).

Several studies have supported CET's assumptions by tackling intrinsic and extrinsic motivation in different situations. In the 70's, Deci (1971) tested

the intrinsic motivation of participants in experiments that dealt with puzzle-solving. Two groups of participants had a limited time to solve puzzles, in which one group was financially rewarded (extrinsic motivation) and the other one was not. This sequence was followed by a free choice period to test the intrinsic motivation of participants, depending on the length of time they voluntarily devoted to the puzzles. The experiment showed that rewarded participants (extrinsic motivation) invested less time in the free-choice period (intrinsic motivation) than the control group (no reward). These results confirm the suggestion that extrinsic motivation undermines intrinsic motivation (Deci 1971 and Ryan and Deci 2017). A similar experiment of Lepper, Greene and Nisbett (1973), performed with children, showed that an *unexpected reward* (the reward was given, after the action was performed, without mentioning it before) did not influence intrinsic motivation when compared to a control group (Lepper et al. 1973). Those results indicate that it makes a difference if a person is performing an activity because of a promised reward, or if a person finds reward in the activity itself, irrespective of being additionally rewarded (e.g. financially) or not.

In subsequent studies, Deci and Ryan investigated different types of rewards and their effects on intrinsic motivation. Deci compared rewards for engaging with a puzzle (*engagement-contingent rewards*) with rewards for completing it (*completion-contingent rewards*) and found that completion-contingent rewards showed a more controlling perception from participants than rewards they received for engaging with a puzzle (Deci, Koestner, and Ryan 1999). Ryan, Mims, and Koestner (1983) interestingly discovered both, increasing and decreasing effects of intrinsic motivation, when performance-contingent rewards (e.g. to be better than 80% of the participants) were used. This controversy could be explained by the nature of the rewards. Whereas informational intentions of rewards had the effect of increasing intrinsic motivation, controlling intentions had an opposite effect (Ryan et al. 1983). When investigating *verbal rewards* (as positive feedback) Deci and Ryan experienced interesting differences between children and college students. Positive feedback was able to increase intrinsic motivation of college students but showed no effect with children. The result of this is the assumption that

children experience verbal reward as more controlling. Special forms of rewards are *natural rewards*, which occur for instance in horticulture. If we imagine people planting flowers or vegetables, they can find reward in the flowers' beauty or in the opportunity to eat fresh, seasonal vegetables. The task of planting or watering the flowers/vegetables is usually not experienced as a duty and supports a feeling of competence if the plants grow well. This form of reward seems to be less likely to decrease intrinsic motivation. The final type of reward, mentioned by Deci and Ryan, is *tangible rewards* (e.g. prizes, money, trophies or awards), which undermine intrinsic motivation. In summary it can be said that an increase of intrinsic motivation can be achieved by *verbal rewards*; no effects have been witnessed with unexpected tangible rewards or rewards not related to a task (task-noncontingent rewards); and a decrease of intrinsic motivation was shown by tangible rewards, engagement-contingent, completion-contingent and performance-contingent rewards. However, Deci and Ryan suggest that it is better to reward behaviour instead of outcomes, otherwise problems can arise. Since people seem to achieve an outcome with the least obligatory effort when they are rewarded, it is a risky method which can lead to poor quality of the desired outcome (e.g. participants of an experiment chose easy puzzles to get rewarded for solving them) (Ryan and Deci 2017).

Besides rewards, Deci and Ryan also examined effects of punishment on intrinsic motivation, which lead, as expected, to undermining effects. They were able to verify this assumption in an experiment where participants were confronted with an unpleasant buzzer, which sounded should they be unable to solve a certain number of puzzles in a limited time (Ibid.).

In an earlier paragraph I have mentioned that self-determination theory distinguishes itself from other theories (e.g. from Csikszentmihalyi's theory of flow) in terms of autonomy, which plays an essential role in it. The authors assume that higher autonomy (more choice) can increase intrinsic motivation and consequently the performance of an action. A study of Murayama and colleagues (2015) was able to verify this assumption. They performed an experiment with the task of halting a stopwatch after five seconds with an accuracy of 50ms. The experimental group was able to choose the stopwatch

for this task (though they were technically all the same), the control group was not provided with this option of choice. Although, all participants had (technically) the same stopwatch, the experimental group performed better (Ibid.).

Similar to the two previous, basic psychological needs, SDT suggests that relatedness too has an influence on intrinsic motivation. Bao and Lam (2008) investigated the experienced closeness of children to adults (e.g. their mothers/teachers) in relation to intrinsic motivation. Adults took decisions for them and, as a result, intrinsic motivation varied depending on how close a child perceived the decision-taking person. If a person was significantly important for the child, it didn't affect its intrinsic motivation, whereas if a person was not experienced as so close it decreased intrinsic motivation (Ibid.).

Concluding, it can be said that within CET, intrinsic motivation is desirable for optimal performance and high-quality engagement. The importance of intrinsic motivation in the field of learning can be reviewed in several studies (e.g. Grolnick and Ryan 1987, Ryan, Connell and Deci 1985, etc.).

3.3.3.2. Organismic Integration Theory (OIT)

Organismic Integration Theory (OIT) focuses on the four extrinsic types of motivation (integration, identification, introjection and external regulation). It investigates the autonomy experienced within extrinsic motivation and the influences on it by social environments. OIT assumes, for instance, better performance and greater persistence through more autonomous forms of extrinsic motivation.

Within our society different values, attitudes, beliefs and regulations interact with our self to become a part of us. This process, called internalization, is essential for SDT to distinguish the aforementioned extrinsic types of motivation (Ryan et al. 1985). Those types also include controlling methods such as monitoring and enforcement, which are necessary to achieve successful socialization. Deci and Ryan highlight the importance of internalization by considering it as an essential process to support our basic psychological needs (autonomy, competence and relatedness) (Ryan and Deci 2017).

Different regulatory styles demonstrate the degree to which internalization has been successful. If it shows only little success the kind of extrinsic motivation that will apply is *external regulation*. Deci and Ryan consider it to have short-term effects, but to be inappropriate for high quality performance and for successful transfer processes, due to its highly controlled characteristics (Deci and Ryan 1985 and Ryan and Deci 2017).

In contrast to that stands *integration*, which successfully transported values, attitudes, beliefs and regulations from external sources to our self. This process might include adaptions (e.g. of values) but is finally in line with the person's values, attitudes and beliefs (Ryan and Deci 2017).

The phenomenon of internalization also reveals subtle distinctions between intrinsic motivation and integration. Hence, integration is originally nurtured by extrinsic motives; it differs from intrinsic motivation, which does not depend on external sources. Another slight difference includes the time-orientation of both motivation-types. Thus while integration is more future-oriented (enhance competences, achieve outcomes), intrinsic motivation

focuses on the present (interest, spontaneous activities) (Ibid.). However, research also showed that intrinsic motivation does not necessarily lead to better performance compared to extrinsic forms of motivation (for example integration). We find an example in Losier and Koestner's study (1999), which tested people with intrinsic and extrinsic motives to engage in politics and found out that participants with extrinsic motivation were actually more likely to vote. A plausible explanation is that people with intrinsic motivation experienced the actual activity (voting) as less enjoyable and therefore found their reward in their interest in politics (Ibid.).

Though we have mentioned and distinguished between different types of motivation, they are not necessarily static within a certain activity. For example, a person could start exercising because of an external regulation (strongly recommended by a doctor), but the person's motivation is able to change into identification, if such activity encourages their wellbeing (Ryan and Deci 2017).

This awareness has great relevance for social environments. If such an environment provides space for autonomy, competence and relatedness, behaviour which was previously more controlled can change toward higher self-determination, volition and more successful internalization. At the same time, controlling environments might provoke the opposite effect (Ibid.).

A concluding proposition of OIT is that motivation implying a higher extent of self-determination leads to greater persistence (especially long-term), and that behaviour accompanied by more autonomy consequently establishes better performance and higher quality.

3.3.3.3. Causality Orientations Theory (COT)

Causality Orientations Theory (COT) emphasizes different orientations of individuals in terms of motivation. It suggests three general causality orientations that give indices about a person's orientation toward their environment and about their own motivations. These orientations are *autonomy orientation*, *controlled orientation* and *impersonal orientation*. The former concerns itself with the person's environment as a way of information

and brings inner perspectives in line with external events (intrinsic motivation, integration and identification). *Controlled orientation*, in contrast, focuses on how individuals orient themselves towards controlling aspects of their environments (a tendency to introjection and external regulation). Finally, *impersonal orientation* aligns itself towards events that include for instance experiences of incompetence, which usually lead to amotivation.

COT proposes that each individual is able to experience autonomy, controlled and impersonal oriented situations throughout their life.

On the one hand, COT explains why the same person may be intrinsically motivated in one situation (e.g. sports) and differently motivated in another context (e.g. mathematics). On the other hand, it highlights that identical environments (e.g. an autonomy-supportive environment) can be perceived by some individuals as autonomy-supportive and by others as controlling. COT argues that environments previously experienced can affect a person's perception of them. That is why a person coming from a controlling environment will probably experience an autonomy-supportive situation, despite its being so, in a controlling way (Ryan and Deci 2017).

3.3.3.4. Basic Psychological Needs Theory (BPNT)

Basic Psychological Needs Theory (BPNT) investigates the satisfaction and thwarting of autonomy, competence and relatedness in respect of well-being and ill-being. The term well-being is consciously used by the authors to differentiate it from the expression happiness. There is a whole article by Ryan and Huta, in which they argue that well-being and happiness are not identical. Therefore, a person might be happy after consuming drugs, but certainly not be well. In contrast, someone might be grieving and therefore sad, but be well in a physical context. In sum, Ryan and Huta warn against comparing something subjective like happiness with well-being (Ryan and Huta 2009).

Deci and Ryan state that a general satisfaction of autonomy, competence and relatedness will naturally lead to well-being. In this context, they describe the three basic psychological needs as interdependent. Since satisfying the three basic psychological needs creates well-being, they

therefore provide energy for us as humans. This effect demonstrates similarities with Maslow's physiological needs (food, water, warmth, rest) which likewise support us with energy (Ryan and Deci 2017).

3.3.3.5. Goal Contents Theory (GCT)

Goal Contents Theory (GCT) is concerned with life goals and aspirations of human beings. The central question in this matter is how intrinsic or extrinsic life goals influence the well-being of individuals. Several studies have engaged with GCT to collect knowledge about life goals in relation to well-being (e.g. Kasser 2002 or Sheldon and Kasser 2001). In contrast to general studies about life goals, Vansteenkiste and colleagues investigated impacts of life goals on learning outcomes. They were able to verify that students with intrinsic life goals showed greater learning outcomes than students with extrinsic life goals within this study (Vansteenkiste et al. 2004). Results such as these suggest that educational institutions and the social environment may be particularly important for the development of life goals and further for our behaviour (Ryan and Deci 2017).

3.3.3.6. Relationships Motivation Theory (RMT)

Relationships Motivation Theory (RMT) emphasizes on relatedness and its impact on the well-being of individuals. RMT investigated relatedness between romantic partners, but also within social groups such as families, friends and the field of work. Deci and Ryan distinguish these relationships between ones that involve friends and family (close relationships) and others (e.g. working colleagues). Downie, Mageau and Koestner (2008) undertook a study on those two relationship-groups and noted differences among them. Participants had a stronger feeling of relatedness combined with autonomy within close relationships compared to others (Ibid.). Similar to other mini-theories of SDT, RMT highlights the relevance of all three basic psychological needs. In this regard, Deci and Ryan mention the satisfaction of autonomy, competence and relatedness as a criterion for well-being in close relationships and for maintaining them over a long period (Ryan and Deci 2017).

3.3.3.7. SDT in the field of education

After describing self-determination theory in general applications and its mini-theories, I should like to conclude with aspects that affect the field of education, since the present study was performed within this environment.

As Deci and Ryan explained in their mini-theories, satisfaction of the basic psychological needs supports performance, maintenance and persistence, which is also relevant for educational processes. The question within this research is whether those needs have an impact on transfer processes such as classroom teaching – which is assumed, if we consider theoretical aspects or similar results in the field of education (e.g. Grolnick and Ryan 1987, Lepper et al. 1973 or Vansteenkiste et al. 2004).

One essential requirement for satisfying autonomy, competence and relatedness is an appropriate environment, in which teaching and learning take place. Since the motivation of teachers varies as well, SDT explains that the motivation of a person (e.g. a student) can vary. The same applies for environments (e.g. learning environments) which can be organized either in an autonomy-supportive or in a controlling way. These settings may already reflect the teacher's attitude towards education (if it is experienced as autonomy supportive [as formation from within], or controlling [as formation from the outside]). From a meta-perspective, influences from politics, supervisors and headmasters may have an impact on teachers as well. This suggests that there is not just the teacher and the student but a whole environment affecting the teacher – and furthermore the classroom – from the outside. This is why Deci and Ryan argue that it is also important that supervisors and headmasters provide autonomy-supportive environments for their teachers to enable them to do the same for their students. This effect of protecting one's staff members from such controlling influences is termed an "umbrella effect" (Ryan and Deci 2017, p.380). Such autonomy-support through external environments enables individuals to generate autonomous forms of motivation, which will not only support high quality learning but also establish psychological well-being.

In terms of learning, CET supplies several suggestions of how to provide optimal conditions. One matter that CET engaged in are various forms

of rewards and how they influence our motivation, which is obviously relevant for teaching and learning settings as well. However, besides CET, Deci and Ryan mention an additional positive aspect of rewards within work organizations. They argue that rewards may also affect individuals positively when they are accompanied by autonomy-support. This happens for instance if rewards are used to acknowledge the competence of staff members (Ibid.). Similar rewards could be used in learning and teaching, ensuring autonomy at the same time.

Concluding, we can say that SDT provides many interesting areas of application within education and generates various possibilities for further research. We shall come back to SDT connections of the present research in Chapter 4, when I will demonstrate the methodology of this study. In particular the first part about the research questions and hypotheses links very well to SDT.

3.3.3.8. Summary of self-determination theory

The Chapter about self-determination theory described motivational processes based on their degree of self-determination. Consequently, behaviour is either more externally- or internally-oriented. Ryan and Deci (2017) classified our motivation in external regulation, introjection, identification, integration and intrinsic motivation, listed according to the degree of self-determination. The main argument of their theory is that behaviour usually leads to higher performance and sustainability when underlying a high degree of self-determination. Consequently, they suggest supporting situations where self-determined actions can unfold. These considerations may also be significant in the field of work, though the main field of implementation is education. Ryan and Deci define three components as responsible for self-determination, and further for well-being, which are autonomy, competence and relatedness. This implies that individuals should experience autonomy in making decisions, feel competent in performing an action and combine it with social relatedness. The sum of those components results in the degree of self-determination, which is necessary for motivated behaviour. Ideally, this behaviour evolves from internal drive (intrinsic motivation), but obviously not all situations will be like this. Therefore, Ryan and Deci highlight the importance of the environment for motivational processes, which can either be supportive (autonomous) or controlled. The former allows the individual to bring external factors into line with the individual, whereas the latter result in a surrender of individual needs. Today, self-determination theory is one of the leading theories for explaining human behaviour by internal and external sources. Its closeness to the educational field makes it an optimal concept for this study.

3.3.4. Sociological work under a motivational perspective

In his work of *The Protestant Ethic and the Spirit of Capitalism*, Weber describes a historically significant event, the separation of Protestants from the Catholic Church. This theological split resulted in the differing beliefs of both groups. One of those controversies referred to a different understanding of how to receive absolution from god. In Catholic practices, the individual could pay for committed sins, and in doing so almost 'purchase' a place in the kingdom of god. For Protestants, by contrast, it was the response of each individual to live according to god's will. Absolution was therefore a privilege of god, who judged on the deeds of each individual. This resulted in a different life orientation of Protestants, who had to work hard throughout their lives to earn a place in god's kingdom.

Weber suggests that this attitude, already mentioned in relation to McClelland's learned needs theory (McClelland 1961), generated a spirit that gave rise to capitalism. In contrast to the common worker, Protestants probably worked even harder and reinvested their capital, since spending it on luxury and pleasure would have been perceived as a sin. As a result, they combined hard work and reinvestment throughout their lives. However, they also looked for some confirmation that they had been doing god's will, which they interpreted as their success in life (Weber 1930).

But what does this historical explanation of the rise of capitalism have to do with motivation? If we scrutinize Protestants at that time in terms of their drives, we can find similarities with Ryan and Deci's (2017) approach of external motivation. It seems that most situations of a Protestant life were determined by the will of an external source (god). Consequently, inner drives could only arise if an individual enjoyed work, even though it might be hard work. However, this external pressure was essential for a good Protestant to achieve the highest goal of an individual soul, to enter the realm of god. If we consider the situation such as this, I would argue that the underlying type of external motivation also involves a high degree of self-determination, as we can detect it in integration or identification, according to Ryan and Deci's classification.

If we move from the time of the Reformation to today, we can also see that *The Protestant Ethic and the Spirit of Capitalism* described an upcoming change in society, which led to industrialization and the rise of the bourgeoisie. Even though the capitalist of that time may resemble the Protestant, with each working hard and reinvesting capital, there might be a difference in the extent of their enjoying life as they did this. The capitalist, however, probably found his motives in directing his life according to capital expansion in intrinsic interests. If we move into today's society, we still can identify similar differences between capitalists and workers. There is a good number of individuals who work hard to invest their money in commodities (the workers), which they think they require (encouraged by advertising) and therefore orient their life towards doing so. As a result, the worker does not reinvest their capital, but spends it on brands, expensive cars, mobile phones or holidays. The historical difference between the worker of today and the past is, however, that such outlays were unaffordable during the time of industrialization, when workers struggled merely to survive.

In contrast to *The Protestant Ethic and the Spirit of Capitalism*, which focuses on external motives shaping the beliefs and attitudes of individuals, self-determination theory explains human behaviour also by intrinsic motives, in addition to external motivation. Nevertheless, Weber has already given a good example of how external factors can shape the life of an individual, and how actions may result out of them.

In his work about *Mind, Self and Society*, Mead (1967) argues, in a similar way to cognitive/process motivation theories, that humans can be distinguished from lower animals by complex thinking processes. He describes those in his aforementioned sociological book. Mead suggests that the social environment has an influence on the individual, which is for instance essential for creating a "mind". However, he distinguishes between habitual reactions and behaviour which involves thinking processes, where the ability to reflect plays a crucial role. The first important term of Mead's concept, the "mind", can be seen as a process, which involves a conversation with oneself. For developing a "self" we have to learn things such as language

from our social surroundings, because the “self” requires us to posit ourselves as a subject and an object.

The concept of the mind and the self becomes extended by what Mead calls the “I” and the “me”. He describes both terms like this: “The “I” is the response of the organism to the attitudes of the others; the “me” is the organized set of attitudes of others which one himself assumes” (Ibid., p.175). Consequently, the “I” occurs in an interaction as an immediate response. The “me” on the other hand involves processes of socialization, which regulate the individual in a way that society expects them to (Ibid.).

In a motivational illustration of sociological theories, Turner (1987) mentions Mead’s work as a continuation of behaviourism from Skinner, adapted to social behaviourism. He argues that Mead’s assumption that we are able to consider ourselves as objects gives us the opportunity to take someone else’s perspective. In social processes, we can learn from the behaviour of others and consequently expand our individual behavioural repertoire by doing so.

If we compare Mead’s concept with Ryan and Deci’s (2017) degrees of self-determination, we detect similarities between the “me” and a low self-determination found in externally controlled types of motivation – for example, when a woman visits her grandmother, because her parents and morals tell her to do so. On the other hand the “I” refers to behaviour grounding in individual interest, which can either arise, for instance, if a boy enjoys what he does naturally (such as riding his bike), or because he experienced from his social surrounding that this action has a value for him (such as playing the guitar, because he aspires to being a rock star one day). However, it seems that both constructs (“I” and “me”) are important for a society to exist and to develop; similarly, they are both necessary for the individual to exist and to develop. Transferring this assumption onto motivation theory, we are able to conclude this Chapter by stating that intrinsic as well as extrinsic behaviour both have their legitimacy through allowing the individual and society to develop. However, if individual behaviour is primarily controlled by external sources (as in totalitarian regimes) it is highly questionable, since individual rights have to become completely subordinate to society, which does not help

improve society any further.

In addition to Weber and Mead, there are certainly other connections between sociological theories and motivation mentioned, for instance in an article of Turner (1987). One of these includes Durkheim's work about *Elementary Forms of the Religious Life* (Durkheim 1947). Within this book, he analyses religion and its importance for society. As indicated by the title, it highlights religion. However, if we remove the religious frame from Durkheim's assumptions, we can reduce the essence of this theory to the importance of social solidary. Consequently, the individual's need for acceptance within a group results in consequences for our behaviour, as we can see in rituals, for instance (Turner 1987). Transferred onto the social work environment of teachers this could mean that an individual teacher experiences influences from peers (team colleagues or other teachers), which consequently affect the individual's behaviour. The same is valid for influences from superiors (such as the headmaster), which includes the likelihood of an even stronger emphasis of power than the previously stated influence on peers.

Another relation to motivation stated by Turner involves the theoretical considerations of Collins (1975). He argues that individuals strive to exchange their resources for their personal benefit. According to him we are driven by two generic resources, which are emotional energy (which we receive in the shape of positive feeling) and cultural capital (Turner 1987). Speaking of capital, in the sense of Bourdieu (2014), Turner also highlights the importance of symbolic capital for motivational processes. He argues that symbolic capital has the power to represent an individual's value in group activities and as a result shows effects on the individual's behaviour once more (Turner 1987). In processes of professional development, we can observe the existence of symbolic capital – for instance, in the form of certificates. These are, depending on the social work environment of individuals, important as well (either in demonstrating the obligatory 15 professional development units per school year, or in positioning someone's individual qualification within a social group).

The list of sociological connections to motivation can certainly be continued, as Turner suggests (Ibid.). However, the works cited above demonstrate a comprehensive explanation of issues stated within this research. Some sociological works might be excluded, even though they describe the phenomenon of motivation (as with Durkheim's explanation of suicide [Durkheim 1951], because it has no relevance for this study), other sociological theories might be added, depending on other's perspectives (which is why I do not see this part as a completed description of motivation in professional development by sociological theories).

3.4. Framework for the implementation of professional development to classroom teaching

A theoretical framework, adapted for the field of professional development, illustrates the chronology of transfer processes from their early beginnings until their implementation in the classroom. I created Figure 3.14 based on Helmke's offer-uses-model (Helmke 2004), constructs of Tillmann's questionnaire (STUD-FEL) (Tillmann et al. 2011) and Helmke's framework of individual, social and institutional conditions of changes in personal teaching (Helmke 2004).

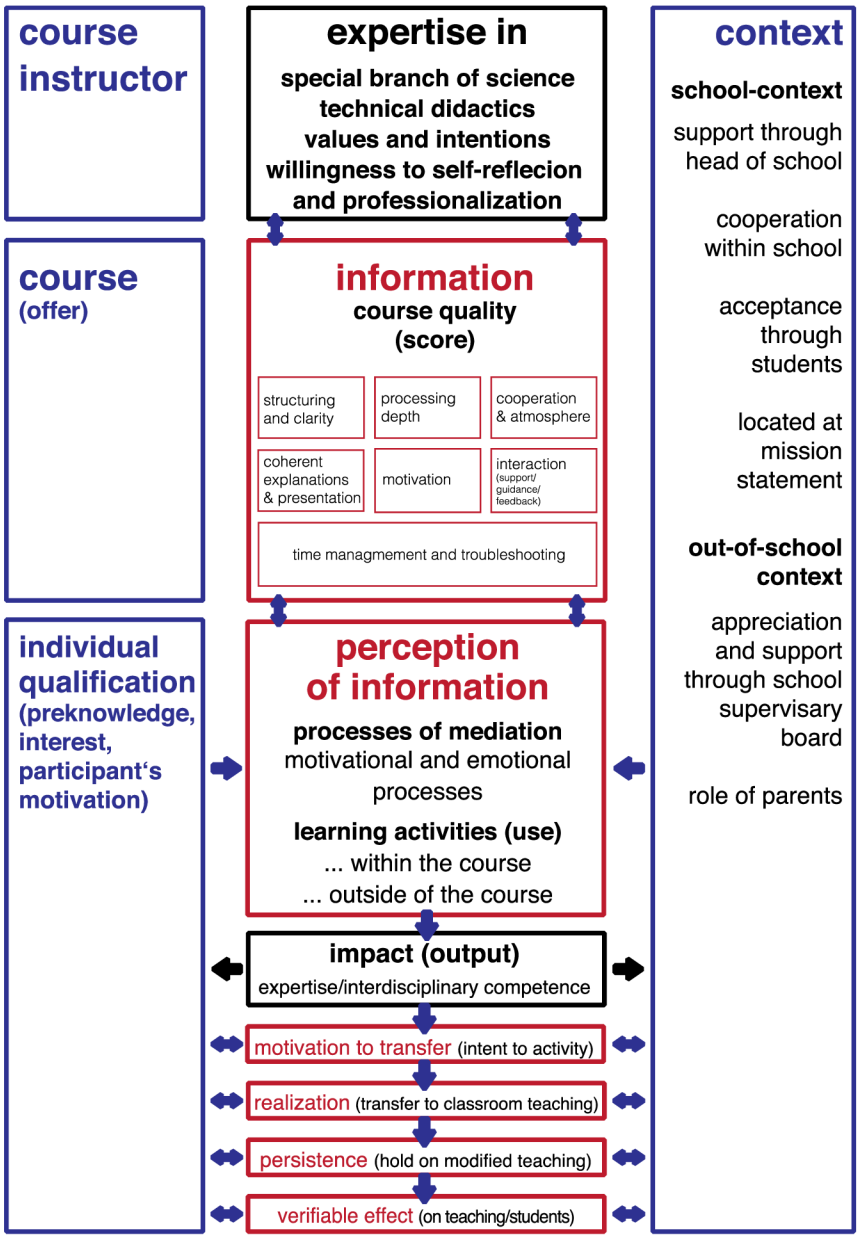

Figure 3.14: Framework for the implementation of professional development to classroom teaching.

The model represented above, begins with an input of information and ends with a verifiable effect. Better learning results of students could indicate such an effect. The framework shows that influences in this process may arise even before a seminar has begun. The expertise of an instructor can influence the upcoming seminar indirectly with characteristics such as expert knowledge, technical methodology, etc. (Ibid.).

The next step in this process is the information presented within a seminar itself. Tillmann's standardized questionnaire (the "Frankfurter Studierendenfragebogen[12]") (Tillmann et al. 2011) measures the quality of a course and clusters it into several constructs.

The participants perceive information from an instructor in different ways. Motivational and emotional processes and learning activities can influence this perception, for instance. Individual qualifications (pre-knowledge, interest, learning motivation) and contextual qualifications (perhaps support through the head of school, appreciation and support through school supervisory board, role of the parents, etc.) have additional effects on that perception (Helmke 2004 and Röder 2010). Gessler underlines the importance of pre-knowledge regarding transfer processes (Gessler 2011), Helmke and Weinert see its relevance for further efforts in learning processes (Helmke and Weinert 1997).

After teachers have perceived that information within a seminar, it can activate processes. Ideally, participants will enlarge motivation to transfer content to their classroom teaching. Such motivation can be initiated when a participant develops new disciplinary and interdisciplinary qualifications (Gessler 2012). Consequently, ideas from a seminar become realized in the classroom, when the motivation is high enough. If those actions are repeated over a period of time they may lead to verifiable effects on teaching, and in best case will support students learning processes (Helmke 2004 and Prenzel, Krapp and Schieferle 1986).

Arrows pointing both ways (illustrated in Figure 3.14) show the interdependence of various parameters within this model.

[12] For a detailed description of this evaluation tool, see Chapter 4.3.1.

4. Methodology

4.1. Research questions and hypotheses

Three research questions accompany this study, which are founded in Ryan and Deci's self-determination theory (SDT). I have structured the questions according to SDT's three basic psychological needs (autonomy, competence and relatedness) which influence our actions and behaviours, depending on whether they are satisfied or frustrated (Ryan and Deci 2017). The research questions of this study investigate whether those needs are also relevant in professional development. Therefore, each basic psychological need is considered separately in terms of transfer processes, which is demonstrated in the following questions. The conclusion of this work (Chapter 6) will then merge the findings to illustrate this phenomenon as a whole.

Research Question 1: How does *autonomy* influence transfer processes in professional development?

The first research question investigates transfer processes under the aspect of autonomy, which corresponds to the feeling of volition, according to Deci and Ryan. They further describe it as behaviours that "are self-endorsed, or congruent with one's authentic interests and values" (Ryan and Deci 2017, p.10). This autonomy is reflected in their motivational classification from highly autonomous forms (e.g. intrinsic motivation) to highly controlled forms (e.g. external regulation). One of the advantages they see in the former is better performance (for example, of learning activities). They articulate this aspect, for instance, in the Cognitive Evaluation Theory and the Organismic Integration Theory, two of their mini-theories within SDT (Ibid.). Deci and Ryan further argue that extrinsic motives can undermine intrinsic motivation and lead to poor performance/transfer, which has been confirmed, for instance, in experimental environments (Murayama et al. 2015 and Ryan and Deci 2017). They explain this phenomenon giving examples through their observations of how rewarded/punished outcomes motivate people to reach their goal with the least necessary effort (Ryan and Deci 2017). Ryan and Deci proceed with their considerations by suggesting that self-determination has effects on long-term behaviour (persistence), which could be empirically

verified in findings from Pelletier et al. (2001). They demonstrated that intrinsic/autonomous motivation is a positive predictor for long-term persistence within a sports study. As a result of this, I suggest that similar results will arise within my study.

In summary, we can argue from Ryan and Deci's assumptions that the extent of self-determination relates to transfer processes, which the first hypothesis demonstrates:

H_1: A higher degree of self-determination increases the transfer processes of teachers.

A second hypothesis will then test the previous assumption within a limited group from the sample. To establish a similar setting as in a study of Grolnick and Ryan (1987), with two groups of students, one in a controlling, the other one in a non-controlling environment, the investigation group is limited to English Experts[13] within this hypothesis (Ryan and Deci 2017). The reason for choosing this group is the strong divergent condition that is either highly non-controlling (voluntary function) or controlling (forced).

H_2: A higher degree of self-determination increases transfer processes within the group of English Experts.

Research Question 2: How does *competence* influence transfer processes in professional development?

The second psychological need according to Ryan and Deci is competence. As a result of their theory, we have to feel competent to fulfil an action. Otherwise, amotivation may arise, which deters an individual from intended behaviour (Deci and Ryan 2000 and Ryan and Deci 2017). From the perspective of a course participant, this involves both knowledge and good

[13] English Experts are teachers who participate in a project of the Vienna Board of Education. The goal of this is to provide high quality English lessons. This can be achieved by the use of Expert teachers who are capable of fulfilling this requirement, for instance, by constant professionalization. When the project is complete, all schools in Vienna should have at least one English Expert who is able to teach also in other classes of the school, if colleagues are unable to provide English lessons of the desired standard. However, there are two ways of being assigned to the function of an English Expert, one being volitional and another one forced (Klein 2014).

course quality (aside from potentials to implement the learned knowledge in the field of work). The third hypothesis traces the former assumption which describes knowledge as an essential element for transfer processes:

> H_3: Participants with higher knowledge at the end of a course show higher transfer processes.

The second suggestion, described earlier, concludes that teaching (also in a course) has to be of high quality to be effective (e.g. Helmke 2014, elaborated in Chapter 3.2). However, it takes a scientific method to measure the theoretical construct of teaching quality. Tillmann et al. (2011) developed a standardized survey to measure the quality of courses at universities. With the help of this, each participant is assigned a score for the course attended, which illustrates the quality experienced within it. High quality courses are expected to have supported the participant's competence, which is a key element for motivation according to Deci and Ryan (Ryan and Deci 2017). Thus, we are further able to consider that competence-support leads to better performance, as stated in the following hypothesis:

> H_4: Participants experiencing a high quality course (demonstrated by a score indicating high-quality) will use ideas more frequently in their classroom teaching than others.

Lastly, the competence of an individual also reflects in emergent intentions for further actions. As a result, (perceived) competence has an influence on the performance (as Murayama et al. 2015 demonstrated in an experiment) and consequently on the well-being of an individual (Ryan and Deci 2017). Gessler investigated this correlation between a person's intention to transfer ideas/suggestions at the end of business training and successful implementation in the workplace with r=0.494 (Gessler 2011). Consistent with this, it is interesting to find out if relations in the field of professional development also appear, as stated in the fifth hypothesis:

> H_5: Participants with a higher intention to use ideas/suggestions in their classroom teaching are more likely actually to transfer them.

Research Question 3: How does *relatedness* influence transfer processes in professional development?

Finally, several learning models (e.g. Helmke 2004, McIlrath and Huitt 1995, Proctor 1984, etc.) and motivation theories (e.g. Adams 1965, Bandura 1979, etc.) agree on the importance of social contexts in motivation. Ryan and Deci illustrate this with their third basic psychological need, which is relatedness. This suggests that phenomena such as others caring about the person, the feeling of being meaningful for others, and integration into social organizations, are all linked to well-being and good performance (Ryan and Deci 2017). Within the need for relatedness, we can distinguish two different social environments that apply for the sample of this research: the school (including working-colleagues, the principal and the supervisory board) and the group of teachers attending a professional development course (including the course instructor). Since latter was already part of the course quality (see H_3), I aim to focus on the social school context within the following hypotheses. Moreover, this involves relations between teachers and superiors (headmaster, supervisory board), which can either be shaped in a controlling or self-determined way. Different sources in literature recommend that the support of principals is very important for the implementation process (e.g. Helmke 2004 or Röder, Drössler and Jerusalem 2010). However, actions such as sharing an idea gained from a seminar express the relatedness among colleagues. Therefore, we can conclude from SDT that a self-determined work environment will influence relatedness positively, which can lead to an increase of idea sharing between working-colleagues. Thus, the sixth hypothesis argues that:

> H_6: Participants in a professional development course are more likely to share ideas from a course when experiencing a self-determined work environment than under enforced conditions.

The seventh hypothesis concludes that social events which nurture the participant's feeling of relatedness are able to predict better performance (transfer-processes). Such events involve (for example) the feeling of being

meaningful or being part of a social organization, and are illustrated within this study by the willingness to share ideas with working-colleagues, which indicates a good social connection (Ryan and Deci 2017). However, it is not only SDT which highlights this importance of social interaction at work. We can find similar considerations in other theories: for instance from Vroom (1964) or Bandura (1979). As a result, I shall assume a relation between the social act of idea sharing and transfer processes as stated in the seventh hypothesis:

> H_7: Sharing ideas of a professional development course with working-colleagues increases the transfer itself.

4.2. Sample

This research took place at the public University College of Teacher Education, located in Vienna, Austria. The quantitative part of this study evaluated professional development courses in the winter semester 2016/17 and in the winter semester 2017/18. For a better comparability, I investigated courses for English teachers at the Primary level (teaching pupils from the age of six until ten). The content of the courses included practical information for teaching, didactic and methodological ideas, theoretical information about educational standards (Grundkompetenzen 4, Content Language Integrated Learning) and ideas for new technologies in the English classroom. The courses evaluated ranged from three to nine units (each 45 minutes long) and were usually given on a single date (in 88% of the sample). Some courses, however, took place on two dates (not necessarily on a following day). The majority of the courses consisted of three or four units (81.9%).

The public University College of Teacher Education in Vienna offered 18 professional development courses in the subject English during the winter semester 2016/17, involving 308 participants (17 courses with 283 teachers participated in this study). In the winter semester 2017/18, the programme for English courses consisted of 20 courses with a population of 343 participants, of which 19 courses[14] with 319 participating teachers were involved. This means the total population of both semesters consisted of 38 courses (42 groups) with 651 participants and the total sample of this quantitative study involved 36 courses (40 groups) with 602 teachers, who participated in it voluntarily (see Table 4.1). They had been informed via e-mail about this research in the pre-field and were asked to participate in three surveys in total. Since the sample size represents 92.5% of the participants within the population, we can assume that the sample describes the population very well.

[14] 23 groups, as some courses were offered twice to provide the same information for two different groups.

Table 4.1: Comparison of population and sample size

	Population	Sample	Percent
Courses in winter semester 2016/17	18	17	94.4
Groups in winter semester 2016/17	18	17	94.4
Participants in winter semester 2016/17	308	283	91.9
Courses in winter semester 2017/18	20	19	95.0
Groups in winter semester 2017/18	24	23	95.8
Participants in winter semester 2017/18	343	319	93.0
Total courses	38	36	94.7
Total groups	42	40	95.2
Total participants	651	602	92.5

Most of the involved teachers were working at the primary level (92.7%, N=575), because the content focused on topics taught in primary schools. However, new secondary school teachers (teaching students from 5th until 8th grade) and teachers of academic secondary schools (5th until 13th grade) also participated in the offered courses (see Table 4.2 for more details).

Table 4.2: Types of schools in which participants are teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary school	533	88.4	92.7	92.7
	New secondary schools	27	4.5	4.7	97.4
	School for special needs	3	0.5	0.5	97.9
	Academic secondary schools	7	1.2	1.2	99.1
	Other	5	0.8	0.9	100.0
	Total	575	95.4	100.0	
Missing	-77	28	4.6		
Total		603	100.0		

The age of the participants ranged from 22-81 years, which gives an average age of 41 (rounded)[15]. I did not collect any personal data (like gender) on purpose, to protect the privacy of participants (because there are, for instance, very few male teachers in primary school, which could possibly make it easy to identify an individual from the sample).

In addition to the quantitative study, I conducted a qualitative study after evaluating the results of the quantitative part. Since it is hard to find guidelines stating the correct number of interviewed individuals in samples in literature, I oriented myself using the suggestions of Creswell (2007) and Polkinghorne (1989). According to Polkinghorne, phenomenological studies vary a great deal in terms of interview numbers with some research having as few as three interviews and others ranging up to 325. However, Creswell (2007) follows Polkinghorne's (1989) discoveries and recommends an interview sample of between five and 25 individuals sharing experiences about the same phenomenon. Since I have triangulated my qualitative and quantitative results, I found five individuals to be sufficient.

The qualitative research consisted of two Austrian teachers and three native speaker teachers, all teaching the subject of English in school. A second criterion for being an interviewed individual was having attended a professional development course on the subject English; however, the interviews were not limited to experiences on English lessons. I found it reasonable to view the participant's experiences using a more holistic view than with a focus on English only, since I assume that the teacher's degree of self-determination might differ in a different population (e.g. courses about educational standards, etc.) based on my results from the quantitative study (compare results about the first hypothesis in Chapter 5.3).

Another aspect which I wanted to add is the perspective of a special needs teacher, because professional development courses for primary school teachers are generally accessible for them as well. The interviewed individual from a special-needs school also teaches older children, but often still at the primary level, hence to frequently lower cognitive skills.

[15] One participant reported an age of 1, and was excluded in calculating the mean.

The individuals interviewed in the sample had a teaching experience of between seven and 28 years (17.8 years on average), meaning that they have a lot of experiences to talk about.

Last, but not least, I tried to represent the voices from female and male teachers equally, which means two of the respondents were male and three female. For a summary of the statistical data, see Table 4.3.

Table 4.3: Statistical data about interview partners

	Position/Function	Gender	Teaching experience
Resp 1	Classroom teacher	female	24 years
Resp 2	Native speaker teacher	male	7 years
Resp 3	Native speaker teacher	female	28 years
Resp 4	Native speaker teacher	male	14 years
Resp 5	Special needs teacher	female	16 years
Mean			17.8 years

4.3. Research design

In Chapter 3.4, I introduced a developed framework for explaining the process of professional development and its possible implementation in classroom teaching. In the following part, I shall use this framework to demonstrate the research field and explain how the highlighted areas from Figure 4.1 are represented in a mixed method design within this study.

The quantitative part consists of three surveys. It collected information about the individual qualification of teachers and their school context in an initial questionnaire, data about the course quality in a second questionnaire and information about the output and additionally about contextual parameters in a third questionnaire. A detailed description about the quantitative research design is presented in Chapter 4.3.1.

An additional qualitative part focuses on the contextual part of this framework and elaborates on the social work environment. A methodological description of the qualitative research design is listed in Chapter 4.3.2.

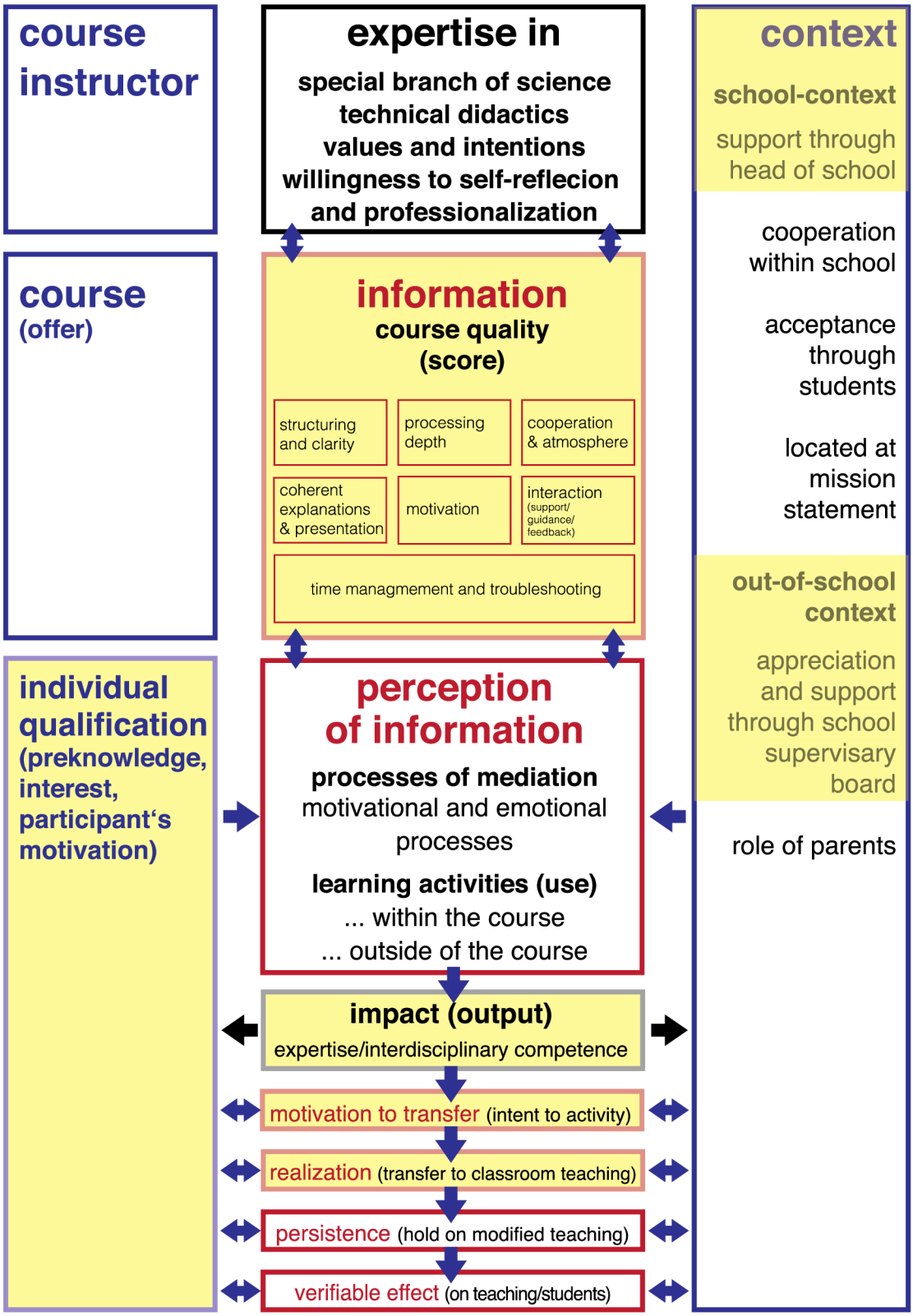

Figure 4.1: Framework for the implementation of professional development to classroom teaching (with highlighted areas).

As the framework of Figure 4.1 suggests, there are some parts where quantitative methods were more adequate to collect useful information about transfer processes and other parts where it made sense to add qualitative data to enlarge the picture of this research field. As a result, I used a mixed methods design to support the understanding of the phenomenon of transfer processes in professional development.

For this purpose, I applied the explanatory sequential design from Creswell (2011). As demonstrated in Figure 4.2, I initiated my research process with quantitative data through surveys followed by a subsequent analysis of the collected material. Based on these quantitative results, I identified some areas where the evidence to answer the research questions was insufficient. Consequently, I developed an interview guideline to overcome that gap and embedded qualitative information in answering the affected research questions.

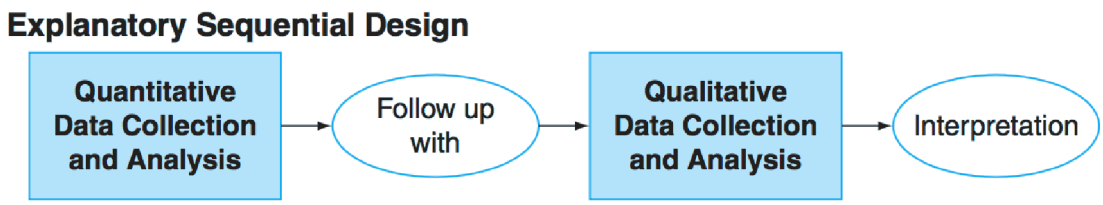

Figure 4.2: Explanatory Sequential Design (Creswell 2011, p.541)

For a next step, I assigned these methodological considerations to my own research. This resulted in the following research design, which I shall elaborate on in the following chapters:

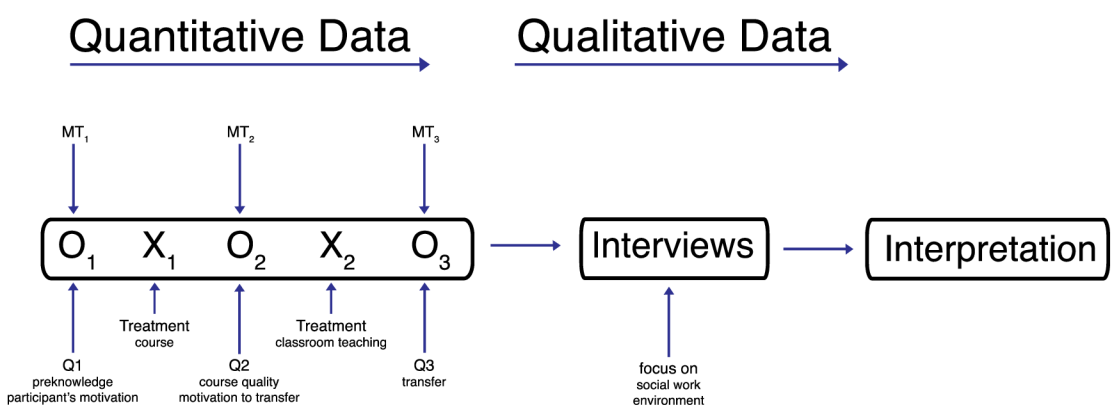

Figure 4.3: Mixed Method Research Design

4.3.1. Part I: Quantitative Study

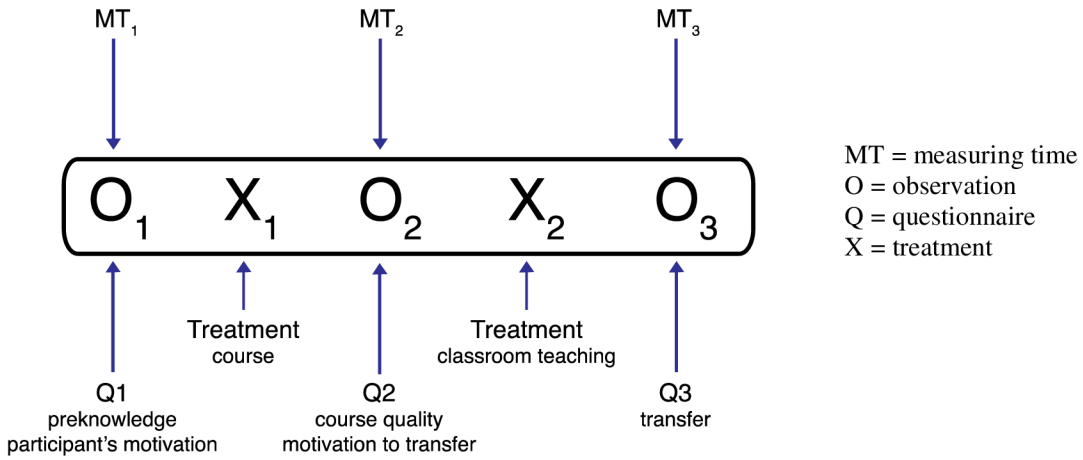

Figure 4.4: Experiment design

The quantitative part of this research is based on three surveys conducted at three different measuring times (described as MT_1, MT_2 and MT_3 in Figure 4.4). I tested them beforehand with teachers, adapted them and retested them in a seminar group. After some changes, such as making some question formulations more precise to support the understanding of participants and to avoid mistakes in filling the survey out, the quantitative study was ready to start. The sample size varied during this process, which I relate to the different types of questionnaires. The first and the second questionnaire (Q_1 and Q_2) were conducted using pencil and paper, whereas the third survey (Q_3) had to be shared as a link to an online-survey. Without doing this, it would not have been possible to contact the participants after the completed seminar. The return rates varied from MT_1/Q_1 (N=575), MT_2/Q_2 (N=563) to MT_3/Q_3 (N=190). The surveys were handed out in the German language; however, in courses where I introduced the study in person I offered support in translating parts of it into English. If I did not manage to be there myself, this part was taken by the course instructors themselves.

The questionnaires consisted of closed-ended and open-ended questions, to add a triangulation to the methodology of this study. The combination of quantitative and qualitative data supports a holistic understanding of transfer backgrounds (e.g. to identify supporting/blocking parameters for a transfer of seminar content to classroom teaching) (Flick 2004). Individual results of each seminar were summarized and reported to all

course instructors involved in this research. They received feedback on transfer-processes of their seminar-participants and had the chance to improve their future seminars. That gives us the opportunity to increase the quality of seminars offered at the University College of Teacher Education in Vienna.

4.3.1.1. Measuring time 1 (MT_1)

The research process started with the first survey (Q1), which collected personal information (e.g. which school level participants teach, their age, etc.). It was necessary to generate a unique code in order to compare the different surveys afterwards. For that reason, participants were asked about their favourite animal and the first letter of their mother's/father's first name. Individual qualifications such as subjective pre-knowledge and motivational reasons about the participation of this seminar were also part of this survey (Lipowsky 2010). Helmke refers in this context to the importance of motivational reasons for the quality of a lesson (Helmke 2004). Table 4.4 shows both questions in terms of pre-knowledge and motivation, measured on a six-point-answer-scale.

Table 4.4: Initial questions (from Q_1), translated from German to English

	Please rate yourself!	--	-	←	→	+	++
2.1	How do you rate your pre-knowledge about topics of this course?	☐	☐	☐	☐	☐	☐

2.2	I intend to use suggestions/ideas from this course in my classroom teaching.	disagree agree	☐☐☐☐☐☐

Another task of the first survey was to classify the participants' degree of self-determination.

First, I assigned the degree of self-determination for two items separately (item 2.3 and 2.6), which I classified as the degree of self-

determination 1 and 2. The statement about reasons for courses attendance (see item 2.3 in Table 4.5: Calculation for degree of self-determination 1) was classified using the following criteria: 1 for statements with negative connotation (symbol -), 2 for negative and positive selections and 3 for positive statements (symbol +).

Table 4.5: Calculation for degree of self-determination 1

2.3 I am attending this course ... (multiple answers possible)

□ because I'm interested in the topic. (+)

□ because I want to professionalize especially in the subject English. (+)

□ because I have to attend this seminar. (-)

□ to fulfil my requested amount of annual professional development courses. (-)

□ Other reasons: _____

Calculation of degree of self-determination 1

Degree of self-determination	Rating
1	-
2	- and +
3	+

I followed a similar procedure for the second degree of self-determination (see item 2.6 in Table 4.6). Following this, statements on participation influences were classified under the following criteria: 1 for negative annotations (symbol -), 2 for negative and neutral (- and recommendation), 3 for neutral (recommendation), 4 for recommendation and positive and 5 for positive statements (symbol +). Table 4.7 demonstrates these statements and an illustration of the former description about the classifications.

Table 4.6: Calculation for degree of self-determination 2

2.6 Who influenced your decision about participating in this course? (multiple answers possible)

□ Appointment through the supervisory board (FI/PSI). (-)

□ Own decision. (+)

□ Appointment through my headmaster. (-)

□ Recommendation through colleagues/headmaster/supervisory board.

□ Other reasons: _____

Calculation of degree of self-determination 2

Degree of self-determination	Rating
1	-
2	- and neutral (recommendation)
3	neutral (recommendation)
4	neutral (recommendation) and +
5	+

Secondly, I wanted to evaluate the general level of self-determination. For this purpose, I reduced Ryan and Deci's four types of extrinsic motivation to Schellenbach-Zell and Gräsel's model of extrinsic motivation, which consists of only two categories: controlled motivation (external regulation and introjection) and autonomous motivation (identification and integration) (Deci et al. 1991 and Schellenbach-Zell and Gräsel 2010). As a result, I had to distinguish between three types of motivation: intrinsic, autonomous and controlled motivation. To determine which motivation applied, I defined different answer possibilities for each category (using the items 2.3 and 2.6). Each answer was either positively associated with self-determined behaviour (illustrated by the symbol + in Table 4.7), neutral (no symbol) or negatively associated (symbol -). Therefore, intrinsic motivation applied if the participant had ticked both items with positively self-determined behaviour (+). For autonomous motivation, at least one item had to include the symbol +, otherwise the motivation was rated as controlled. If a participant had checked multiple answers, which they were allowed to do, I used the choice with the highest degree of self-determination for creating the person's type of motivation. I assessed the open-ended choices about other reasons retrospectively, which included clear statements about the degree of self-determination (for example, "I enjoy seminars from this course instructor", "I'd like to do more science lessons", and so on). The indication of positive, neutral and negative self-determination (as illustrated in Table 4.7) was not revealed to the participants in order to avoid any influence on their responses.

Table 4.7: Calculation of participant's motivation type (from Q_1), translated from German to English

2.3 I am attending this course ... (multiple answers possible)

□ because I'm interested in the topic. (+)

□ because I want to professionalize especially in the subject English. (+)

□ because I have to attend this seminar. (-)

□ to fulfil my requested amount of annual professional development courses. (-)

□ Other reasons: _____

2.6 Who influenced your decision about participating in this course? (multiple answers possible)

□ Appointment through the supervisory board (FI/PSI). (-)

□ Own decision. (+)

□ Appointment through my headmaster.(-)

□ Recommendation through colleagues/headmaster/supervisory board.

□ Other reasons: _____

Calculation of motivation

	2.3	2.6
intrinsic motivation	*at least+	*at least+
autonomous motivation	*at least+ /	/ *at least+
Controlled motivation	**at least-	**at least-

*at least+ = at least one of the chosen options has to be ticked in a field with (+)

**at least- = at least one of the chosen options has to be ticked in a field with (-)

Another area polled in the first survey was about different roles of English teachers within the school system. The Vienna Board of Education is currently implementing a different teaching system with so-called “English Experts”. It divides the sample into two groups: experts (N=264) and non-experts (N=301). This system is constantly evolving, with an aim to have specialized teachers for English primary classes by 2020. Usually, primary school teachers in Austria teach every subject. With the “English Expert” system, specialized teachers will need to improve their skills continuously (for example, through professional development) so as to provide high quality English lessons. Such experts will also be able to teach English in several classes, if necessary (Klein 2014). The Vienna Board of Education sees expertise and continuous professionalization of such teachers as mandatory requirements (Stadtschulrat für Wien 2014). This is why it is assumed that “English Experts” would have a strong drive to professionalize themselves in the teaching of English.

However, any participant (English Expert or not) is able to sign up for a professional development course either voluntarily or because it has been demanded by the head of the school/supervisory board. This influence of one’s social environment is assumed to affect a person’s extent of self-determination and further relates to transfer processes (see research question 1/ hypothesis 1).

The first treatment (X_1) started after the first survey had been completed and consisted of the performance of the seminar itself.

4.3.1.2. Measuring time 2 (MT_2)

A quality score (of the seminar) and the actual motivation to transfer were surveyed at the end of the professional development course with the help of the second survey (Q_2) (Helmke 2004 and Tillmann et al. 2011). The quality score mentioned before was measured by a standardized questionnaire called the "STUD-FEL", which was integrated into the second survey. This questionnaire represents the quality of courses and is designed for institutions with a large number of instructors. It has been tested by its authors within a large sample population (N=26.543), achieving a high reliability with Cronbach's α=0.94 (measuring the quality of the whole course) and Cronbach's α=0.91 (measuring on the participants' level of surveys). In what follows, I shall list the constructs implemented in this questionnaire and the items they consist of (see Table 4.8): structuring and clarity (items 4.02, 4.08 and 4.09), coherent explanations and presentation (items 4.05 and 4.07), time management and troubleshooting (items 4.04 and 4.05), cooperation and atmosphere (items 4.05, 4.06 and 4.12), interaction (support/guidance/feedback) (items 4.03, 4.06, 4.07 and 4.11), processing depth (item 4.11) and motivation (items 4.10 and 4.11). Tillmann uses some statements multiple times to create different constructs (Tillmann et al. 2011).

Table 4.8: Statements regarding the course (from Q_2), translated from German to English

4.01	Attending the course has resulted in a noticeable increase in my knowledge level.	do not agree at all ☐☐☐☐☐☐ agree entirely
4.02	The topics presented are well structured.	☐☐☐☐☐☐
4.03	The seminar offers sufficient course material (handouts, texts, literature lists, etc.)	☐☐☐☐☐☐
4.04	The seminar was held at a suitable pace.	☐☐☐☐☐☐
4.05	Difficult content is being explained in a comprehensible way.	☐☐☐☐☐☐
4.06	The professor / lecturer provides helpful feedback to their comments and questions.	☐☐☐☐☐☐
4.07	Media (e.g. texts, blackboard, slides) are used in an appropriate way.	☐☐☐☐☐☐
4.08	The course provides a good overview of the treated content.	☐☐☐☐☐☐
4.09	A “central theme” of this course is clearly identifiable.	☐☐☐☐☐☐
4.10	The course discusses actual trends within its potential.	☐☐☐☐☐☐
4.11	The course supports self-reliant and active engagement with learning content.	☐☐☐☐☐☐
4.12	The course provides a constructive, positive atmosphere.	☐☐☐☐☐☐

For measuring a continuous development of motivation, I reused a statement from survey one (see item 2.2 in Table 4.4).

After that, participants had six weeks time to implement ideas from their seminar into their classroom teaching (second treatment/X_2).

4.3.1.3. Measuring time 3 (MT_3)

The closing survey (Q_3) was performed as an online-survey. This questionnaire included a rating of the participants regarding their transfer experiences (see Table 4.9).

Table 4.9: Transfer experience/closed-ended (from Q_3), translated from German to English

7.2	I used a lot of suggestions/ideas from this course in my classroom teaching.	disagree ☐☐☐☐☐☐ agree
7.3	I intend to use suggestions/ideas from this course long-term in my teaching.	disagree ☐☐☐☐☐☐ agree
7.4	My teaching has changed thanks to this course.	disagree ☐☐☐☐☐☐ agree

7.5 At least one suggestion/idea of this course has been used ...

☐ once in my teaching.

☐ repeatedly in my teaching.

☐ Use of the suggestions/ideas of this course was not possible in my classroom teaching.

Additionally, the last survey involved questions indicating relatedness between working colleagues. The participants were asked whether they had shared ideas from the seminar with their colleagues or not (see Table 4.10).

Table 4.10: Sharing ideas with colleagues (from Q3), translated from German to English

7.6 I shared suggestions/ideas of this course with colleagues.

☐ Yes.

☐ No.

The collected data was finally evaluated with the software SPSS. Results will be presented in Chapter 5. For a complete version of all three questionnaires (translated from German to English), see the appendix (Chapters 10.2 through to 10.4).

4.3.2. Part II: Qualitative Study

The aim of the qualitative part of this research is to enlarge the observable frame of transfer processes. Surveys from the quantitative part have their strength in collecting information from a large number of participants, but at the same time, they are subject to defined answers, which limits participants in their responses and consequently in reporting their experiences. One method of approaching this problem is to implement qualitative data in the surveys (by using open-ended questions). Another way to counteract the issue is to add interviews to the study. By doing this, it is possible to create a larger picture of the participants' personal experiences, their receptiveness of the social surroundings and the effect on transfer processes, which quantitative methods cannot reproduce in such detail. As a result of this, I decided to use a mixed methods design in order to merge quantitative and qualitative data for a better understanding of transfer processes as a whole.

Logically, qualitative data of this research has to fulfil two purposes:

The first purpose was to filter relevant information, which is the case in open-ended questions within the surveys. This procedure helps to explore the dataset according to the respective hypotheses and research questions. I excluded, for instance, cases where participants had been unable to transfer ideas from a seminar in their classroom when testing a hypothesis related to transfer processes (e.g. when they did not teach the subject of English at the time of the third survey, or if a necessary computer or multimedia device was not available to implement it in a useful way). As a result, I was able to refine the data according to the relevant questions.

The second, and considerably more complex, purpose was to elaborate on information produced by quantitative procedures (surveys) with the help of qualitative methods (interviews). Since Creswell (2011) suggests

that complex questions require a direct contact with people within the studied sample population, I decided to conduct face-to-face interviews with teachers and ask them about their experiences regarding transfer processes. By doing this, I am tracing a phenomenological approach (Creswell 2011 and Moustakas 1994), because I was not interested in the perspective of a single individual (narrative approach), but in the experience of several people regarding the same phenomenon,

In the literature, we can find criticism about qualitative research (something which also exists for quantitative research) about validity and reliability. Creswell (2007) counters this criticism by explaining eight strategies needed to achieve validation:

1. Learn about the field, get to know the participants, their environment, culture, etc., to receive authentic information and a better understanding. This procedure helps to separate significant from insignificant information for the research.

2. Use triangulation as the chief way to achieve valid research by including “multiple data sources, methods, and theoretical schemes” (Lather 1991, p.66).

3. Implement peer review so as to strengthen methods, obtain more precision in formulations, etc. within the research process.

4. Revise hypotheses until all studied cases fit.

5. Make personal opinions and attitudes transparent for the reader.

6. Involve the participants by asking them about their views on the research (e.g. the findings or in interpretations).

7. Describe the research process in detail to follow each step of the study.

8. Perform external audits on the research.

Creswell (2011) recommends following at least two of these criteria for valid research procedure. In my particular case, I used triangulation whilst also describing each step of my qualitative research in detail in order to address any criticism about qualitative methods. In addition to these two criteria, I sent the complete transcript from the sample population to each of the interviewed individuals and offered them the opportunity to comment on it. They also had the opportunity to interpret results from the quantitative research during their interviews.

Addressing the issue of reliability, I followed Silverman's (2010) suggestions about recording the interviews, producing transcripts and documenting once again the exact procedures of each research step (and thus making them transparent for other researchers should they wish to inspect them).

4.3.2.1. Interviews

The purpose of the interviews which were performed was to support and extend understanding of my quantitative results from the surveys (Mayring 2001) and to gain direct access to the personal experience of participants (Silverman 2010). Therefore, it made sense methodologically to perform the surveys first and to develop the interview guidelines in a subsequent step, based on the results of the quantitative data. As a result, I identified a need for qualitative data, especially within the social work environment and in personal experiences in the transfer processes of teachers. For this reason, I generated interview guidelines and tested them in a pilot interview. After receiving feedback from the interviewee, and following some time of reflection, I rewrote some questions to be more precise and added others, where necessary information had been missing (for example, I changed questions which compared voluntary and compulsory course participation, added statistical charts to gather the participants' interpretation of them, etc.). The final interview guidelines were once again discussed with the interviewee from the pilot interview and with other teachers.

After being organised, the interviews were undertaken in undisturbed surroundings, as suggested by Creswell (2011). For this reason I used either an empty classroom at the interviewee's school or at the University College of Teacher Education. The language of instruction varied according to the preference of the interviewee by way of trying to establish a comfortable environment and through that experiences as close to the truth as possible. As a result, native speaker teachers preferred to undertake their interviews in English, while Austrian teachers chose the German language for their interview. This procedure is recommended by several sources, in particular when the interviews are focused more on information rather than on emotional behaviour of the interviewee, which is the case in explorative interview settings such as in this study (e.g. Bogner, Littig and Menz 2014, Enzenhofer and Resch 2011 and Kruse, Bethmann and Niermann 2012).

4.3.2.2. Transcript and coding

Whenever I had completed an interview, I wrote down some notes about my impressions. The next step was to transcribe the recorded interviews using the software F5 (Version 7). Methodologically, I followed the guideline proposed by Kuckartz (2008):

1. The procedure for doing the transcript is done word-for-word. Where interviewees used slang words, I transcribed these to their more formal equivalents.

2. The speech and punctuation within the transcript are slightly smoothened to support the reader's understanding.

3. Personal data is made anonymous to protect the individual's privacy.

4. Speech pauses, which last obviously a significant time are illustrated by (…).

5. Terms stressed particularly by the interviewee are underlined in the text.

6. Expressions of agreement and acknowledgement of the interviewer (e.g.: Aha, mm, etc.) are left out in the transcript to support fluency of the text.

7. Comments from another person (who is not narrating or explaining) are given in brackets.

8. Vocalised, non-verbal sounds such as laughter or sighs are also set in brackets.

9. The interviewer is described as "Intvr" and the respondents as "Resp n" (starting the first interview with Resp 1, second with Resp 2, and so on) within the transcript.

10. Two line breaks demonstrate that the speaker has changed within the interview and increases readability of the transcript.

In a next step, each transcript is given line numbering, which is then used for any quotations in the dissertation. For a comparison of similar topics and experiences, the text becomes coded according to deductive build codes. Kuckartz (2007) differentiates between three types of codes und uses them either as markers (to highlight specific topics within a transcript), as facts (e.g. to determine if the respondent is female/male, etc.) or with the purpose of

assigning parts of the transcript to complex constructs (e.g. if the interviewed person prefers certain models over others).

In accordance with these options, I used two fact-codes to demonstrate statistical data such as years of teaching experience and markers to focus on defined topics throughout the interviews. Table 4.11 demonstrates the six sub categories with 17 categories in total. As Kuckartz (2008) suggests, these categories have been tried to be short, well distinguishable and should include category titles, which are more or less self-explanatory.

Table 4.11: Overview on categories

1. Years of teaching experience	Fact-code
2. Number of schools, respondent worked at	Fact-code
3. Attitude towards professional development	Marker
3.1 Meaning of professionalization	
3.2 Opportunities of professionalization	
3.3 Number and criteria of professional development courses	
3.4 Expectations on professional development courses	
3.5 Attendance reasons	
4. Experience with social work environment	Marker
4.1 Atmosphere	
4.1.1 Atmosphere between working colleagues	
4.1.2 Atmosphere resulting from the headmaster	
4.2 Experiences with forced participation	
4.3 Difference between compulsory and voluntary participation	
4.4 Experiences with recommendations from colleagues	
5. Opinion on statistical results of the study	Marker
5.1 Opinion on motivational impacts	
5.2 Opinion on forced/voluntary “English Experts”	
5.3 Opinion on idea sharing	
6. Personal experience on successful transfer processes	Marker

The codes have been assigned to the transcripts with ATLAS.ti (Version 8), a computer program for data analysis, recommended by multiple sources (e.g. Creswell 2011, Friese 2012 or Mayring 2002). Finally, I created reports for each category, subsumed all suitable statements of the participants and paraphrased them for further procedure. The descriptive analysis of it is demonstrated in Chapter 5.2.

5. Results and findings

5.1. Descriptive analysis of the quantitative study

This part of my dissertation provides an overview of the collected data. A selection of relevant frequencies and means aim to introduce an initial, descriptive analysis of items within the three surveys. Reading this subchapter will support the understanding of the statistical analysis to follow, such as with the correlations from Chapters 5.3 and 5.4. The complete descriptive analysis of all items can be found in the Appendix of this work (Chapter 10.5).

5.1.1. Descriptive analysis of relevant items from the first survey

The first survey measured pre-knowledge, participation reasons and other motivational factors in connection with the social work-environment of the participants.

The first thing I wanted to know was the pre-knowledge of teachers on topics of the registered course. The results showed that the participants rated their pre-knowledge as good, with a mean of 4.01 on a six-point answer scale (N=569), as shown in Figure 5.1. Some participants checked the figure between two answer options. In such cases I rated both scales (e.g. 5/+ and 6/++) to receive a representative mean.

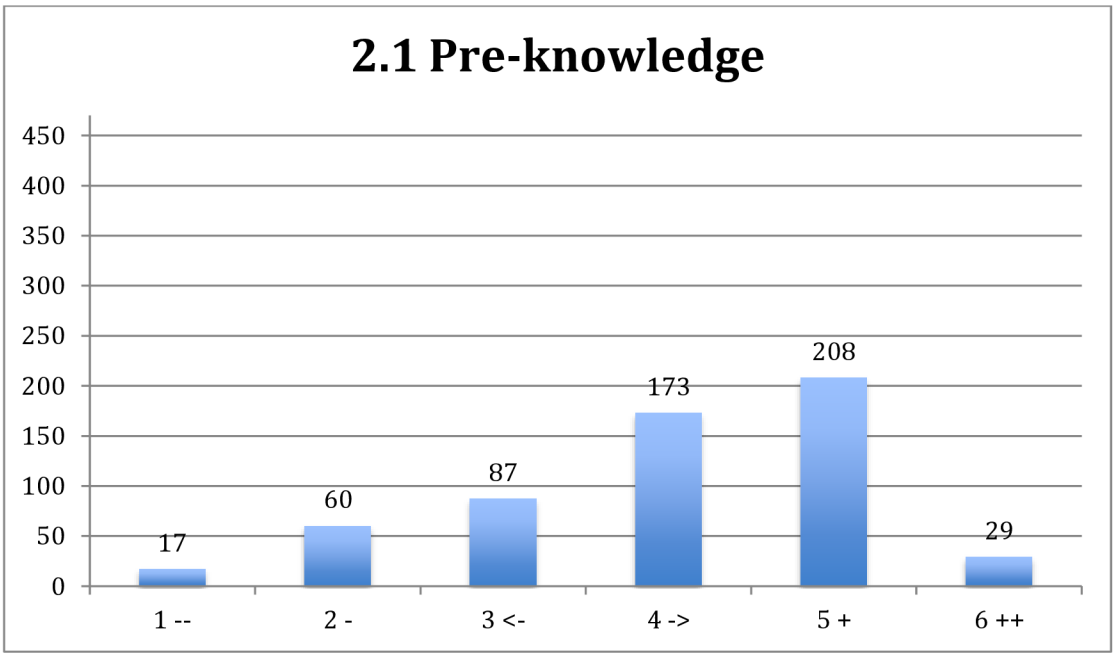

Figure 5.1: Item 2.1. How do you rate your pre-knowledge about topics of this course? (N=569)

The second question asked the participants whether they intended to use ideas or suggestions from the registered course in their classroom (again, without being influenced by course content at that point). Once more, participants had a very high intention of using ideas from the seminars in their classroom, with a mean of 5.63 on a six-point answer scale (N=573), as illustrated in Figure 5.2.

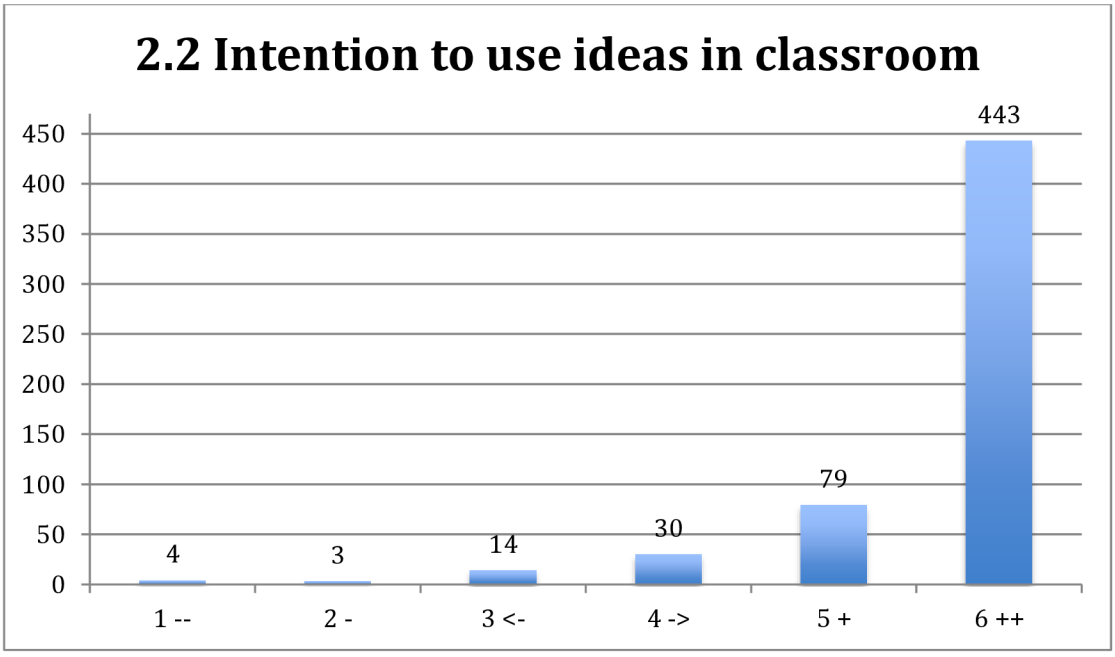

Figure 5.2: Item 2.2. I intend to use suggestions/ideas from this course in my classroom teaching (N=573)

The next item focused on the attendance reasons of teachers for the selected course. The participants either chose from four pre-defined answers or selected a fifth one, which was an open field for any other reasons. The defined options included attendance; because of interest in the topic; professionalization motives, especially in the subject English; having to participate (e.g. sent by principal or supervisory board); and fulfilling requested hours of participation (as state teachers have to). The fifth option was an open response, where participants listed reasons such as the competence of the course instructor, the quality of a similar course, recommendations from colleagues, the location of the course, inspiration for teaching English, etc. It was also possible to select multiple answers. If we interpret the responses shown in Figure 5.3, we can observe a significant trend towards participation reasons such as interest in the topic and intention to professionalization.

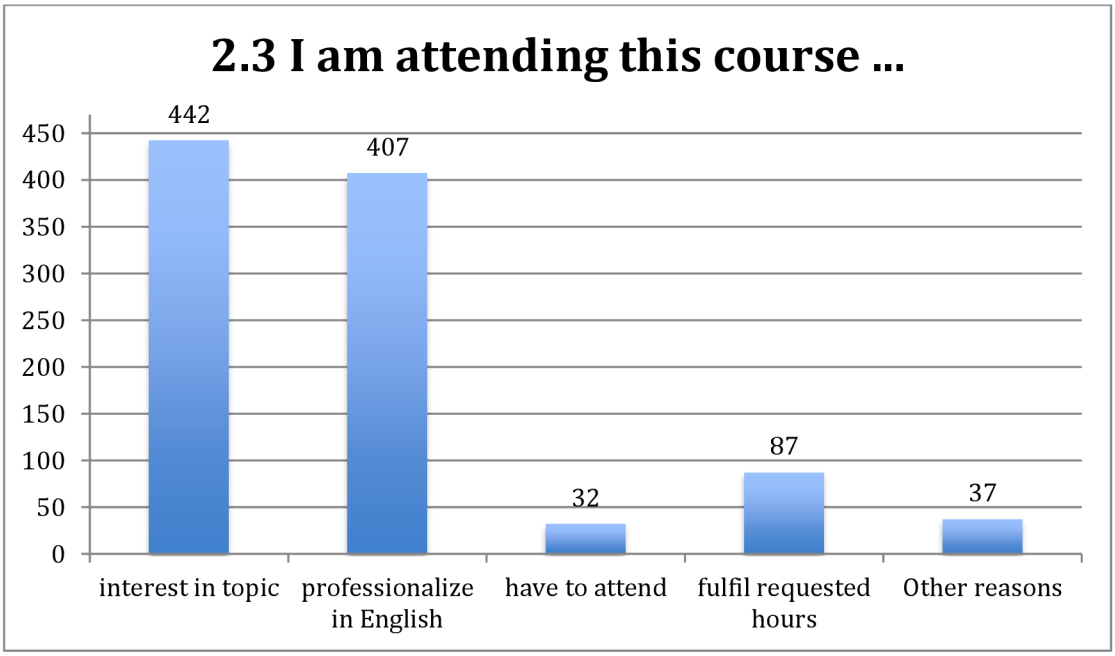

Figure 5.3: Item 2.3. Attendance reason

Since the Vienna Board of Education introduced the function of English Experts to enhance the quality of English teaching, I wished to find out more about this group. While it was interesting to see the distribution of English Experts among course participants, on the other hand it became relevant to distinguish between teachers who fulfilled this function voluntary and teachers who were forced to do so. This distinction was especially interesting under the aspects of self-determination theory.

Responses of this sample consisted of 264 English Experts (47%) and of 301 teachers (53%), who were not nominated for this function. Figure 5.4 demonstrates that within the group of English Experts almost twice as many became nominated for this function voluntarily, in contrast to teachers who had been compelled to become an English Expert.

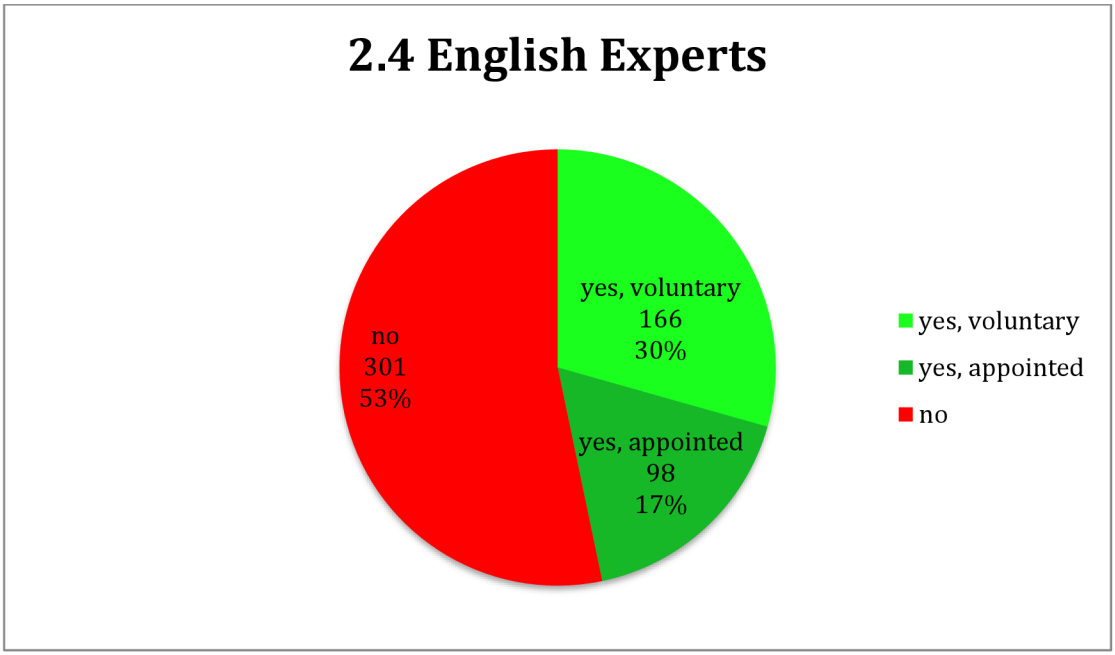

Figure 5.4: Item 2.4. English Experts

In addition to participation reasons, I intended to find out about the professionalization behaviour of participants. Therefore it was interesting to identify how many English courses (in addition to the one attended) they had signed up for in that semester. We can see that even though 149 teachers did not sign up for any other English courses, several others were interested in their professional development in the subject English (see Figure 5.5). On average, teachers of this sample signed up for around two (2.14) other English courses within the current semester.

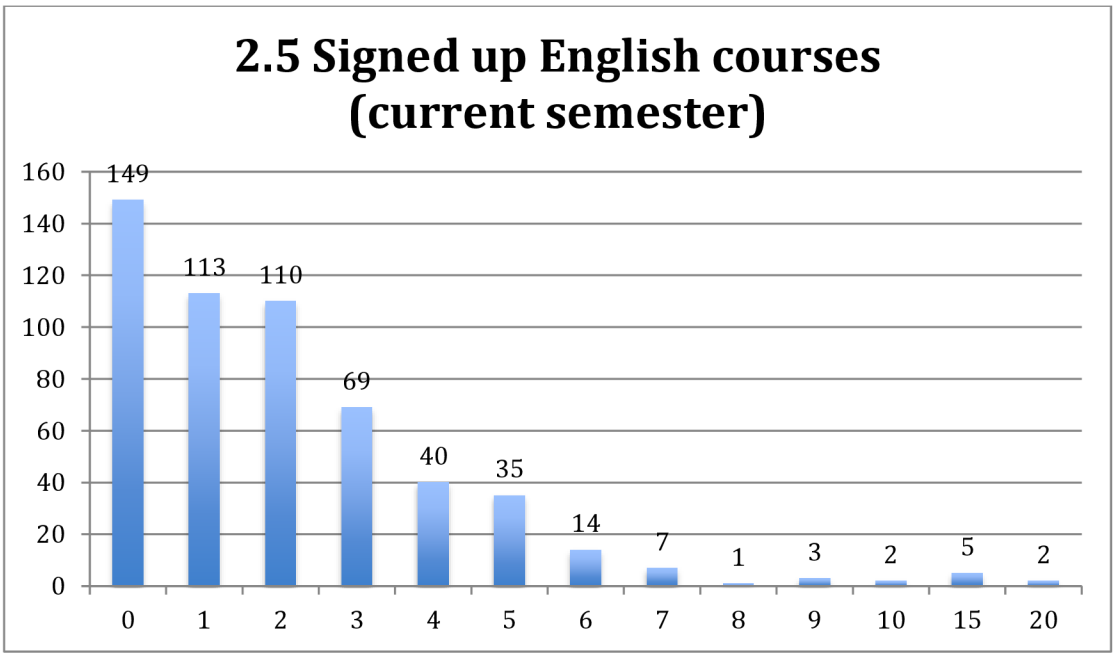

Figure 5.5: Item 2.5. Signed up English courses (in addition to this course) (N=550)

The last statement about participation reasons dealt with the influence on this decision. This was controlled either by the supervisory board, the headmaster, recommended by colleagues/headmaster/supervisory board, derived from an individual's (own) decision or resulted from other reasons such as being a native speaker teacher, teaching in a school which is part of an English focus program, and so on. It was, once again, possible to select multiple answers.

Despite the different options, we can see (as shown in Figure 5.6) that the majority of teachers perceived their attendance at a seminar as a result of their own decision (79%).

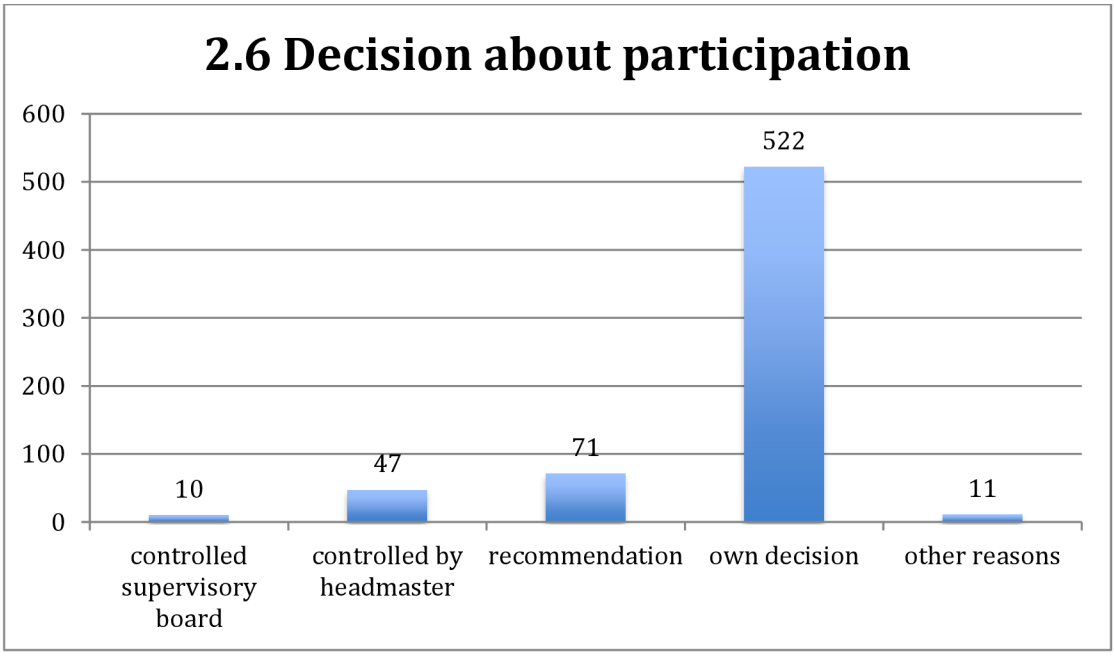

Figure 5.6: Item 2.6. Who influenced your decision about participating in this course?

5.1.2. Descriptive analysis of relevant items from the second survey

The second survey was handed out immediately after completion of the professional development course. As a result it focused on the quality of the performed courses, the participants' intention of implementing ideas from a course in their classroom teaching and the current knowledge status right after the course.

We can see that most participants experienced a very high course quality with a mean of 5.58 and a standard deviation of 0.679 (see Figure 5.7). 221 out of 563 participants rated all twelve items of Tillmann et al.'s teaching quality score with the highest rating (6), which represents 36.7% of the sample.

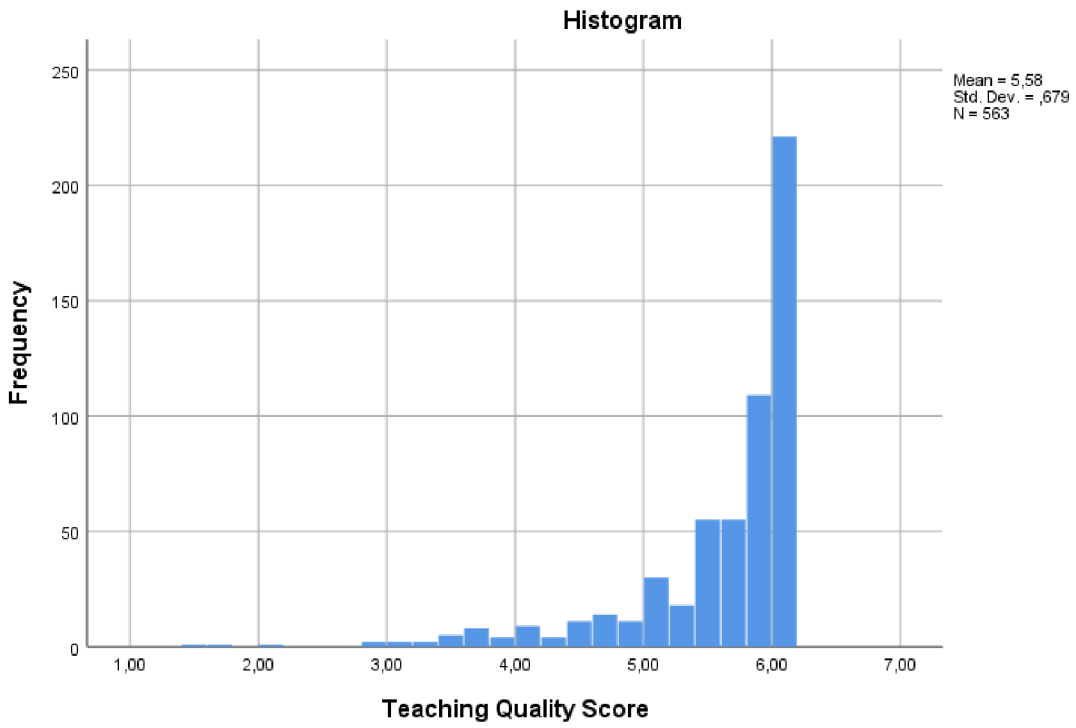

Figure 5.7: Histogram with Teaching Quality Score

In addition to the course quality, I was interested in the motivation of participants to transfer learnt content to their classroom teaching, at the moment when they were leaving the attended course with ideas. The results, shown in Figure 5.8, demonstrate that this motivation was very high at the end of a course. Accordingly, 82% of the teachers reported very high motivation (i.e.: they rated this item with 6 on a six-point answer scale) and 96.4% had the intention to transfer ideas/suggestions to their classroom teaching (ratings 4-6). The mean of 5.68 reflects these high rated results of item 4.13.

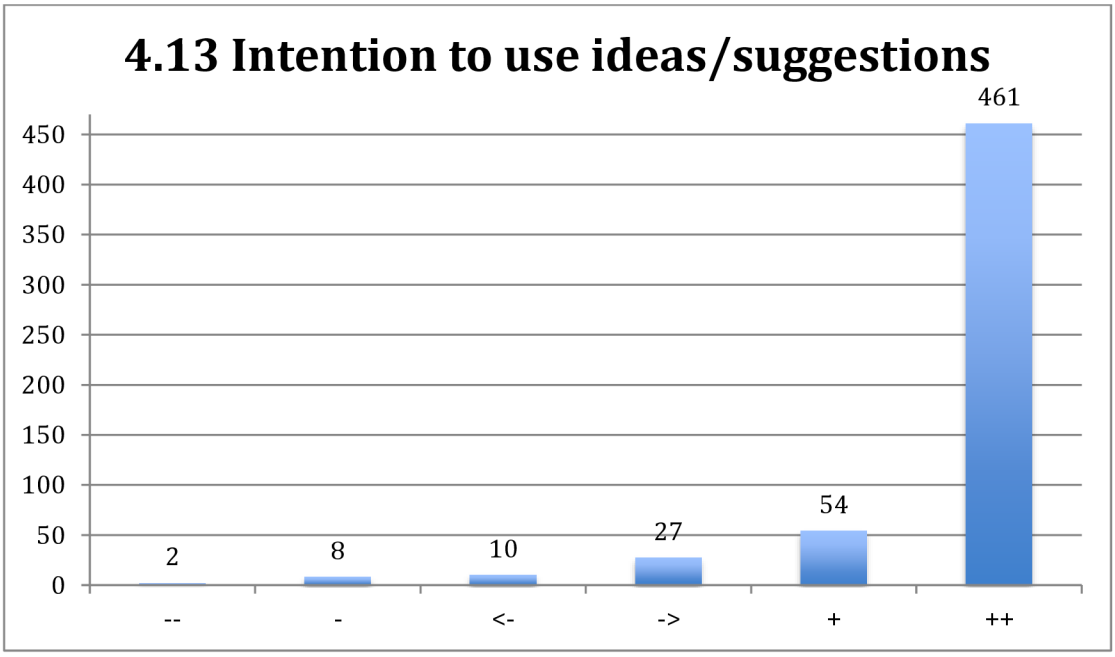

Figure 5.8: Item 4.13. I intend to use suggestions/ideas from this course in my classroom teaching (N=561)

The last statement of this classification refers to the current knowledge status at the end of a course. Self-evaluation illustrated that 28.3% of the participants experienced their knowledge level as very high, whereas 53.4% still rated it as high (see Figure 5.9). Clustered ratings show that 95.7% tended to experience their knowledge as high (ratings 4-6), whereas only 4.3% tended to report low knowledge at the end of the course (ratings 1-3). This means, on average, participants perceived their knowledge as high (mean = 4.98 on a six-point answer scale). If we compare the knowledge between the first and the second measuring point (MT_1 before the course, shown in Figure 5.1 and MT_2 after the course), we can identify an increase in the mean of 0.97 (almost one point on the scale).

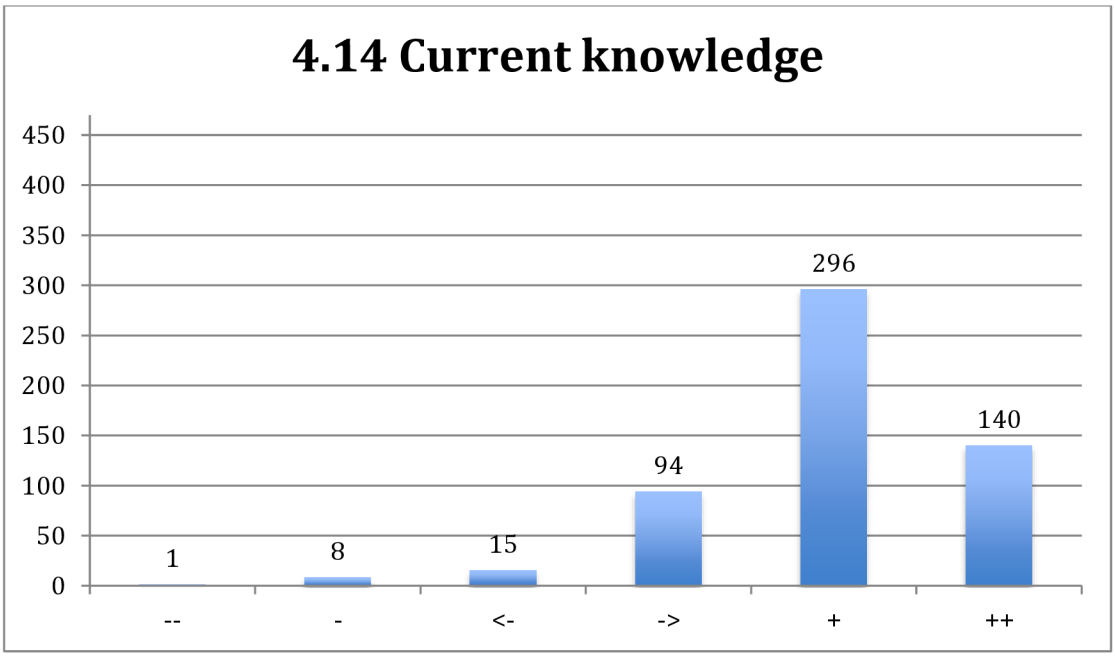

Figure 5.9: Item 4.14. How do you rate your current knowledge about topics of this course? (N=546)

5.1.3. Descriptive analysis of relevant items from the third survey

Finally, the last classification describes the core of this research, which is the realization of learnt content in the field of work (classroom teaching). Therefore, I opened the third survey with another self-evaluation of the current knowledge about course related topics. As a result, six weeks after the seminar 16% of the participants rated their knowledge as very high (++) and 57.2% still reported high (+) knowledge (see Figure 5.10). In summary, 96.3% tended to report high knowledge of topics discussed in a course, whereas only 3.7% tended to report poor knowledge of it. The mean value of this item was 4.83, which is a slight decrease (of only 0.15 points) from immediately after the seminar to six weeks later (compare Figure 5.1 and Figure 5.9 for the increase/decrease of the mean of knowledge throughout the study).

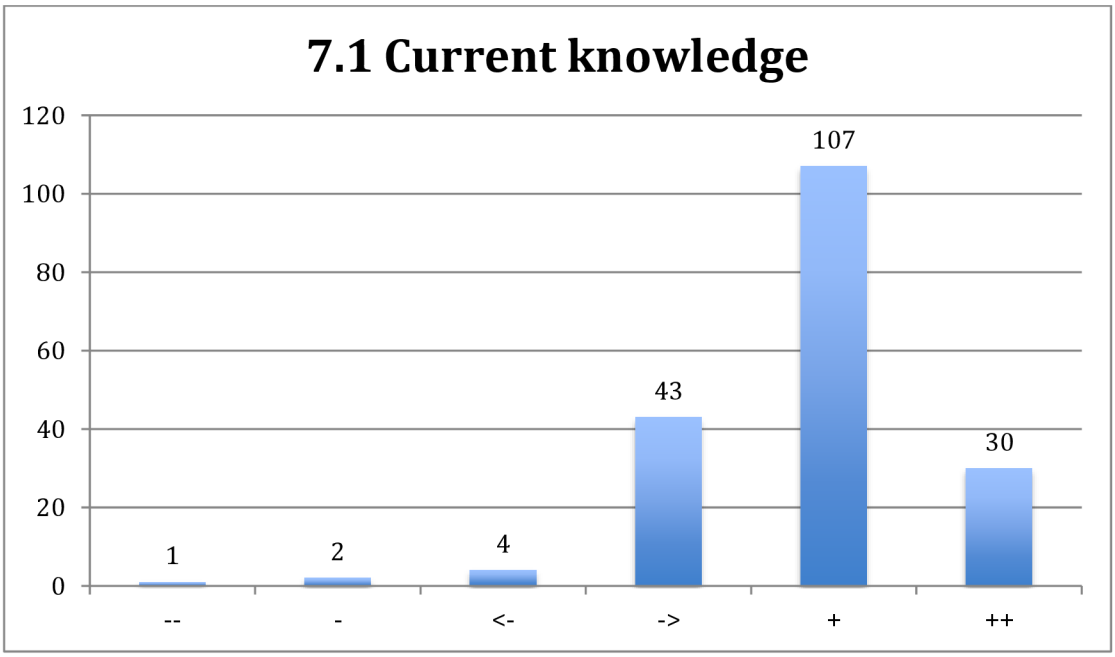

Figure 5.10: Item 7.1. Current knowledge (N=187)

The crucial question was how the study performed in terms of transferring ideas/suggestions to classroom teaching. Results showed that 31.5% of the participants shifted ideas very well from the course to their classroom teaching (i.e.: they rated the statement in Figure 5.11 with 6) and 39.8% still agreed highly with this statement (i.e.: they rated item 7.2 with 5 on a six-point answer scale). If we look at the results from a more general perspective, we can see that 89% tended to integrate ideas into their classroom teaching (ratings 4-6), whereas 11% tended not to do so (ratings 1-3). The mean of this sample (4.81 on a six-point answer scale) demonstrates the large support for this statement.

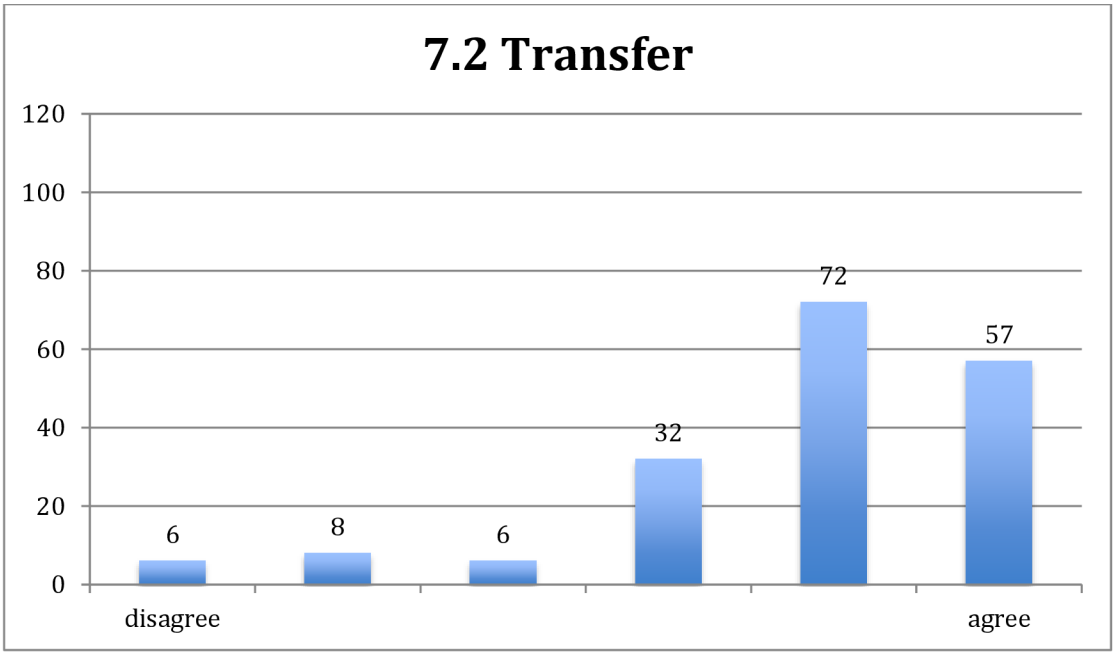

Figure 5.11: Item 7.2. I used a lot of suggestions/ideas from this course in my classroom teaching (N=181)

Even though long-term effects have not been measured per se, tendencies towards such persistence have been recorded. The participants were asked whether they intended to use suggestions or ideas from an attended course in the long-term within their teaching. As we can see in Figure 5.12, 51.1% agreed entirely with this statement (i.e.: they rated this item with 6) and 32.6% still agreed (rating of 5 on it) with it. From a general perspective we can say that 94.7% were tending to use suggestions/ideas in the long-term (ratings 4-6), whereas 5.3% were tending not to do so (ratings 1-3). The mean of this item was even higher than for the transfer (item 7.2) with 5.22 on a six-point answer scale.

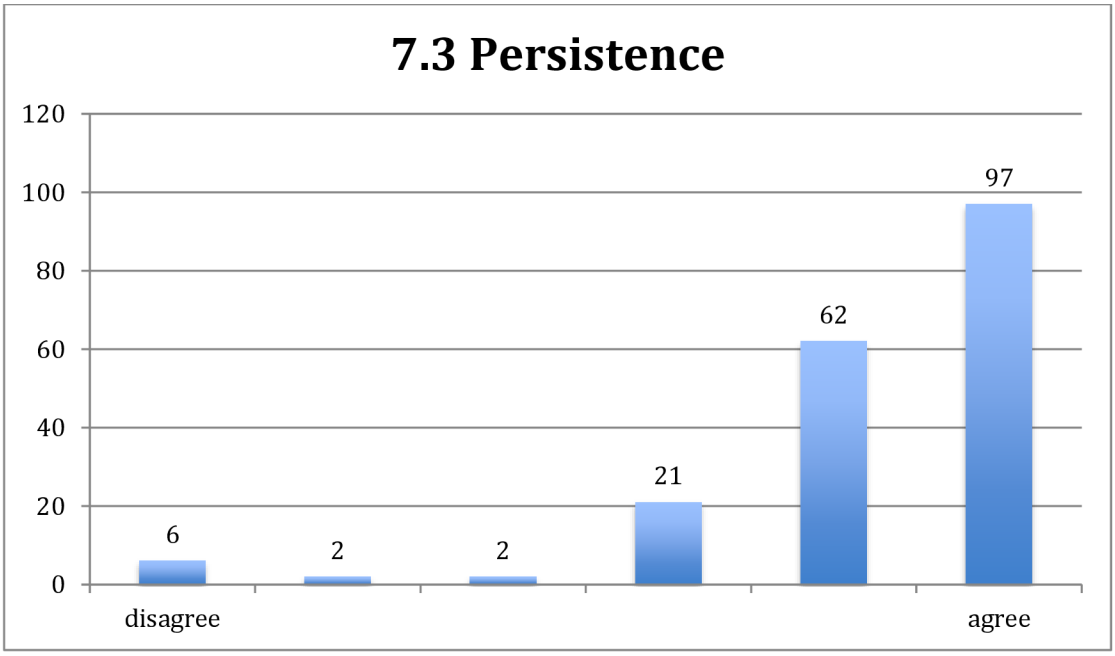

Figure 5.12: Item 7.3. I intend to use suggestions/ideas from this course long-term in my teaching (N=181)

5.2. Descriptive analysis of the qualitative study

In this Chapter, I will briefly demonstrate the findings of the interview study, according to the deductive defined categories. The statistical results (fact-codes) of the interviews have been explained previously in Chapter 4.3.2.

5.2.1. Category 3: Attitude towards professional development

5.2.1.1. Meaning of professionalization (3.1)

In general, all interviewees addressed professionalization as a continuous improvement with the aim of obtaining better at their job. Respondent 2 additionally highlights the importance of being reflective and asking for feedback in this context, "[…] not just because of myself, but for the kids […]" (Resp 2:46). The fifth interviewee mentions that professionalization also involves an intense discourse with a topic. Respondent 4 brings the meaning of professionalization to a point, by seeing its essence in becoming "more like a teacher or the ideal of what a teacher would be" (Resp 4: 43).

5.2.1.2. Opportunities for professionalization (3.2)

The interviewees used multiple ways to gain professionalization. Courses are mentioned in all interviews as one way to professionalize oneself. Most of them also add an exchange with colleagues as a variation of it. The discourse with literature is also a popular way for professionalization (varying on different sources such as books, articles or online resources). One respondent also highlighted the fact that he asks for feedback from his students as a method of professionalization.

5.2.1.3. Number and criteria of professional development courses (3.3)

It is evident that all interviewees were striving for professionalization. As a result, all of them had attended a lot of courses in the current school year

of the study, ranging from four to “countless” courses (Resp 2:58). The criteria for choosing them came primarily from interest and personal focuses. The content varied from informative courses which helped them to make their teaching more interesting, to courses which suited their teaching style or the group of children they were teaching. However, one respondent also mentioned that he was attending courses on topics where he needs support while another teacher reported that she attends them because she is obliged to.

5.2.1.4. Expectations on professional development courses (3.4)

The most frequent expectation of the interviewees regarding professional development courses was to learn new things (Resp 1, 3 and 5). However, they also expected to be able to utilise the ideas learned in class (Resp 3), refresh old knowledge (Resp 1), while Resp 4 stated they did not wish to be bored in a course. Two of them explained that their expectations have been fulfilled (Resp 1 and 4), one was generally satisfied with them except for one attended course (Resp 5), and the other two had mixed feelings on them (Resp 2 and 3), because some courses were good, others were a “waste of [..] time” (Resp 2:81).

5.2.1.5. Attendance reasons (3.5)

Within this category, most of the interviewees shared the fact that they attended courses to improve their personal skills. Only one respondent reported duty as the main reason for attendance (Resp 3). Other motives varied from reactivating knowledge (Resp 1), making lessons more interesting (Resp 2) or simply the reason that teachers “should be taught as well” (Resp 4:122). However, the negative attitude of respondent 3 might be explained by her thinking that professional development in Austria is a little behind that in England, which is why she feels that “the stuff that is thought here, for me is quite old” (Resp 3:69).

5.2.2. Category 4: Experiences with social work environment

5.2.2.1. Atmosphere (4.1)

The interviewees described their atmosphere at work generally as positive. They had experienced most head teachers and the majority of work colleagues as open, cooperative and supportive of them in their work. However, some negative comments were made, especially for native speaker teachers, who teach in many schools and consequently need to deal with plenty of different surroundings. I shall elaborate on these aspects in the following subcategories.

5.2.2.2. Atmosphere between working colleagues (4.1.1)

Openness is a keyword, and it played a significant role for most of the interviewees. Accordingly, it was the main criterion for experiencing a positive atmosphere with an individual's working colleagues. All respondents reported a good climate with their colleagues, however, respondent 3 said that it had been better in England, and respondents 2 and 4 explained that they also had had negative experiences with colleagues (since they work with many different co-workers as native speaker teachers). This had also affected them in their teaching. Respondent 4 stated that one teacher had even closed the door and refused to let him into the classroom to teach, and respondent 2 complained about a classroom teacher who did not value his teaching by interrupting him with irritations such as coming in the classroom to tell the children something, giving homework during his lessons, etc.

Despite this, the same teacher spoke about another colleague who motivated him by expressing appreciation of his teaching, as well as assisting him and sharing ideas and discussions with him after class. The fifth interviewee highlighted the importance of good atmosphere in terms of solidarity. Teaching in a special-needs school involved many difficulties for her, such as frequent violence and the presence of the police when bad things happened. In such situations, it was especially important for her to have solidary colleagues, helping each other over these hard events. Humour was also essential for her in this setting.

5.2.2.3. Atmosphere resulting from the headmaster (4.1.2)

The relationships of interviewees to their head teachers were, generally speaking, very good. All interviewees were quite satisfied with them by being supportive (for example, in terms of considering private circumstances) or by allowing them flexibility and freedom in their teaching. However, respondent 2 mentioned a headmistress who was pleasant to him, but not open enough for other cultures or the children, in his opinion. He considered that besides offering the subjects German and English, more cultural work needed to be done in Vienna, which he was not able to identify in this specific school. Respondent 4 (also a native speaker) added to this topic in stating that he was unable to get in touch with some headmasters owing to their poor confidence in speaking English. Therefore, they sent another teacher, who performed the administrative matters with him.

5.2.2.4. Experiences with forced participation (4.2)

Situations in which interviewees experienced participation pressure are primarily during SCHILF (school internal professional development) courses. However, they felt comfortable about attending them. Respondent 3, for instance, thought that sometimes it would have been useful to have a course with the whole school so that all received the same information.

Respondent 1 mentioned that sometimes one teacher of a school is obliged to attend a course (for example, because it is required by the supervisory board) and the headmistress needs to send someone from the team there as a result. In such cases, she agrees to go there if she is asked and does not feel negative about it. Respondent 2 reported that he receives regular e-mails from his headmistress with course recommendations, but he does not feel under pressure, because it was left open to him to sign up for a suitable course or not.

5.2.2.5. Difference between compulsory and voluntary participation (4.3)

In general, all interviewees agree on the fact that voluntary participation is to be preferred to compulsory participation. Respondent 4 said that he is not happy if he is forced to participation and further argues, “I can’t imagine people really learning a lot when they’re not happy” (Resp 4:286). Respondent 2 saw this issue similarly and advised “don’t force the teachers […] ask them to come, give them a reason why it would be beneficial for them” (Resp 2:254). He gives an example of an attended CLIL course where half of the participants had been compelled to attend, according to his perception. These teachers disturbed the motivated ones in their learning by indulging in things such as being a lot on their phones, engaging less in group works, etc., which also covers the opinions of respondent 1, who believed that compulsory participants would become less involved in a course. Respondent 5 reported that she also had to take courses because nobody else in her school was willing to attend them, but it did not bother her that much, because she viewed herself as open to new challenges. It was an example of why she took courses in computer technology and multimedia, for instance, since she is teaching this subject in her school now. She highlights that fact that in this regard she easily accepts compulsory participation if she is able to utilise the things in her teaching and if she can see a way of implementing them in the near future. Otherwise, if she had to wait two years until she was able to use them, it would be hard to remember the things learned.

5.2.2.6. Experiences with recommendations from colleagues (4.4)

All participants, except respondent 5, talked about courses attended with their colleagues and further recommend them (or specific instructors) if they were good. Respondent 2 said that he discussed courses that sounded interesting with colleagues, even during the registration process and furthermore would sign up with them together, if possible. Only the fifth interviewee explained that they did not recommend courses to each other at her school.

5.2.3. Category 5: Opinion on statistical results of the study

5.2.3.1. Opinion on motivational impacts (5.1)

All interviewees agreed that motivation is a driving force when ideas from a seminar become implemented in the classroom. Respondent 5 formulated a simple explanation for the different degrees of implementation. She suggested different types of motivation are responsible for this result. Additionally, the interviewee stated that intrinsic motivation (although not mentioned by me as interviewer at that point) was the main criterion for successful transfer processes. According to her, one is more likely to use ideas in one's own classroom when motivation is high. Respondent 1 argued that "professional development becomes alive from participants who get involved"[16] (Resp 1:193). Respondent 3 highlighted an example of a course with musical activities which he did not implement in his teaching, because he does not like singing and does not feel confident doing it. Consequently, he thinks that interest and motivation are requirements in order to use ideas in the classroom: "if I go into a course and I'm interested […] then I tend to try to find things that fit […] that I can easily integrate" (Resp 4:345). Respondent 3 exhibited a similar opinion on that subject. She thought that the interesting courses are well implemented. Even if the attendance is not voluntary, this can work well if things are interesting and useful. Respondent 2 viewed this topic using a sociological perspective. He thinks that "as a teacher you are not working in a society or in an environment where you get motivated by pay" (Resp 2:302) and concludes with "So the motivation I get is from my kids. The good work I put in is the good work that comes out" (Resp 2:331). As a result, his main criterion is the motivation teachers get from their students.

5.2.3.2. Opinion on forced/voluntary "English Experts" (5.2)

In terms of statistically higher transfer rates among voluntary "English Experts" compared to appointed ones, most interviewees highlighted the importance of passion. This implies that appointed "English Experts" might not

[16] translated from German. Original citation: "jede Fortbildung lebt von den Leuten die dort sitzen und mitdenken und mitmachen." (Resp 1:193)

have the same passion as voluntary ones, which would explain their motivation and engagement in using ideas from a seminar. Respondent 1 talked about her own experience in teaching Sports. She has a passion for it and therefore thinks that she is motivated and able to pass this motivation on to the children. She doubted that someone who did not share this passion would be able to engage with this spirit in the children as well, regardless of whether the subject is Sports or English. Respondent 3 questioned whether appointed teachers really want to be “English Experts” and that this negative attitude is not good for the implementation processes. Interesting insights come from respondent 4. He knows “English Experts” who were appointed to that position and reported that in his opinion it is a matter of competence. Some “Expert” teachers that he knows do not have the necessary English skills, although nobody else at their school wanted to be an “English Expert”. Consequently, the teachers have issues in teaching English as well as in following the presenter at a course (due to language barriers, because they are tired when a course takes place in the afternoon after a hard day’s work in class).

5.2.3.3. Opinion on idea sharing (5.3)

All interviewees believed that idea sharing can increase the transfer process. Stated simply, if the course was not be good, a teacher would not share ideas, which exemplified to some extent the course’s quality and the enthusiasm of the teacher. A second important element is that ideas from the seminar become actively revised by speaking about them with colleagues. Therefore, they remain accessible for longer and can be implemented better if used soon after the course. Respondent 1 added that the work atmosphere with colleagues is also important for this process, since team meetings and the climate within a team can affect the act of idea sharing as well.

5.2.4. Category 6: Personal experience on successful transfer processes

Based on the responses of the sample interviewees, the following criteria are important for successful transfer processes: references to the practical use of presented ideas – in the best case ideas for a 1:1 use; theoretical inputs supporting the participants' understanding of why some things work in the classroom and why some do not; presented topics being up-to-date and useful; and professional course instructors. In terms of motivational factors, respondent 2 brought it to the point by stating that "whoever the giver is has to be motivated" (Resp 2:534) and "the receiver [..] has to be motivated and interested to receive and ready to pass on […] it's a circle" (Resp 2:535). According to that statement and the experience from respondents 1 and 5, the motivation of the instructor is a high priority in this transfer process. Respondent 3 added that the openness of colleagues is also important for using ideas, since she, as a native speaker teacher, gives a lot of her lessons as part of a team. Respondent 1 and 4 pointed out that sometimes things from a seminar were unable to be implemented in their own classrooms, because resources (in particular technical equipment which was presented in courses) were not available. Finally, respondent 2 suggested asking the participants at the end of a course for feedback.

5.3. Answering research questions and hypotheses

This subchapter of my dissertation addresses the research questions and hypotheses from Chapter 4.1. I shall investigate each hypothesis in sequence and answer the research questions with results from my findings. The emphasis of this part is therefore on frequencies and correlations between specific items.

5.3.1. Results concerning the first hypothesis

H_1: A higher degree of self-determination increases the transfer processes of teachers.

The first hypothesis, based on the assumptions of Ryan and Deci (2017) and the findings from Pelletier et al. (2001), argues that the extent of self-determination increases the transfer processes of teachers. To test this hypothesis, I assigned the sample to the three degrees of self-determination (according to Schellbach-Zell and Gräsel 2010). A detailed description and explanation about how I calculated the three types of self-determination can be found in Chapter 4.3.1.

The collected data reveals a strong emphasis of the participants on intrinsic motivation (N=513 which is 89.4% of the sample). Autonomous (N=49 or 8.5%) and controlled motivation (N=12 or 2.1%) are underrepresented in this research. However, these sample sizes decreased once more in the third survey, as the return rate was lower than for the other two questionnaires. As a result, I related motivation also to item 4.13 (intentions to use ideas/suggestions), because the sample size at the end of the second survey was still high. The result was that the degree of self-determination correlated to the participants' intention to use ideas/suggestions with rho=0.15 (N=533) and showed a small effect (see Table 5.1).

Table 5.1: Correlation between the degree of self-determination and transfer processes

		4.13. ... intention to use ideas/suggestions.	7.2 transfer	7.3 persistence
Degree of self-determination	Spearman's rho	.153**	.067	.049
	Sig. (2-tailed)	.000	.372	.507

**. Correlation is significant at the 0.01 level (2-tailed).

While it is a good sign that professional development in the subject English experiences a high amount of intrinsic motivation, it nonetheless limits statements about its impact on transfer processes. A more heterogeneous sample can probably be found in more controlled areas of professional development such as within topics about educational standards. Nevertheless, we observe a trend that motivation does have an impact on transfer processes, even within this limited data. As we can see in Table 5.2, the mean of intrinsic motivation is in both cases (transfer and persistence) slightly higher with a narrower standard deviation compared to autonomous motivation. In other words, intrinsic motivation performed slightly better in transfer processes than autonomous motivation did.

Table 5.2: Report different types of self-determination in terms of transfer/persistence

7.2 Transfer

Self-determination	Mean	N	Std. Deviation
Intrinsic motivation	4.86	161	1.170
Autonomous motivation	4.50	18	1.505

7.3 Persistence

Self-determination	Mean	N	Std. Deviation
Intrinsic motivation	5.26	169	1.048
Autonomous motivation	5.11	19	1.243

Following this, to address the aforementioned issue of limited variation within the sample, qualitative data was added to explore this hypothesis. The qualitative part of this study was not limited to the subject English and therefore showed the respondents' general opinion on motivation in professional development as well. Results from this study demonstrated that

all interviewees think of motivation as an important factor for successful transfer processes. Respondent 5 even highlighted intrinsic motivation as a parameter of great significance.

In summary, we can identify that the degree of self-determination does influence transfer processes if we look at micro processes within the research, at indications such as participants' intentions and at qualitative experiences from the participants.

5.3.2. Results concerning the second hypothesis

H_2: A higher degree of self-determination increases transfer processes within the group of English Experts.

The second hypothesis investigates the impact of controlled or self-determined environments within a highly affected group in this study. Since English Experts are either nominated to this function in a voluntary or compulsory way, they represent the distinction between intrinsic and extrinsic processes very well. The assumption from H_2 arises from similar findings of Grolnick and Ryan (1987) with two groups of students which had been embedded in either a non-controlling or controlling environment.

I tested the second hypothesis by comparing the frequencies of rated transfer processes (items 7.2 and 7.3) with the type of nomination (voluntary/controlled), as demonstrated in Table 5.3. For the work preceding this crosstab, I needed to filter the data and isolate the sample from participants who were not able to transfer ideas in their classroom teaching (qualitative interpretation of item 7.9). Criteria for this exclusion were either when participants did not teach the subject English, or when necessary equipment for a successful transfer was not available (for example, computer and media devices). Consequently, the investigated sample consisted of N=76 (for an actual transfer - item 7.2) and of N=78 (for trends of persistence - item 7.3).

The results demonstrate that half of all voluntary nominated English Experts showed the highest rating in terms of transfer processes (50%) compared to 16.7% of those who had been nominated under controlled

conditions. Similar findings were made in terms of persistence (long-term use), where 68.3% of voluntary English Experts showed the highest rating, compared with 50% doing so under controlled conditions.

Table 5.3: Crosstab between type of nomination and transfer processes*

			7.2 Transfer						
			1 -- do not agree at all	2 -	3 <-	4 ->	5 +	6 ++ agree entirely	Total
English Experts	Voluntary	Count			0	8	21	29	58
		Percent				13.8	36.2	50.0	100.0
	Controlled	Count			1	7	7	3	18
		Percent			5.6	38.9	38.9	16.7	100.0
			7.3 Persistence						
			1 -- do not agree at all	2 -	3 <-	4 ->	5 +	6 ++ agree entirely	Total
English Experts	Voluntary	Count	1		0	2	16	41	60
		Percent	1.7		0.0	3.3	26.7	68.3	100.0
	Controlled	Count			1	4	4	9	18
		Percent			5.6	22.2	22.2	50.0	100.0

*Participants who had no chance of transferring ideas to their classroom teaching were excluded in this table. This involves teachers who attended an English course but did not teach that subject at the moment of the third survey, and participants who didn't have the necessary equipment for an implementation in the classroom (for example, computer and media devices).

These findings were confirmed by one interviewee, who reported that some appointed "English Experts" simply lack of the necessary English skills (competence) to give high quality English lessons and furthermore struggle to follow a professional development course in English, owing to language barriers (Resp 4). This would explain the divergence between the group of voluntary and controlled "English Experts" in terms of the transfer processes.

To sum up: the data of this study produced results similar to Grolnick and Ryan (1987), a reason why the second hypothesis can be confirmed within this sample.

5.3.3. Answering research question one

R_1: How does *autonomy* influence transfer processes in professional development?

Results from this study support the suggestion that autonomy influences transfer processes in professional development. A comparison of intrinsic and autonomous motivation showed higher means of the former in terms of transfer processes (+0.36 for transfer and +0.15 for persistence). As a result, higher self-determination of participants affected their transfer processes, as the theory of Ryan and Deci (2017) or a study from Pelletier et al. (2001) (for persistence) suggests. A more heterogeneous sample with a greater representation of controlled motivation would strengthen this proposition, however, since participants of English courses during the investigated semesters showed predominantly high self-determination. In addition to quantitative data, interviews with teachers showed the same trend, confirming that motivation supports active participation in a course and consequently the implementation of ideas in the classroom.

The second hypothesis, which focused on the specific group of English Experts, showed that a voluntary means of nomination positively influenced transfer processes compared to controlled means of nomination. This means that the findings of Grolnick and Ryan (1987) were able to be replicated in the area of professional development.

5.3.4. Results concerning the third hypothesis

H_3: Participants with higher knowledge at the end of a course show higher transfer processes.

The knowledge of a participant, which to some extent also describes the achieved competence within a course, was tested regarding its influence on transfer processes. The results showed a small effect of an individual's knowledge at the end of a course onto the actual transfer (item 7.2) with

rho=0.15 (N=165). This suggests that knowledge retained at the end of a course seems to be important for future transfer processes as well.

5.3.5. Results concerning the fourth hypothesis

H_4: Participants experiencing a high quality course will use ideas more frequently in their classroom teaching.

Several learning theories agree on the suggestion that the quality of instruction is an important factor for learning outcomes (e.g. Carroll 1963, Gage and Berliner 1996, Helmke 2004, etc.). However, the fourth hypothesis tests to what extent this is also true for professional development. The sample itself demonstrated a very high course quality in general. Consequently, the mean of all evaluated courses (N=563) was very high (5.58 on a six-point answer scale), with a standard deviation of 0.679. Nevertheless, individual courses still showed diverse values, ranging from a mean of 4.28 to 5.98 (for more information on the quality of each course see Chapter 10.5.2 in the Appendix). The transfer, as the dependent variable (item 7.2), achieved a mean of 4.81 and a standard deviation of 1.234 (N=181). For testing the hypothesis, it was necessary to correlate these two variables as a next step. The result was that the teaching quality score (calculated according to Tillmann et al. 2011) correlated with transfer with rho=0.36 (N=170) and with an intention to long-term use (persistence) with a similar rho=0.40 (N=178). The medium effects of these correlations are even higher if we exclude those participants who lacked transfer opportunities (rho=0.37 for transfer with N=151 and rho= 0.42 for persistence with N=156).

The result is that data from the study confirms the fourth hypothesis by verifying the positive effects of teaching quality on transfer processes (including intentions to persistence). Additionally, respondent 5 mentioned in an interview that the relation between teacher and student continues in a professional development course. This meant the motivation of the course instructor was essential for a successful transfer, in the opinion of two interviewees (Resp 1 and Resp 5).

5.3.6. Results concerning the fifth hypothesis

H_5: Participants with a higher intention to use ideas/suggestions in their classroom teaching are more likely actually to transfer them.

The intention to use ideas or suggestions at the end of a course seems to be a good indicator for future transfer processes. When participants were motivated to do so and as a result felt competent in doing, they seemed to use such ideas/suggestions in their classroom teaching. Results showed that this intention correlated with an implementation in the classroom at rho=0.30 (N=169) and with an intention for a long-term use (persistence) at rho=0.37 (N=177). The medium effects of these correlations are even higher, when we exclude the cases of participants who lacked transfer opportunities (rho=0.35 for transfer with N=150 and rho=0.39 for persistence with N=155). These results come close to Gessler's findings (2011), when he measured a correlation of r=0.49 in a business training session which had to be implemented in the participants' workplace.

5.3.7. Answering research question two

R_2: How does *competence* influence transfer processes in professional development?

Results from the third through to fifth hypotheses demonstrate that competence is another important component for successful transfer processes which was able to be illustrated very well in this sample by correlations. This phenomenon was also highlighted in interview four, when the respondent raised the issue that language barriers can decrease the personal development of appointed "English Experts" and further influence the transfer process in a negative way as well (Resp 4). Quantitative results strengthen this statement, because H_3 and H_5 show that an individual's level of competence at the end of a course is an important parameter for subsequent transfer processes. Consequently, subjective knowledge (rho=0.15) and intentions to transfer (rho=0.35) had only small or medium

effects on the actual transfer process. However, my research also found that the course experience as a whole, quantified by the perceived course quality, affected transfer processes. The teaching quality score of Tillmann et al. (2011) (see H_4) illustrated such a correlation with the present transfer with rho=0.37, and with intentions for a long-term use (persistence) with rho=0.42. We can conclude that competence does influence the transfer of professional development, represented by individual knowledge, intentions to transfer and subjective course quality.

5.3.8. Results concerning the sixth hypothesis

H_6: Participants in a professional development course are more likely to share ideas from a course when experiencing a self-determined work environment than under enforced conditions.

The aim of this hypothesis was to investigate the influence of participation decisions on the act of idea-sharing with working colleagues. For this reason, I needed to assign statements from the item 2.6 (Who influenced your decision about participating in this course?) to different degrees of self-determination. Compulsory attendance (by the headmaster or supervisory board) was thereby linked to controlled motivation, recommendation to an autonomous and self-made decision to intrinsic motivation. The resulting sample showed that only a few teachers experienced their decision process as controlled (N=11) or autonomous (N=30), which is why the results of controlled motivation may have arisen by chance and are not taken into consideration. However, if we compare intrinsic and autonomous motivation, the former are more likely (+4.5%) to share ideas with working colleagues (as demonstrated in

Table 5.4: Crosstab between idea sharing and participation reasons

).

Table 5.4: Crosstab between idea sharing and participation reasons

2.6 Participation reason		7.6 Idea Sharing Yes	No	Total
Own decision (intrinsic)	Count	137	39	176
	Percent	77.8	22.2	100.0
Recommendation (autonomous)	Count	22	8	30
	Percent	73.3	26.7	100.0
Forced (controlled)	Count	9	2	11
	Percent	81.8	18.2	100.0

5.3.9. Results concerning the seventh hypothesis

H_7: Sharing ideas of a professional development course with working-colleagues increases the transfer itself.

The last hypothesis concludes with the assumption that the social environment has an impact on transfer processes, as several learning and motivation theories suggest (e.g. Adams 1965, Bandura 1979, Helmke 2004, Proctor 1984, etc.). In the field of work, teachers find one of these social contexts within their working colleagues. As a result, well-being through relatedness may arise if there is a good social connection among colleagues, which is indicated by the act of idea sharing within this study. Accordingly, I tested if such an event was also linked to the transfer itself. For a more representative result, I excluded cases of participants who were not able to transfer ideas in their classroom teaching due to of reasons beyond their capabilities (e.g. they do not teach the subject English at that time or did not have the necessary equipment, such as computer or multimedia devices, for proper implementation).

Table 5.5: Crosstab between idea sharing and transfer

			7.6 Idea sharing					
			Yes	No	Total		Yes	No
7.2 Transfer	1 disagree	Count	1	3	4	1-3 Count	2	7
		Percent	0.8	7.9	2.5			
	2 -	Count	0	1	1			
		Percent	0.0	2.6	0.6	1-3 Percent	1.6	18.4
	3 <-	Count	1	3	4			
		Percent	0.8	7.9	2.5			
	4 ->	Count	18	9	27	4-6 Count	122	31
		Percent	14.5	23.7	16.7			
	5 +	Count	54	17	71			
		Percent	43.5	44.7	43.8	4-6 Percent	98.4	81.6
	6 totally agree	Count	50	5	55			
		Percent	40.3	13.2	34.0			
Total		Count	124	38	162		124	38
		Percent	100.0	100.0	100.0		100.0	100.0

			7.6 Idea sharing					
			Yes	No	Total		Yes	No
7.3 Persistence	1 disagree	Count	2	2	4	1-3 Count	3	4
		Percent	1.6	5.0	2.4			
	2 -	Count	0	1	1			
		Percent	0.0	2.5	0.6	1-3 Percent	2.3	10.0
	3 <-	Count	1	1	2			
		Percent	0.8	2.5	1.2			
	4 ->	Count	9	7	16	4-6 Count	125	36
		Percent	7.0	17.5	9.5			
	5 +	Count	37	15	52			
		Percent	28.9	37.5	31.0	4-6 Percent	97.7	90.0
	6 totally agree	Count	79	14	93			
		Percent	61.7	35.0	55.4			
Total		Count	128	40	168		128	40
		Percent	100.0	100.0	100.0		100.0	100.0

Table 5.5 demonstrates a connection between higher transfer processes and positive idea sharing. Within the crosstab, we can see that teachers who shared ideas were more likely to transfer them (+27.1% for rating 6 and +16.8% for ratings 4-6), compared to teachers who did not share ideas. Similar findings have been made for idea sharing in relation with the

stage of persistence. Participants who did so were more likely to transfer ideas (+26.7% for rating 6 and +7.7% for ratings 4-6) in comparison to the group which did not share them.

Results from the interviews give two main reasons why idea sharing can increase the transfer process: first, the act of idea sharing reinforces that the participant is enthusiastic about an idea and thinks that it is valuable to use, otherwise it would not be shared. The second argument relates to learning theory (e.g. Gage and Berliner 1996) and simply states that revising learnt content (e.g. by telling a colleague) helps to memorize it and further to implement it (e.g. Respondent 1 or 5).

In summary, the data reveals that the act of sharing ideas was positively related to transfer processes within this sample.

5.3.10. Answering research question three

R_3: How does *relatedness* influence transfer processes in professional development?

This research reveals indications for the importance of an individual's work environment. The results showed that the degree of self-determination within an individual event, like signing up for a course, influences the participant. This effects even behaviour, which appears long after such a decision, such as a teacher's decision to share ideas/suggestions from an attended course with colleagues or not. Consequently, H_7 illustrated a connection between the degree of self-determination and idea sharing. As a result, participants with intrinsic participation reasons were more likely (+4.5%) to share ideas with working colleagues than under autonomous participation reasons. The act of idea sharing, in turn, is important for the transfer process itself, as results demonstrated. Therefore, teachers who shared ideas also performed better in transferring them (e.g. +27.1% for the actual transfer, with the highest rating, or 26.7% for persistence, with the highest rating).

Qualitative results undermine the importance of a positive atmosphere in the work environment on the behaviour of teachers and furthermore the act of sharing ideas and implementing them in the classroom. Bearing this out, respondents 2 and 4 pointed out that a negative atmosphere was demoralizing them and had affected their teaching in a negative way. On the other hand, open colleagues and supportive headmasters had helped them in the implementation process.

The third research question highlights the interdependence of relatedness in the field of work and confirms its importance, as many theories suggest (e.g. Adams 1965, Bandura 1979, Helmke 2004, Proctor 1984, etc.).

5.4. Multiple Ordinal Regression Model

In the previous parts of this work we have explored the collected data in a descriptive way with frequencies and cross-tables and in an interdependent way in performing correlations. In this Chapter, I shall emphasize the process of developing a model to predict our dependent variable, based on theoretically-based independent variables (or predictor variables). An advantage of this process is that "it allows us to go a step beyond the data that we collected" (Field 2009, p.198). Statistics describes this procedure as a regression analysis, which is mathematically expressed by the formula Y=f(X).

Babbie and Mouton describe Y (dependent variable) in this formula as a function of X (independent variable), "meaning that values of Y can be explained in terms of variations in the values of X" (Babbie and Mouton 2014, p.464), or if we put it in a nutshell, that "X causes Y" (Ibid., p.464).

In complex systems such as professional development, it will obviously take more than one independent variable to explain processes, which is why I have used a multiple regression model. The most common way to perform such a regression analysis is a linear regression. However, I decided not to employ a linear regression due to the scale level of my dependent variable (which is ordinal scaled). The literature suggests performing an ordinal regression in such a case to avoid inaccurate statistical operations (e.g. Bürkner and Vuorre 2019, Brosius 2008 or Pfannschmidt et al. 2019).

Aside from the fact that we would have to assume our dependent variable (transfer) to be continuous interval data in linear regression, it also has to be normally distributed, which is hardly the case in feedback ratings, as my data confirms (see Figure 5.13).

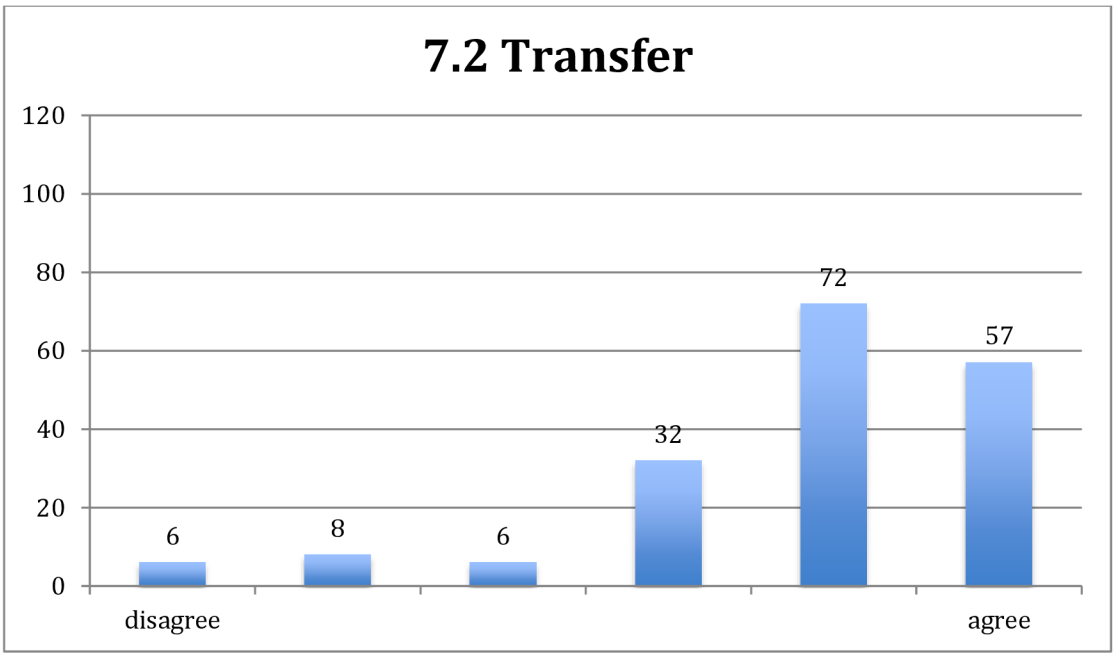

Figure 5.13: Transfer ratings (N=181)

I selected the independent variables which were included in the regression based on theoretical considerations and based on results from frequency and correlation analysis. Since the self-determination theory (Ryan and Deci 2017) as well as also theories emphasizing social contexts (e.g. Adams 1965, Bandura 1979, Helmke 2004 or Proctor 1984) suggest that the social environment (and furthermore, the generated degree of self-determination) affects the behaviour of individual beings, the first predictor variable was found. Individuals signing up for a course should thereby be affected by the experienced degree of self-determination in this process (collected in the first questionnaire at MT_1). A second assumption describes the importance of quality and competence for the learner to use learned content. This is demonstrated in Ryan and Deci's (2017) emphasis on competence within self-determination theory, or in Helmke's (2014) attempt to develop quality criteria for successful learning. Accordingly, the variables demonstrating competence and quality in this model are the teaching quality score, the participants' intention to use ideas in their classroom teaching (item

4.13) (both from the second survey/MT_2) and the subjective knowledge of participants (from the third questionnaire/ MT_3). Once more I have excluded cases which showed good transfer reasons (such as teachers who did not teach English at the time of the third survey or in the case that necessary technical devices for useful implementation were not available in the classroom). This resulted in a total sample size of N=146. Since the sample was not randomly selected, I do not claim to make generalizations for a whole population (or other populations). As a result, I use the term *significance* in this model only to verify or reject statistical test, but not to generalize results.

The selected variables for the regression model are summed up as followed:

Dependent Variable: 7.2 Transfer

Independent Variables: degree of self-determination (participation), Teaching Quality Score, intention to use ideas/suggestions (item 4.13) and current knowledge (item 7.1).

The model demonstrates a Chi-Square of 168.803 and a degree of freedom (df) of 30 with a probability of error of 0.000. As a result, the predictor variables deliver significant results in explaining the transfer processes (dependent variable). Since the values for goodness-of-fit are not significant, we can conclude that this model of ordinal regression is suitable. The link function for our model has been defined as complementary log-log, because the dependent variable (transfer) has a strong tendency towards high categories (as illustrated in Figure 5.13) (Brosius 2008). The Pseude R-Square value of Nagelkerke, which demonstrates a correction of Cox and Snell (0.685), states that our model explains 75.3% of the variance of the dependent variable. If we add the motive of professionalization as an independent variable to our model, we achieve the even higher value of Nagelkerke, at 0.946. However, the sample size drops to more than a half (N=68) in this instance.

In summary, our model states that the independent variables (degree of self-determination at participation, teaching quality score, intention to use ideas/suggestions and the current knowledge at the time of the transfer) explain the transfer process very well with 75.3% of the variance of latter (Pseudo R-Square according to Nagelkerke).

5.5. Findings beyond the research questions

In this Chapter, I'll demonstrate findings which were not explicitly content of the research questions and the tested hypothesis. Nevertheless, I think that they are worth to be mentioned in this subchapter.

5.5.1. Tillmann et al.'s STUD-FEL (2011) explored in more detail

The standardized questionnaire of Tillmann et al. (2011) which I described in Chapter 4.3.1, was already tested on a large population (N=26.543) with high reliability values of Cronbach's α=0.94. In this research, I wished to find out how the questionnaire would perform within the field of professional development. First of all, I tested the reliability within the sample, which is almost identical with Tillmann et al.'s findings at Cronbach's α=0.936. Secondly, I wanted to discover if some constructs are more effective for transfer processes than others. Therefore, I investigated each construct separately, in contrast to H_4, where I set the total quality score in relation to transfer processes. Results (demonstrated in Table 5.6) illustrate that transfer processes correlated best with the construct motivation (rho=0.40), processing depth (rho=0.32), structuring and clarity (rho=0.32), time management and troubleshooting (rho=0.32) and the construct interaction (support/guidance/feedback) (rho=0.32) showing medium effects.

Two of Tillmann et al.'s constructs (2011) were therefore not as important for transfer processes as the others within this sample – cooperation and atmosphere (rho=0.29) and the construct coherent explanations and presentation (rho=0.26) – which demonstrated less significant effects.

Table 5.6: Correlation between transfer and constructs of Tillmann et al. (2011)

		7.2 Transfer
Construct motivation	Correlation Coefficient	.402**
	Sig. (2-tailed)	.000
Construct processing depth	Correlation Coefficient	.322**
	Sig. (2-tailed)	.000
Construct structuring and clarity	Correlation Coefficient	.322**
	Sig. (2-tailed)	.000
Construct time management and troubleshooting	Correlation Coefficient	.317**
	Sig. (2-tailed)	.000
Construct cooperation and atmosphere	Correlation Coefficient	.289**
	Sig. (2-tailed)	.000
Construct interaction (support/guidance/feedback)	Correlation Coefficient	.319**
	Sig. (2-tailed)	.000
Construct coherent explanations and presentation	Correlation Coefficient	.258**
	Sig. (2-tailed)	.001

N=170

**. Correlation is significant at the 0.01 level (2-tailed).

It follows from this that the constructs of Tillmann et al. (2011) differ in relation to their transfer impact, which means that some constructs are more relevant in terms of transfer processes than others.

The construct motivation (of Tillmann et al.'s questionnaire), which had the highest correlation to transfer processes (see results in Table 5.6) was therefore a good predictor for transfer processes. Accordingly, it was interesting whether this construct could be compared to the participant's motivation to transfer (item 4.13), which could possibly reduce this construct from two statements to one item. Results showed that the construct motivation (according to Ibid.) achieved a mean of 5.62 (on a six-point answer scale) and a standard deviation of 0.717 (N=563). The participants' motivation to transfer (item 4.13) performed very similarly, with a mean of 5.68 and the standard deviation of 0.810.

These data confirm that both Tillmann et al.'s construct motivation and the participants' motivation to transfer operate almost identically within this sample.

5.5.2. Additional findings from interviews

An interesting finding came up in an interview with respondent 2. He located a lack of didactical and methodological courses offered in the English language (or even in Turkish or other languages). He mentioned that a lot of native speaker teachers were enthusiastic about obtaining some theoretical knowledge on pedagogy to professionalize themselves, but most of them were not able to do so, because their German skills are not sufficient to follow such a course in this language. Therefore, he wanted to appeal to institutions such as the University College of Teacher Education to offer courses like that (or even whole study programs to become a classroom teacher) in English.

In an interview with respondent 5 she raised the question of whether transfer processes also correlate with the age of a teacher. Consequently, I tested her hypothesis with following result: age correlated with transfer processes (item 7.2) at rho=0.46. However this result is not significant (0.542) (N=181) and therefore no confident statement about any correlation between age and transfer processes can be made.

6. Conclusion

In this last Chapter of my dissertation, I shall sum up the main findings of my study, conclude and discuss them, and finally point out some perspectives for future research.

6.1. Summary of main findings

At the end of this work I should like to reconsider the introductory question:
What influences transfer processes in professional development?

It is not easy to give a simple answer to this question, since many factors interact in such transfer processes, as Maresch has already suggested (Maresch 2010). However, I did find some aspects that demonstrate effects on transfer processes in my quantitative and qualitative findings, which I shall aim to summarise in the following statements:

1. *Motivation* is an essential element for transfer processes.

   It is important from the perspective of a course instructor (giving the input), but also for a participant (as the receiver of information). We could verify this on a quantitative basis (for example, voluntary English Experts tended to implement course ideas more frequently than ones compelled to be such) as well as on a qualitative basis (all interviewees highlighted the importance of motivation for a successful transfer). Additionally, results from Gessler (2011) were able to be replicated for professional development and demonstrated that motivation at the end of a course correlated with a successful transfer (showing a medium effect of rho=0.3).

2. The *competence* of participants is similarly important for future transfer processes.

   It was observed that the actual knowledge at the end of a course showed a small effect on the transfer (rho=0.15 at a sample of N=165) and that the subjective teaching quality (teaching quality score

according to Tillmann et al. 2011) had a medium influence on a successful transfer with rho=0.36 (N=170). However, qualitative results also demonstrated negative effects of absent competence. Respondent 4 explained in this sense that he was motivated in one situation (transferring interesting ideas from an English seminar where he, as a native speaker, felt competent) but experienced a non-successful transfer from a Music seminar (since he does not feel competent in singing). Respondent 1 similarly stated that the strengths of a participant will affect his or her implementation. These findings explain the phenomenon of amotivation, stated in self-determination theory (Deci and Ryan 2000 and Ryan and Deci 2017).

3. Finally, social interaction and a good *relationship* to working colleagues and superiors affects the individual teacher as well (as Bandura 1986, Durkheim 1947, Ryan and Deci 2017, Vroom 1964, etc. suggest).

   Interview partners highlighted that someone will share ideas from a seminar with colleagues when they are enthusiastic about something. Additionally it is helpful to revise learned content (Gage and Berliner 1996) by sharing it, with this subsequently also having a positive impact on a successful transfer. In the opinion of most interviewees, openness is an essential criterion for a good relationship among work colleagues. These findings also accentuate the importance of the relationship between headmasters or headmistresses and their teachers. As respondent 2 recommended, it would be better not to compel teachers to attend a specific course, but to give them good reasons why it is important and helpful for them. By doing so, leadership of headmasters at schools could have positive impacts on successful transfer processes as well.

   Respondent 2 summed up the importance of relationship in the workplace very well, by saying that financial rewards do not provide the ultimate compensation (as Vroom 1964 suggests). From his personal story, he explained that he left a well-paid job and exchanged it for being a teacher and for doing what he loves to do. The smiles and

situations with motivating his students pay him back more than money does.

These three components – which are motivation as autonomy, competence and relatedness – once again illustrate their importance in transfer processes. I should like to highlight a fourth aspect in what follows, which is related to competence:

4. The importance of *practical value* within a course is fundamental for many teachers. Accordingly, it seems necessary for an instructor to demonstrate ideas which can be implemented in an easy way (in the best case in a 1-to-1 use) in class. When participants have the opportunity to try out short sequences within a classroom they are able to experience the productive process themselves (Bandura 1986), which helps them to detect a value in these ideas for their classroom and also makes it easier to remember the ideas (Gage and Berliner 1996).

6.2. Discussion

This dissertation highlights on the one hand various aspects evident in professional development courses. The quality of a course and motivation which a course instructor brings are such important elements. On the other hand the outcomes of such a course are not limited to the impact of a single individual (the course instructor or the single participant), but on the influences from the collective (several different groups, or even society in an abstract perspective). In fact it is essential we include the seminar group and its consequences on transfer processes, otherwise it would direct the participation within the course (in addition to the instructor). Similarly, we have to consider the work environment from the perspective of a single participant (involving the influence of colleagues, the head teacher, the work climate, available resources and equipment, etc.). In this discussion, I should like to emphasize the importance of leadership at schools. As the literature suggests (e.g. Helmke 2004 and Röder, Drössler and Jerusalem 2010), head teachers do play a significant role in this implementation process. They can support teachers by recommending useful courses or by giving them good reasons for participating in specific seminars, instead of compelling them to take part without explanation. Another aspect where headmasters have an influence is upon the work environment, which they can shape adversely or positively. Ryan and Deci (2017) advises superiors to establish autonomy-supportive environments, because if head teachers do so for their teachers, teachers are also likely to do so in their classroom, which consequently helps the students to learn better. As we can see in this example, professional development (and further learning) is not limited to an individual teacher, but may affect our whole society in a positive way.

6.3. Perspectives

This dissertation gives a good overview of transfer research in the field of professional development using the example of English courses. However, apart from some qualitative results from other subjects (other than English), quantitative data for generalizations is absent. Therefore I think that a continuation of this research to cover other professional development courses (and consequently other fields besides English) would be beneficial. In the methodological part (Chapter 4.3.1) I already spoke about the limitations of this study in terms of the return rates from the third survey, which dropped from N=575 (MT_1/Q_1) and N=563 (MT_2/Q_2) to N=190 (MT_3/Q_3). For a general understanding of transfer processes in professional development, it would be necessary to evaluate a whole institution (such as the University College of Teacher Education in Vienna) with all the courses offered. Such a project would obviously need a whole research team, but it could be worth the effort in order to produce new and important findings on this topic.

Another project which may arise from the findings of this study is the establishment of new kinds of courses. Respondent 2 raised the issue that many people would be interested in becoming a classroom teacher or in doing courses on pedagogy, didactics and methodology so as to professionalize. The only problem for some of them is that German is not their first language and therefore they do not feel competent enough to manage these courses in German. If an institution like the University College of Teacher Education were to offer such content in English, it could open the door for a new and holistic form of professionalization of teachers who are not yet fully included in this process. Courses in other languages, such as Turkish, could follow should there be a demand for them.

In conclusion, I would like to highlight the importance of our individual attitudes in the field of education. If, for instance, our expectations from the students are low, we shall be unable to make a big change in their lives. With the words of Bloom, we could say: “The cost of this system in reducing opportunities for further learning and in alienating youth from both school and society is so great that no society can tolerate it for long.” (Bloom 1968, p.1). Out of this need, we, as a society, should strive for positive expectations from our students, our school systems and teachers so that it becomes the goal of each stakeholder within this system to support it in the best way they can and that the result is optimal for our students, which is the best for our future society.

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10. Appendix

10.1. Frequently used terms

This section of my dissertation describes frequently used terms within it with the aim of supporting reading comprehension. However, it is located in the Appendix, because it should not disrupt the reader who is familiar with these expressions. At the same time it provides all others with a definition of the most frequently used terms within this work.

Learning

For a definition of learning, I would like to refer to Gage and Berliner with a procedure-oriented approach. According to them, learning occurs if the behaviour of an individual changes because of experience. This implies that learning takes time, which thus requires two points in time to observe whether behaviour has changed or not. Similar conditions at both time points are also necessary to compare it objectively. In their definition Gagne and Berliner assume that learning has occurred when behaviour has changed from the first to the second observation point. They add that the origin of learning (in psychology) is the behaviour of an organism (such as an animal, human student or a teacher) which can be observed directly. Gage and Berliner illustrate that learning in the context of school is usually linked to understanding, reminding and implementing but also has to do with values and norms (Gage and Berliner 1996).

Professional development

Professional development, as already used in the title of this dissertation, implies courses for teachers which permit them to professionalize themselves. Such courses may cover didactic content (for example, how to teach English in combination with other subjects), training in personal skills (e.g. classroom management, rhetoric, etc.) or focus on other aspects connected to teaching (e.g. team building).

The ambiguous meaning of ‘professional development’ in different countries makes it necessary to define it more precisely. In the German language, it is translated as "Fortbildung" or "Fort- und Weiterbildung". In some countries both terms are used interchangeably, in others not. In Austria, where the study was performed, there exists a difference between activities over a shorter period of time ("Fortbildung") and activities over a longer period of time ("Weiterbildung") (BDP 2003 and Tenberge 1997). Huber, for instance, differentiates "Fortbildung" and "Weiterbildung" by distinguishing between their qualifications. Following this, courses which improve existing qualifications are called "Fortbildung" while courses that establish new qualifications (for instance for new functions in school management, etc.) are defined as "Weiterbildung" (Huber 2009).

Within this study I refer to both distinctions of professional development (as "Fortbildung"), since the courses investigated lasted for a short period of time (two dates maximum) and improved existing qualifications (they required at least some pre-existing knowledge from the participants).

Transfer

The term transfer, coming from the Latin words "transfero, transferre, transulti, translatus = carry/bring across/over, transplant, transport/convey/transfer/shift, transpose" (Oxford Latin Dictionary 1982), has various meanings. In the field of education, we can find overall comprehension with a general definition of transfer from Hertel (2010). She mentions that a transfer happens when learned content becomes realized into the field of work (which applies to classroom teaching within this study) (Hertel 2010).

For a deeper understanding of transfer, I traced two perspectives in the field of learning/teaching that do not exclude each other: transfer of content (substantial transfer) and transfer of experience (procedural transfer) (Gage and Berliner 1996).

Transfer of content (substantial transfer)

Transfer of content ought to teach students directly what they need for later processes/life (for example, computer skills, reading skills, English grammar, etc.). This form of transfer is based on Thorndike and Woodwork's theoretical concept of identical elements which predicts a transfer to be more likely when situation A (learning activity) is similar to situation B (when transfer is performed) (Thorndike 1911). Gage and Berliner see transfer as an adoption of learned reactions onto new and/or changed situations. As a positive result, learners can solve tasks easier and faster (Gage and Berliner 1996). Hasselhorn and Hager describe transfer in a similar way to a process in which learned skills are used within new situations and speak in this context of specific transfer (Hasselhorn and Hager 2008). Hertel, Pickl and Schmitz explain transfer as the extent in which learners successfully use content and strategies from a training session in their individual, daily routine of learning over a short and long period of time (Hertel, Pickl and Schmitz 2008)[17].

Due to the complexity of this study, I have used the term transfer for a short-term implementation of ideas from a course (subjective perception of participants), in contrast to Hertl, Pickl and Schmitz' definition, though I have also collected trends for long-term use.

Transfer of experience (procedural transfer)

Training of principles, rules and techniques can construct knowledge. This knowledge is necessary for the learner to discover different options of implementation. For instance, the skill to handle a setsquare opens up versatile opportunities to transfer this skill (Gage and Berliner 1996).

To summarise: based on the definitions listed above, transfer (within this study) can be described as a process when ideas from a professional development course are being used in a new and/or changed situation (classroom teaching) and are in the best case implemented over a long period of time to make learning for students in school easier and more effective.

[17] Original citation: "Transfer beschreibt das Ausmaß, in dem Lernende kurz- und längerfristig die im Training erworbenen Inhalte und Strategien erfolgreich auf ihren individuellen Lernalltag übertragen." (Hertel, Pickl and Schmitz 2008, p.240).

10.2. Quantitative Research: Survey 1

Questionnaire 1 (Q1)

Title of the course: _____

Dear colleague,

you can support this seminar's improvement in quality by answering this questionnaire, as already mentioned in advance via e-mail.
Thank you for your support.

Best regards,
Martin Klein
(martin.klein@phwien.ac.at)

1. Information about the participant

First letter of your mother's first name: ☐	First letter of your father's first name: ☐
Your favorite animal: _____	Age: ☐☐

Currently I am teaching in:
☐ Primary School ☐ New Middle School
☐ Special School ☐ Secondary Academic School
☐ other: _____

2. Statements about the participation of this course

	Please rate yourself!	--	-	←	→	+	++
2.1	How do you rate your pre-knowledge about topics of this course?	☐	☐	☐	☐	☐	☐

2.2	I intend to use suggestions/ideas from this course in my classroom teaching.	disagree ☐ ☐ ☐ ☐ ☐ ☐ agree

2.3 I am attending this course ... (multiple answers possible)
- ☐ because I'm interested in the topic.
- ☐ because I want to professionalize especially in the subject English.
- ☐ because I have to attend this seminar.
- ☐ to fulfil my required number of annual professional development courses.
- ☐ Other reasons: _____

2.4 Are you one of the „English Experts" (according to the Vienna Board of Education) at your school?
- ☐ Yes, I volunteered for this function. (multiple answers possible)
- ☐ Yes, I was appointed for this function.
- ☐ No.

2.5 For how many professional development courses in the subject English have you signed up for in this semester? (in addition to this course)

☐

2.6 Who influenced your decision about participating in this course? (multiple answers possible)
- ☐ Appointment through the supervisory board (FI/PSI).
- ☐ Own decision.
- ☐ Appointment through my headmaster.
- ☐ Recommendation through colleagues/headmaster/ supervisory board.
- ☐ Other reasons:_____

Fragebogen 1 (FB1)

VA-Titel: _____

Liebe Kollegin, lieber Kollege,

wie bereits per E-Mail angekündigt, können Sie mit dem Beantworten dieses Fragebogens zur Qualitätsverbesserung dieser Fortbildungsveranstaltung beitragen.
Herzlichen Dank für Ihre Unterstützung.

Freundliche Grüße,
Martin Klein
(martin.klein@phwien.ac.at)

1. Angaben zur Person

Erster Buchstabe des Vornamens Ihrer Mutter: ☐	Erster Buchstabe des Vornamens Ihres Vaters: ☐
Ihr Lieblingstier: _____	Ihr Alter: ☐☐

Ich unterrichte derzeit in folgendem Schultyp: ☐ VS ☐ NMS ☐ ASO ☐ AHS
☐ anderer: _____

2. Aussagen zur Teilnahme

	Bitte schätzen Sie sich ein!	--	-	←	→	+	++
2.1	Wie beurteilen Sie Ihr Vorwissen zu den Themen dieser Veranstaltung?	☐	☐	☐	☐	☐	☐

2.2	Ich habe vor, Anregungen/Inhalte aus dieser Veranstaltung in meinem Unterricht einzusetzen.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu

2.3 Ich besuche diese Veranstaltung ... (Mehrfachnennung möglich)
- ☐ weil mich das Thema interessiert.
- ☐ weil ich mich besonders im Fach Englisch fortbilden möchte.
- ☐ weil ich an diesem Seminar teilnehmen muss.
- ☐ weil ich damit Stunden meines Fortbildungskontingentes abdecke.
- ☐ Sonstige Angaben: _____

2.4 Wurden Sie mit der Funktion des „English Experts“ an Ihrer Schule betraut?
- ☐ Ja, für diese Funktion habe ich mich freiwillig gemeldet. (Mehrfachnennung möglich)
- ☐ Ja, für diese Funktion wurde ich bestimmt.
- ☐ Nein.

2.5 Zu wie vielen Fortbildungen im Bereich Englisch haben Sie sich in diesem Semester angemeldet? (zusätzlich zu diesem Seminar)

☐

2.6 Wer beeinflusste Ihre Entscheidung zur Teilnahme an dieser Veranstaltung? (Mehrfachnennung möglich)
- ☐ Verpflichtung durch die Schulaufsicht (FI/PSI).
- ☐ Eigene Entscheidung.
- ☐ Verpflichtung durch die Schulleitung (Direktorin/Direktor).
- ☐ Empfehlung durch KollegInnen/Schulleitung/Schulaufsicht.
- ☐ Sonstige Angaben: _____

10.3. Quantitative Research: Survey 2

Questionnaire 2 (Q2)

Title of the course: _____

3. Coding

First letter of your mother's first name: ☐	First letter of your father's first name: ☐
Your favorite animal: _____	

Dear colleague,

below you will find several statements regarding this course. Please rate them by ticking the check box, matching the statement which best applies to the attended course. Please read the following statements and answer them spontaneously.

4. Statements regarding the course

4.01	Attending the course has resulted in a noticeable increase in my knowledge level.	do not agree at all ☐ ☐ ☐ ☐ ☐ ☐ agree entirely
4.02	The topics presented are well structured.	☐ ☐ ☐ ☐ ☐ ☐
4.03	The seminar offers sufficient course material (handouts, texts, literature lists, etc.)	☐ ☐ ☐ ☐ ☐ ☐
4.04	The seminar was held at a suitable pace.	☐ ☐ ☐ ☐ ☐ ☐
4.05	Difficult content is being explained in a comprehensible way.	☐ ☐ ☐ ☐ ☐ ☐
4.06	The professor / lecturer provides helpful feedback to their comments and questions.	☐ ☐ ☐ ☐ ☐ ☐
4.07	Media (e.g. texts, blackboard, slides) are used in an appropriate way.	☐ ☐ ☐ ☐ ☐ ☐
4.08	The course provides a good overview of the treated content.	☐ ☐ ☐ ☐ ☐ ☐
4.09	A "central theme" of this course is clearly identifiable.	☐ ☐ ☐ ☐ ☐ ☐
4.10	The course discusses actual trends, within its potential.	☐ ☐ ☐ ☐ ☐ ☐
4.11	The course supports self-reliant and active engagement with learning content.	☐ ☐ ☐ ☐ ☐ ☐
4.12	The course provides a constructive, positive atmosphere.	☐ ☐ ☐ ☐ ☐ ☐
4.13	I intend to use suggestions/ideas from this course in my classroom teaching.	☐ ☐ ☐ ☐ ☐ ☐

	Please rate yourself!	--	-	←	→	+	++
4.14	How do you rate your current knowledge about topics of this course?	☐	☐	☐	☐	☐	☐

5. Perspectives

5.1 Which suggestions/ideas of this course would you like to use in your classroom teaching?	5.2 Would you recommend this course? ☐ Yes, because ... ☐ No, because ...

Fragebogen 2 (FB2)

VA-Titel: _____

3. Codierung

Erster Buchstabe des Vornamens Ihrer Mutter: ☐	Erster Buchstabe des Vornamens Ihres Vaters: ☐
Ihr Lieblingstier: _____	

Liebe Kollegin, lieber Kollege,

im Folgenden finden Sie eine Reihe von Aussagen über die Lehrveranstaltung, in der Sie diesen Fragebogen erhalten haben. Schätzen Sie bitte durch Ankreuzen ein, in welchem Ausmaß diese Aussagen Ihrer Meinung nach auf die jeweilige Lehrveranstaltung zutreffen. Lesen Sie bitte die folgenden Aussagen und beantworten Sie diese spontan.

4. Aussagen zur Lehrveranstaltung

4.01	Der Besuch der Veranstaltung führt zu einem spürbaren Wissenszuwachs.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.02	Der in der Veranstaltung vermittelte Stoff ist gut strukturiert.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.03	In der Veranstaltung werden ausreichend Hilfsmittel zur Aneignung des Lehrstoffs (Skripte, Lehrtexte, Literaturlisten etc.) angeboten.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.04	Das Tempo der Veranstaltung ist angemessen.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.05	In der Veranstaltung werden auch schwierige Inhalte verständlich erklärt.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.06	Der Veranstalter / die Veranstalterin geht auf Fragen der Teilnehmer/-innen angemessen ein.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.07	In der Veranstaltung werden Medien (z.B. Texte, Tafel, Folien oder PowerPoint-Screens) in für den Inhalt geeigneter Weise eingesetzt.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.08	In der Veranstaltung wird ein guter Überblick über das behandelte Stoffgebiet vermittelt.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.09	In der Veranstaltung sind inhaltliche Zusammenhänge („roter Faden“) deutlich erkennbar.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.10	In der Veranstaltung wird gemäß der Möglichkeiten des Themas auf aktuelle Bezüge eingegangen.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.11	Eine selbständige und aktive Auseinandersetzung mit den Lerninhalten wird durch die Veranstaltung gefördert.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.12	In der Veranstaltung herrscht ein konstruktives, positives Klima.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu
4.13	Ich habe vor, Anregungen/Inhalte aus dieser Veranstaltung in meinem Unterricht einzusetzen.	trifft nicht zu ☐ ☐ ☐ ☐ ☐ ☐ trifft zu

	Bitte schätzen Sie sich ein!	--	-	←	→	+	++
4.14	Wie beurteilen Sie Ihr aktuelles Wissen zu den Themen dieser Veranstaltung?	☐	☐	☐	☐	☐	☐

5. Ausblick

5.1 Welche Anregungen/Inhalte dieser Fortbildung möchten Sie in Ihrem Unterricht einsetzen?	5.2 Würden Sie diese Veranstaltung weiterempfehlen? ☐ Ja, weil ... ☐ Nein, weil ...

10.4. Quantitative Research: Survey 3

Questionnaire 3 (Q3) Title of the course: _____

(Online)

6. Coding

First letter of your mother's first name: ☐	First letter of your father's first name: ☐
Your favorite animal: _____	

7. Statements about realization

	Please rate yourself!	--	-	←	→	+	++
7.1	How do you rate your current knowledge about topics of this course?	☐	☐	☐	☐	☐	☐

7.2	I used a lot of suggestions/ideas from this course in my classroom teaching.	disagree ☐ ☐ ☐ ☐ ☐ ☐ agree
7.3	I intend to use suggestions/ideas from this course long-term in my teaching.	disagree ☐ ☐ ☐ ☐ ☐ ☐ agree
7.4	My teaching has changed thanks to this course.	disagree ☐ ☐ ☐ ☐ ☐ ☐ agree

7.5 At least one suggestion/idea of this course has been used ...

☐ once in my teaching.

☐ repeatedly in my teaching.

☐ Use of the suggestions/ideas of this course was not possible in my classroom teaching.

7.6 I shared suggestions/ideas of this course with colleagues.

☐ Yes.

☐ No.

7.7 Which suggestions/ideas of this course have you used in your classroom teaching?

7.8 Those things supported me to use suggestions/ ideas of this course in my classroom teaching: *(e.g. handouts, support through colleagues, ...)*	7.9 Those things made it difficult/impossible for me to use suggestions/ideas of this course in my classroom teaching: *(e.g. school equipment, currently I don't teach this subject, …)*

Fragebogen 3 (FB3)

VA-Titel: _____

(Online)

6. Codierung

Erster Buchstabe des Vornamens Ihrer Mutter: ☐	Erster Buchstabe des Vornamens Ihres Vaters: ☐
Ihr Lieblingstier: _____	

7. Aussagen zur Umsetzung

	Bitte schätzen Sie sich ein!	--	-	←	→	+	++
7.1	Wie beurteilen Sie Ihr aktuelles Wissen zu den Themen dieser Veranstaltung?	☐	☐	☐	☐	☐	☐

7.2	Ich konnte viele Anregungen/Inhalte aus dieser Fortbildung in meinem Unterricht umsetzen.	trifft nicht zu	☐	☐	☐	☐	☐	☐	trifft zu
7.3	Ich habe vor, Anregungen/Inhalte aus dieser Fortbildung langfristig in meinen Unterricht einzubauen.	trifft nicht zu	☐	☐	☐	☐	☐	☐	trifft zu
7.4	Mein Unterricht hat sich durch diese Fortbildung verändert.	trifft nicht zu	☐	☐	☐	☐	☐	☐	trifft zu

7.5 In meinem Unterricht habe ich mindestens eine Anregung/einen Inhalt aus der Veranstaltung ...

☐ einmal eingesetzt.

☐ wiederholt eingesetzt.

☐ Der Einsatz von Anregungen/Inhalten war mir nicht möglich.

7.6 Ich habe Anregungen/Inhalte aus dieser Fortbildung an Kolleginnen/Kollegen weitergegeben.

☐ Ja.

☐ Nein.

7.7 Welche Anregungen/Inhalte dieser Fortbildung haben Sie in Ihrem Unterricht eingesetzt?

7.8 Das half mir Anregungen/Inhalte aus der Veranstaltung in meinem Unterricht umzusetzen: *(z.B.: Seminarunterlagen, Unterstützung Kollegium, …)*	7.9 Das erschwerte/verhinderte es mir Anregungen/ Inhalte aus der Veranstaltung in meinem Unterricht umzusetzen: *(z.B.: Ausstattung der Schule, ich unterrichte diesen Gegenstand derzeit nicht, …)*

10.5. Descriptive analysis of the surveys, structured by items

This subchapter includes the complete descriptive analysis supplementary to the selection demonstrated in Chapter 5.1. For a better clarity, I have structured this subchapter in sequence according to the seven categories of the three surveys (leaving out the category coding, whose purpose was only to assign all three surveys to the same person).

10.5.1. Statements about the participation of the course

Since this research has observed professional development across an extended timeline, I began my study with capturing relevant moments in the time in advance of a course, to avoid influences from the course itself. This means that teachers reported the following statements before the professional development course started.

The first thing I wanted to know was the pre-knowledge of teachers on the topics of the registered course. The results showed that the participants rated their pre-knowledge as good, with a mean of 4.01 on a six-point answer scale (N=569), as shown in Figure 10.1. Some participants checked the figure between two answer options. In such cases, I rated both scales (e.g. 5/+ and 6/++) to receive a representative mean.

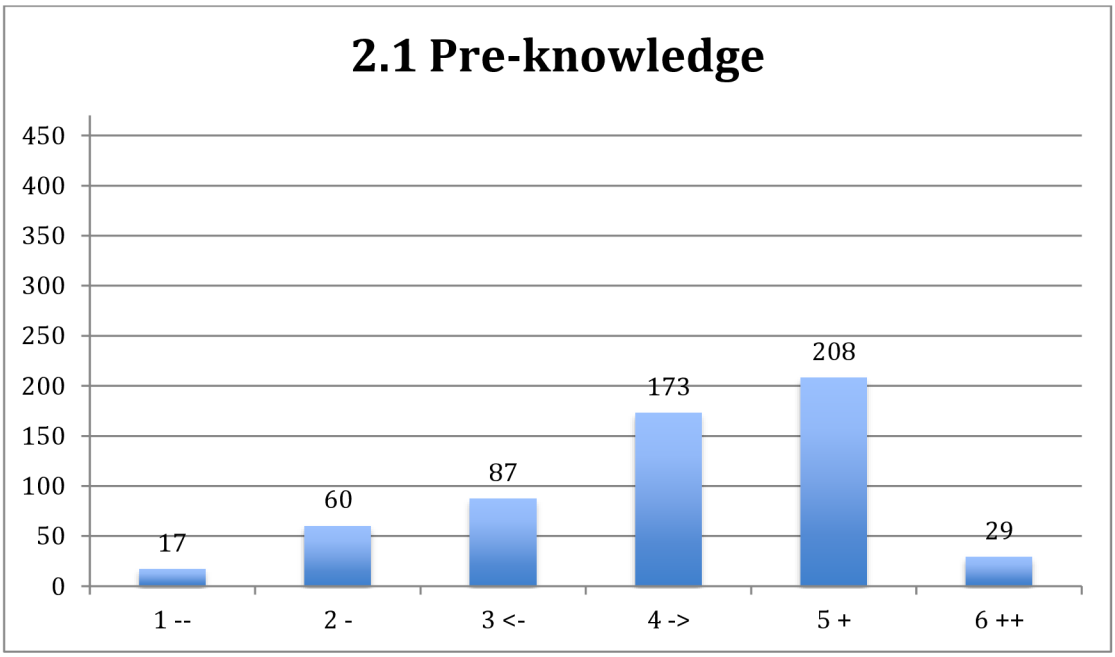

Figure 10.1: Item 2.1. How do you rate your pre-knowledge about the topics of this course? (N=569)

The second question asked the participants if they intend to use ideas or suggestions from the registered course in their classroom (again, without being influenced by course content at that point). Once again, participants had a very high intention of using ideas from the seminars in their classroom with a mean of 5.63 on a six-point-answer-scale (N=573), as illustrated in Figure 10.2.

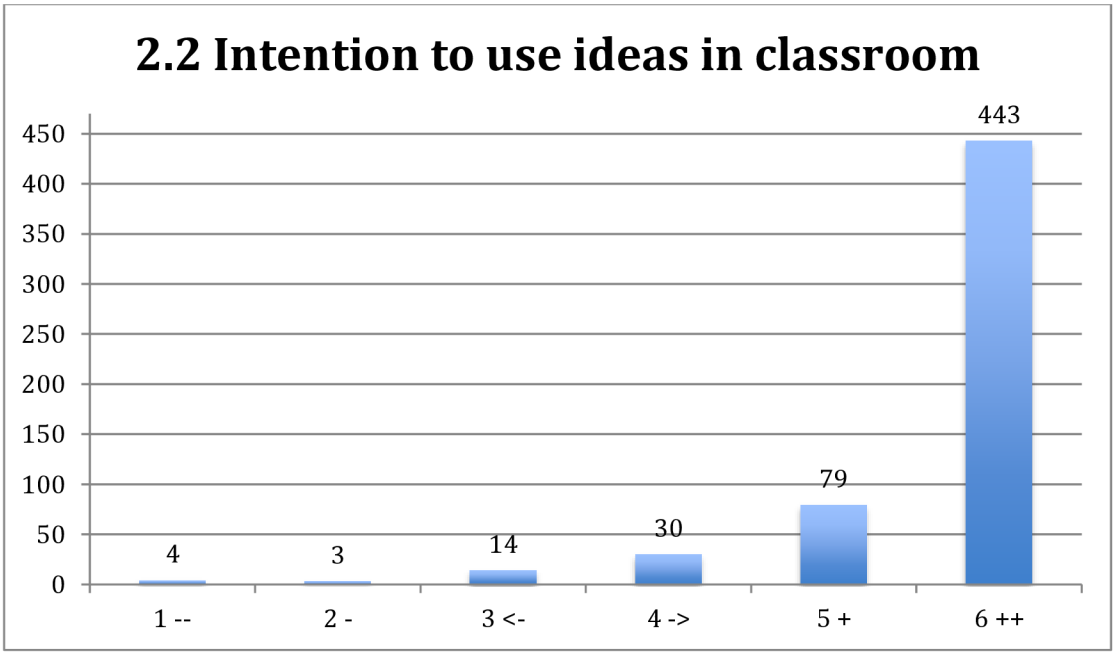

Figure 10.2: Item 2.2. I intend to use suggestions/ideas from this course in my classroom teaching (N=573)

The next item focused on attendance reasons of teachers for the selected course. The participants either chose from four defined answers or selected a fifth one for their own answer. The predefined options included attendance, because of interest in the topic, professionalization motives, especially in the subject English, having to participate (for instance, being sent by principal or supervisory board) and fulfilling requested hours of participation (as state teachers need to). The fifth option was an open field, where participants listed reasons such as the competence of the course instructor, the quality of a similar course, recommendations from colleagues, the location of the course, inspiration for teaching English, etc. It was also possible to select multiple answers. If we interpret the responses shown in Figure 10.3, we can observe a high trend towards participation reasons such as interest in the topic and intention to professionalization.

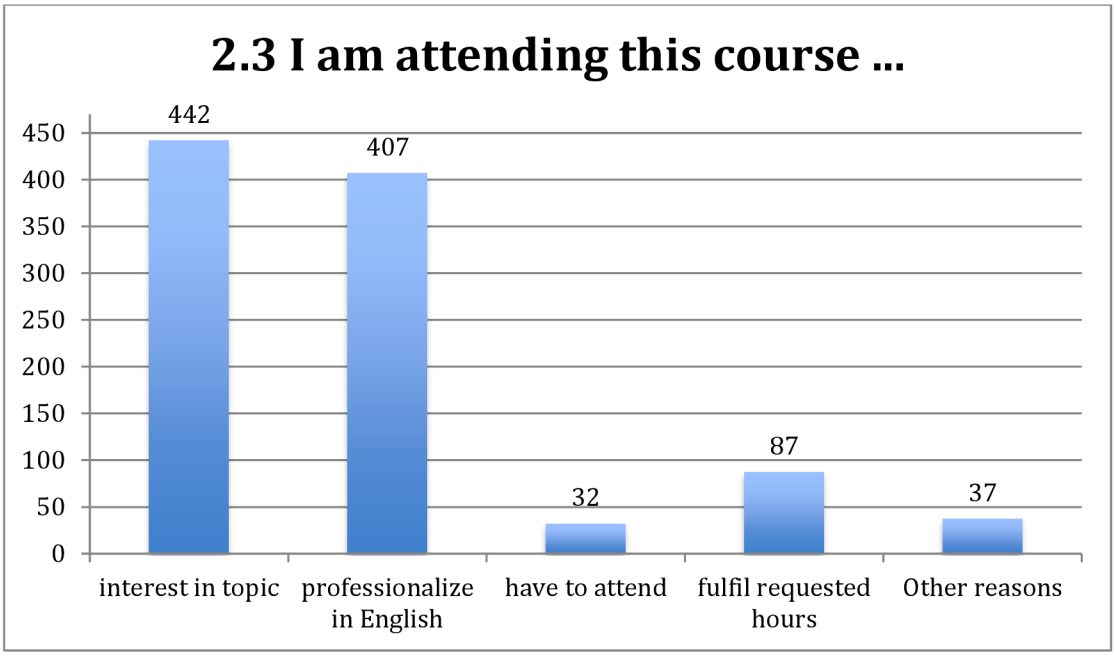

Figure 10.3: Item 2.3. Attendance reason

Since the Vienna Board of Education has introduced the function of English Experts[18] to enhance the quality of English teaching, I wanted to find out more about this group. On the one hand it was interesting to see the distribution of English Experts among course participants, while on the other hand it became relevant to distinguish between teachers who fulfilled this function voluntary and teachers who were duty-bound to do so. This distinction was especially interesting under the aspects of self-determination theory.

Responses of this sample consisted of 264 English Experts (47%) and of 301 teachers (53%), who were not assigned with this function. Figure 10.4 demonstrates that within the group of English Experts almost twice as many became nominated for this function in a voluntary way, in contrast to teachers who were compelled to become an English Expert.

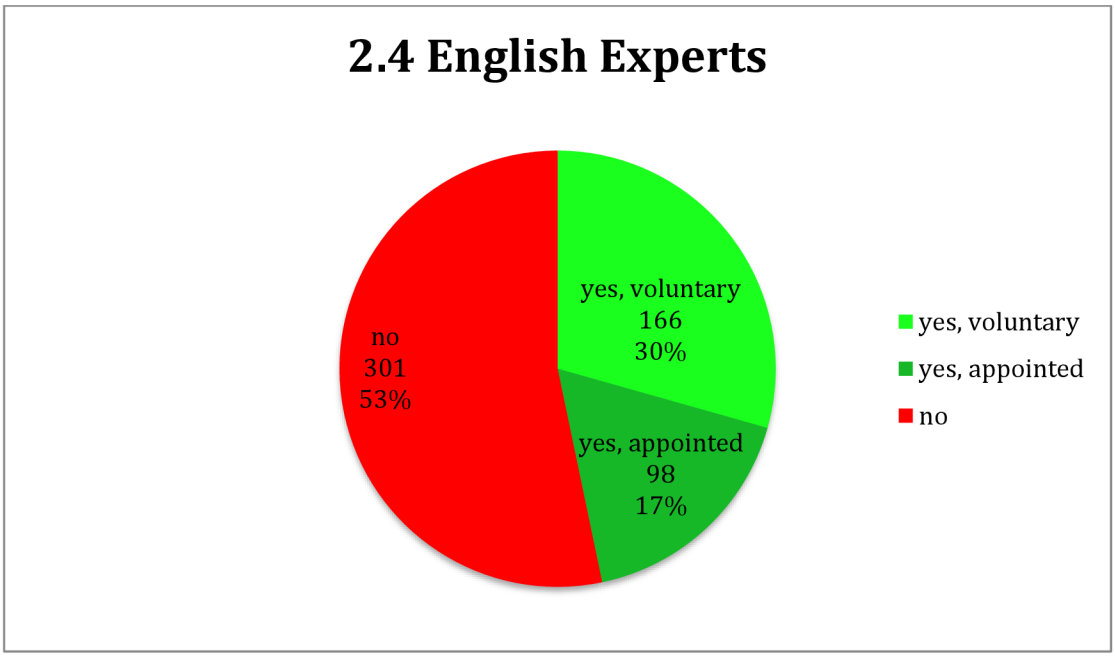

Figure 10.4: Item 2.4. English Experts

[18] English Experts are teachers who participate in a project of the Vienna Board of Education. The goal of it is to provide high quality English lessons. This can be achieved by the use of Expert teachers, who are capable of fulfilling this requirement – for instance by constant professionalization. When the project is complete, all schools in Vienna should have at least one English Expert who is also able to teach in other classes of the school, if colleagues are unable to provide English lessons of the desired quality. However, there are two ways of being assigned to the function of an English Expert, one in a voluntary and the other compulsory (Klein 2014).

In addition to participation reasons, I wanted to investigate the professionalization behaviour of participants. Therefore, it was interesting to identify how many English courses (in addition to the attended one) they had signed up in the respective semester. We can see that even though 149 teachers did not sign up for any other English courses, several others were interested in their professional development in the subject of English (see Figure 10.5). On average, teachers of this sample signed up for around two (2.14) other English courses within the (then) current semester.

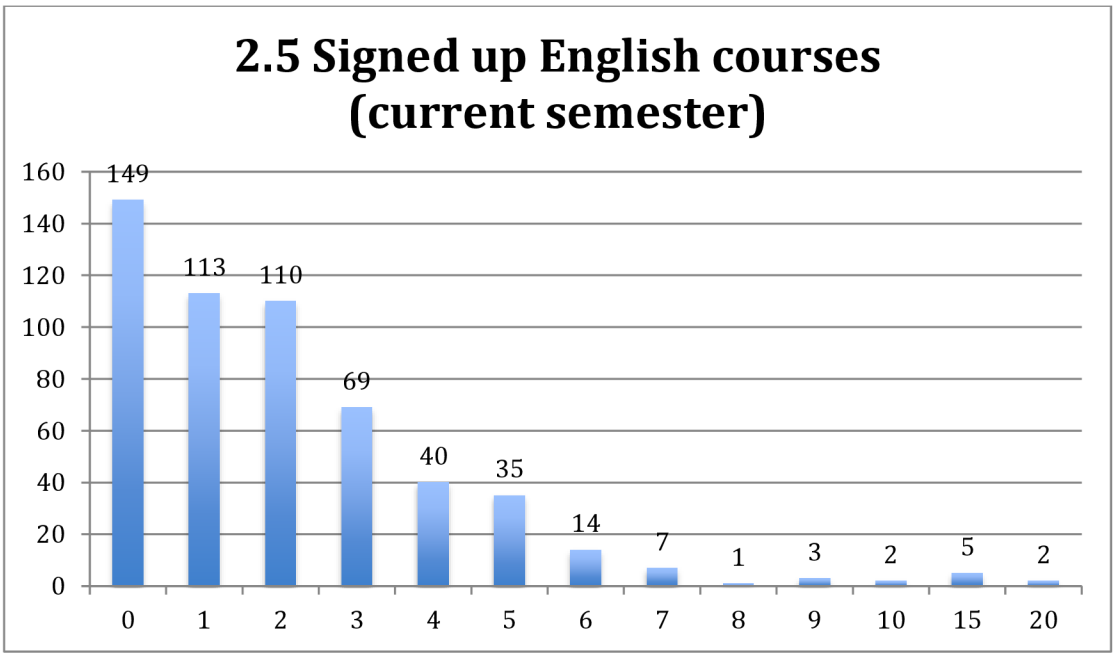

Figure 10.5: Item 2.5. Signed up English courses (in addition to this course) (N=550)

The last statement about participation reasons dealt with the influences upon this decision. These were either effected by the supervisory board or the headmaster, recommended by colleagues/headmaster/supervisory board, derived from an individual's (own) decision, or resulted from other reasons such as being a native speaker teacher, teaching in a school which is part of an English focus program, and so on. It was, once again, possible to select multiple answers.

Despite the different options, we can see (as shown in Figure 10.6) that the majority of teachers perceived their attendance at a seminar as a result of their own decision (79%).

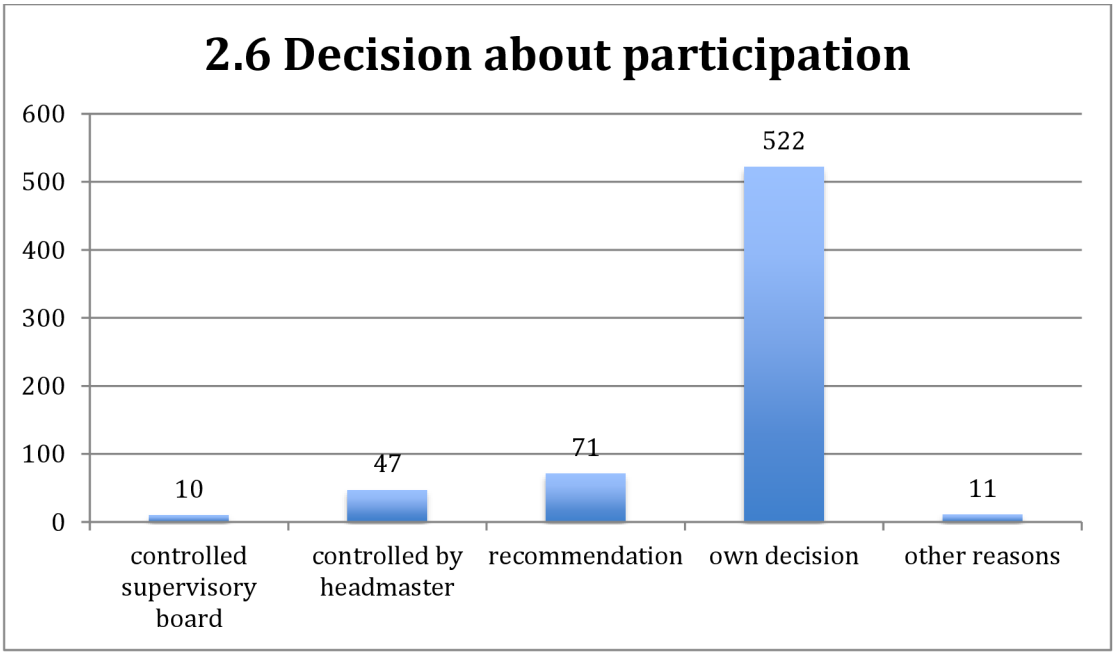

Figure 10.6: Item 2.6. What influenced your decision about participating in this course?

10.5.2. Statements regarding the course

In the next classification I wished to investigate statements related to the course itself. Accordingly, a second survey was handed out after the professional development concluded. The first, and major, part of this survey consisted of teaching quality. Items 4.01 until 4.12 are the inventory from the STUD-FEL, a questionnaire developed by Tillmann et al. (2011), to measure the quality of university courses. The average quality of courses was rated as very high (each item had a mean higher than 5.00 on a six-point answer

scale). However, when we observe the means for each course separately, we can detect differences in the quality of individual items, as well as in the mean of all items, expressed by the teaching quality score (TQS). For a better visual orientation, I left cells with the highest ratings (between 5 and 6) with a white background. Means between 4 and 5 are illustrated by a 15% black background, between 3 and 4 with 35% and between 2 and 3 with a background showing 50% of black.

Results of the winter semester 2016/17 are illustrated in Table 10.1. If we compare the mean of each item, we can observe that four courses (courses 1, 5, 7 and 8) achieved means lower than 5. In the courses 7 and 8 specifically we can see an evidently lower course quality, compared to other courses.

Table 10.1: Course quality of winter semester 2016/17, illustrated by each course

course number	4.01	4.02	4.03	4.04	4.05	4.06	4.07	4.08	4.09	4.10	4.11	4.12	TQS
1 (N=15)	4.93	5.60	5.80	5.71	5.33	5,87	5.87	5.53	5.60	5.53	5.40	5.80	5.58
2 (N=18)	5.44	5.72	5.82	5.56	5.81	5.72	5.78	5.83	5.78	5.89	5.78	5.94	5.74
3 (N=13)	5.77	5.85	5.92	5.92	5.85	6.00	6.00	5.85	5.85	5.92	5.77	6.00	5,89
4 (N=22)	5.73	5.82	5.82	5.64	5.73	5.86	5.73	5.77	5.77	5.77	5.86	5.82	5.78
5 (N=18)	4.83	5.44	5.50	5.61	5.29	5.94	5.39	5.44	5.61	5.59	5.61	5.61	5.49
6 (N=19)	5.37	5.95	5.95	5.68	5.63	5.79	5.95	5.84	5.74	5.79	5.84	6.00	5.79
7 (N=19)	4.74	4.63	2.32	4.95	4.89	5.68	3.58	4.89	4.68	4.78	5.00	5.63	4.64
8 (N=17)	3.76	3.59	4.03	3.24	4.31	5.29	4.18	4.19	4.47	4.44	4.94	5.06	4.28
9 (N=21)	5.19	5.71	5.67	5.81	5.81	5.81	5.62	5.75	5.81	5.52	5.62	5.86	5.68

10 (N=8)	5.00	5.63	5.88	5.38	5.25	5.88	5.88	5.88	5.75	5.75	5.75	6.00	5.67
11 (N=10)	6.00	6.00	6.00	6.00	6.00	6.00	5.90	5.90	6.00	6.00	6.00	6.00	5.98
12 (N=17)	5.47	5.12	5.13	5.53	5.47	5.71	5.59	5.29	5.00	5.29	5.59	5.71	5.41
13 (N=22)	5.91	5.86	6.00	6.00	5.95	5.95	5.86	5.91	5.86	5.95	5.91	6.00	5.93
14 (N=12)	5.58	5.83	5.92	6.00	5.67	6.00	5.67	5.92	6.00	5.83	5.75	6.00	5.85
15 (N=15)	5,87	5,80	5,93	5,87	5,87	6,00	6,00	5,80	5,80	5,93	5,33	6,00	5,85
16 (N=8)	5,63	5,75	5,88	5,88	5,88	6,00	6,00	5,75	5,88	6,00	5,75	6,00	5,86
17 (N=10)	5,30	6,00	5,60	5,90	6,00	5,90	5,90	6,00	6,00	6,00	5,90	5,90	5,87
Means (N=264)	5,31	5,51	5,41	5,54	5,56	5,83	5,52	5,59	5,58	5,61	5,62	5,82	5,57
Std. Deviation	1.086	0.931	1.287	0.999	0.931	0.577	1.133	0.843	0.800	0.823	0.795	0.601	0.703

When we compare the courses of winter semester 2017/18, we can detect eight courses (course 23, 24, 27, 28, 29, 30, 33 and 39) with items rated lower than 5 (see Table 10.2). However, two courses (course 23 and 27) significantly differ from the ratings of other courses.

Table 10.2: Course quality of winter semester 2017/18, illustrated by each course

course number	4.01	4.02	4.03	4.04	4.05	4.06	4.07	4.08	4.09	4.10	4.11	4.12	TQS
18 (N=16)	5.31	5.88	5.88	5.69	5.75	5.94	5.50	5.69	5.81	5.88	5.69	6.00	5.75
19 (N=17)	5.12	5.53	5.53	5.76	5.65	6.00	5.88	5.47	5.53	5.47	5.65	6.00	5.63
20 (N=15)	5.60	5.67	6.00	5.60	5.87	5.93	5.93	5.93	5.93	5.73	5.80	6.00	5.83
21 (N=18)	5.50	5.72	5.71	5.53	5.61	5.89	5.83	5.78	5.83	5.72	5.83	5.94	5.74
22 (N=11)	5.64	5.73	5.10	5.73	5.55	6.00	5.64	5.82	5.73	6.00	6.00	6.00	5.73
23 (N=15)	3.87	4.40	3.07	4.87	5.13	5.07	4.14	4.57	4.40	4.08	4.80	4.93	4.44
24 (N=10)	5.20	5.10	5.00	4.90	5.60	5.70	5.70	5.50	5.20	5.30	5.50	5.60	5.36
25 (N=9)	5.56	5.78	6.00	5.78	5.89	6.00	6.00	5.89	5.89	6.00	5.89	6.00	5.88
26 (N=9)	5.56	5.89	5.89	5.56	6.00	5.88	5.89	5.89	5.88	5.89	5.67	6.00	5.83
27 (N=15)	4.33	4.47	4.80	4.67	5.00	5.67	5.07	4.80	4.93	4.60	5.47	5.60	4.94
28 (N=11)	4.73	5.50	5.91	5.82	5.89	5.91	5.91	5.82	5.45	5.64	5.64	5.91	5.66
29 (N=10)	4.30	4.90	5.30	5.90	5.50	5.90	5.60	5.60	5.80	5.50	5.40	6.00	5.48
30 (N=16)	4.69	5.25	5.75	5.56	5.75	5.81	5.63	5.25	5.38	5.33	5.44	5.63	5.45
31 (N=22)	5.45	5.64	5.86	5.59	5.67	5.95	5.68	5.77	5.73	5.86	5.82	5.95	5.75
32 (N=9)	5.11	5.00	5.33	5.56	5.67	5.89	6.00	5.78	5.44	6.00	5.78	5.89	5.60
33 (N=16)	4.88	5.69	5.81	5.69	5.60	5.69	5.75	5.88	5.81	5.69	5.38	5.88	5.64
34 (N=12)	5.92	6.00	6.00	6.00	6.00	6.00	5.83	6.00	6.00	6.00	6.00	6.00	5.98
35 (N=13)	5.77	5.92	6.00	5.77	5.83	6.00	6.00	6.00	6.00	6.00	6.00	6.00	5.94
36 (N=8)	5.75	5.75	5.75	5.63	5.63	6.00	5.88	5.88	6.00	5.88	5.88	6.00	5.83
37 (N=20)	5.30	5.50	5.50	5.50	5.45	5.75	5.35	5.35	5.55	5.55	5.50	5.70	5.50
38 (N=9)	5.67	5.78	5.78	5.78	6.00	6.00	6.00	6.00	5.89	6.00	6.00	6.00	5.91
39 (N=11)	5.00	5.27	5.50	5.27	4.91	5.45	5.82	5.45	5.36	5.45	5.64	5.91	5.41
40 (N=7)	5.00	5.29	5.71	5.33	5.14	5.86	6.00	6.00	6.00	6.00	5.86	6.00	5.69
Means (N=299)	5.17	5.46	5.52	5.54	5.60	5.83	5.66	5.62	5.61	5.60	5.66	5.85	5.59
Std. Deviation	1.155	0.912	1.015	0.868	0.832	0.525	0.864	0.837	0.859	0.842	0.741	0.550	0.659

Besides the course quality, I was also interested in the motivation of participants in transferring learned content in their classroom teaching, at the moment when they left the attended course with ideas. The results, shown in Figure 10.7, demonstrate that this motivation was very high at the end of a course. Owing to this, 82% of the teachers reported a very high motivation (rated this item with 6 on a six-point-answer-scale) and 96.4% had the intention of transferring ideas or suggestions to their classroom teaching (ratings 4-6). The mean of 5.68 reflects these highly rated results of item 4.13.

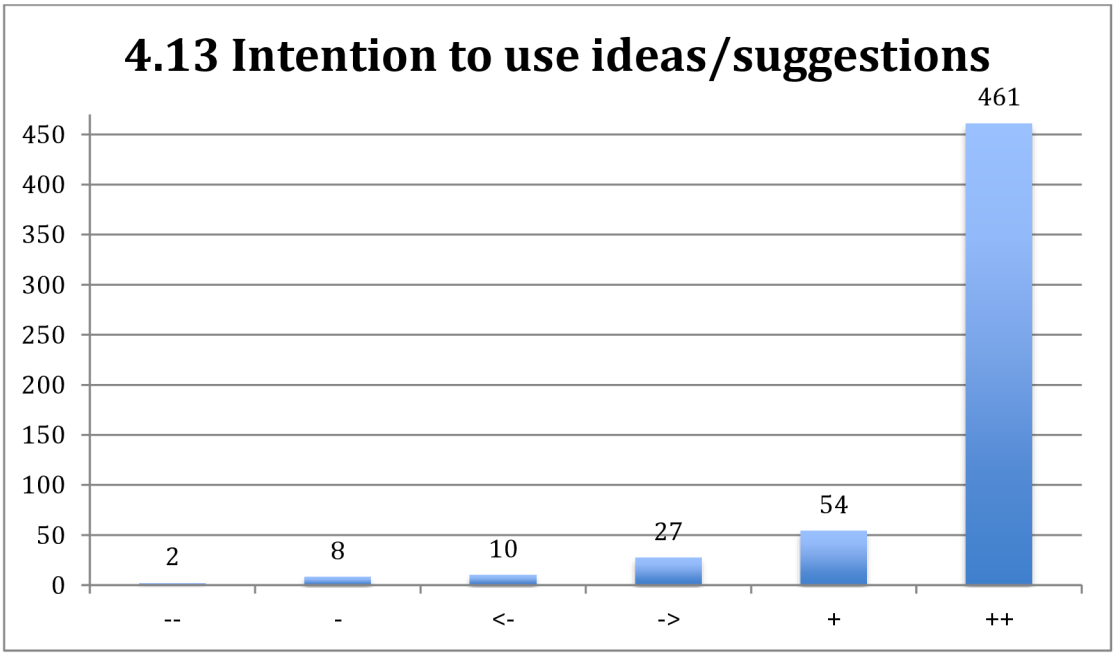

Figure 10.7: Item 4.13. I intend to use suggestions/ideas from this course in my classroom teaching (N=561)

The last statement of this classification refers to the current state of knowledge at the end of a course. A self-evaluation illustrates that 28.3% of the participants rated their knowledge as very high, with 53.4% still rating it as high (see Figure 10.8). Clustered ratings show that 95.7% tended to evaluate their knowledge as high (ratings 4-6), whereas only 4.3% tended to rate themselves as having low knowledge at the end of the course (ratings 1-3). This means that on average, participants perceived their knowledge as high (mean = 4.98 on a six-point-answer-scale). If we compare the knowledge between the first and the second measurement points (MT_1 before the course, shown in Figure 10.1 and MT_2 after the course), we can identify an increase in the mean of 0.97 (almost one point of the scale).

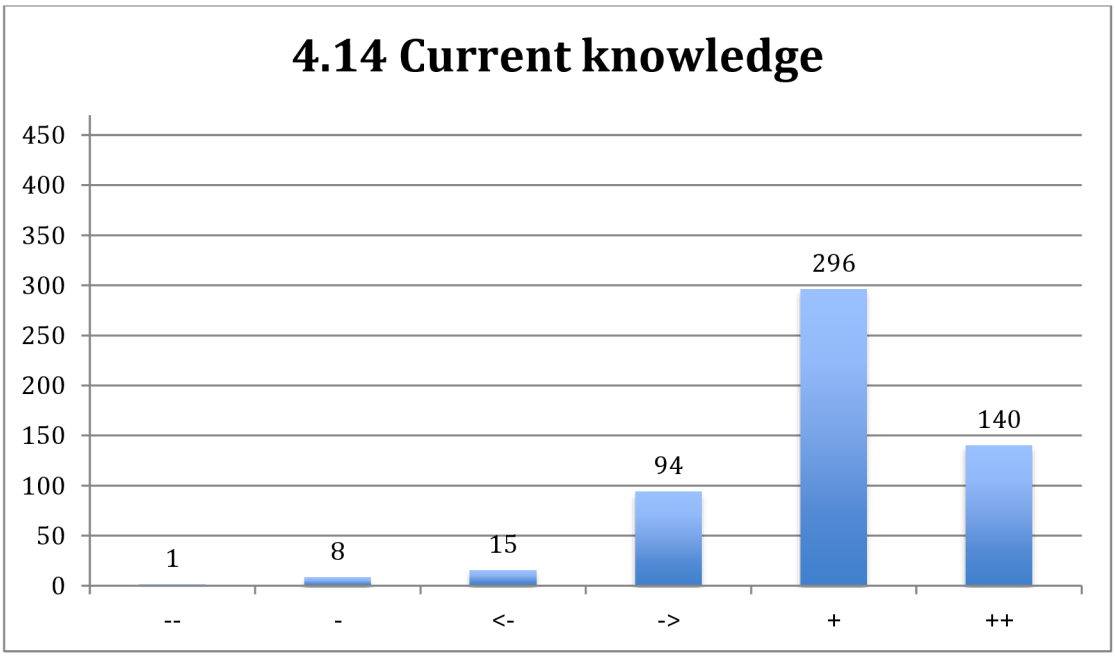

Figure 10.8: Item 4.14. How do you rate your current knowledge about topics of this course? (N=546)

10.5.3. Perspectives

Recommendations for an attended course are often another good indicator for individual satisfaction with the course. Accordingly, teachers were asked if they recommend the course attended or not. The results of this question was very clear. Almost all teachers recommended the attended course (97%), as we can see in Figure 10.9.

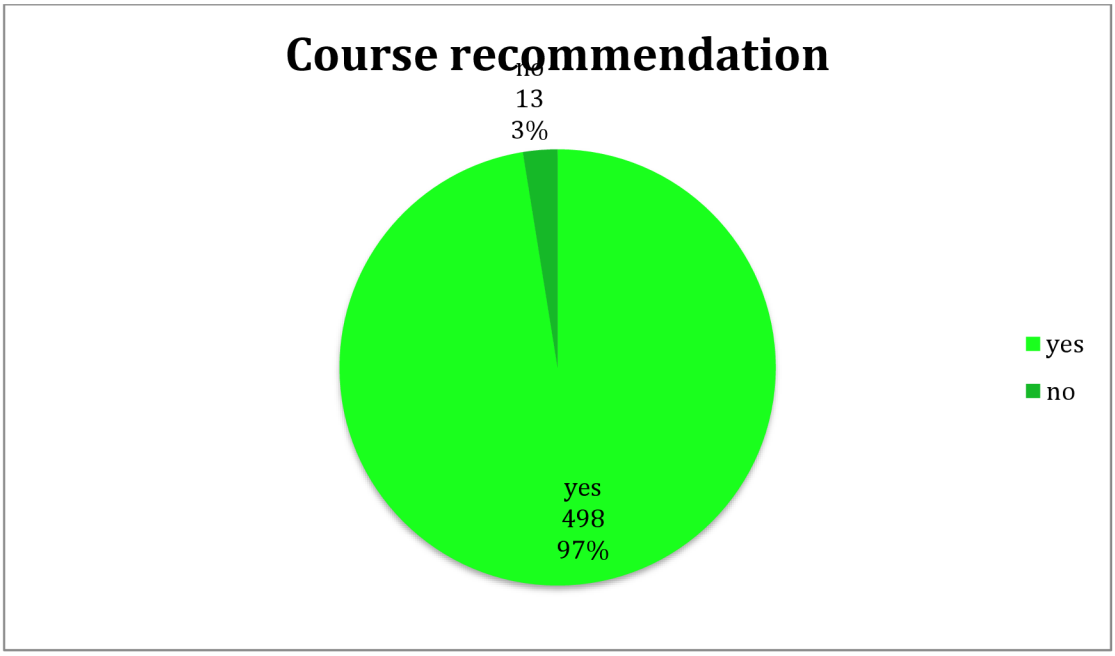

Figure 10.9: Item 5.2. Would you recommend this course? (N=511)

10.5.4. Statements about realization

Lastly, the final classification encapsulates the core of this research, which is the realization of learned content in the field of work (classroom teaching). For this reason, I launched the third survey with another self-evaluation of the current knowledge about course related topics. The results showed that six weeks after the seminar, 16% of the participants rated their knowledge as very high (++) with 57.2% still reporting high (+) knowledge (see Figure 10.10). In summary, 96.3% tended to rate themselves as having high knowledge of topics discussed in a course, whereas only 3.7% tended to have poor knowledge of it. The mean of this item was 4.83, which is a slight decrease of 0.15 points from right after the seminar to six weeks later (compare Figure 10.1 with Figure 10.8 for the increase/decrease of the mean of knowledge throughout the study).

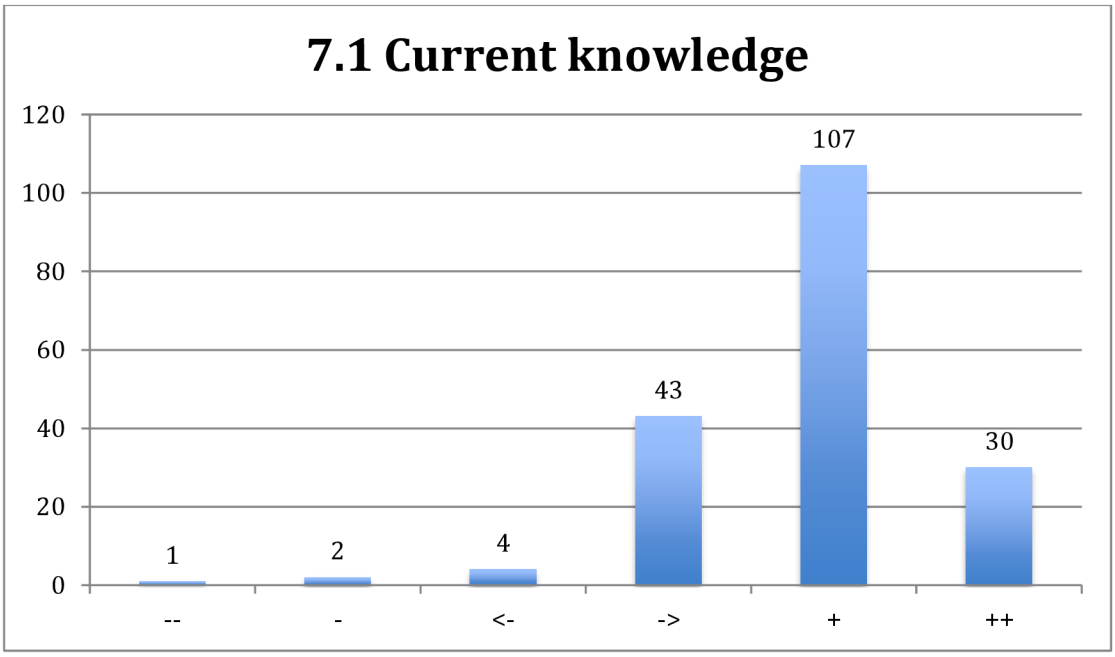

Figure 10.10: Item 7.1. Current knowledge (N=187)

The crucial question was how the study performed in terms of transferring ideas or suggestions to classroom teaching. Results showed that 31.5% of the participants shifted their ideas very well from the course to their classroom teaching (rated the statement in Figure 10.11 with 6) with 39.8% still agreeing highly with this statement (rated item 7.2 with 5 on a six-point answer scale). If we look at the results from a more general perspective, we can see that 89% tended to implement ideas in their classroom teaching (ratings 4-6), whereas 11% tended not to do so (ratings 1-3). The mean of this sample (4.81 on a six-point answer scale) demonstrates the substantial support of this statement.

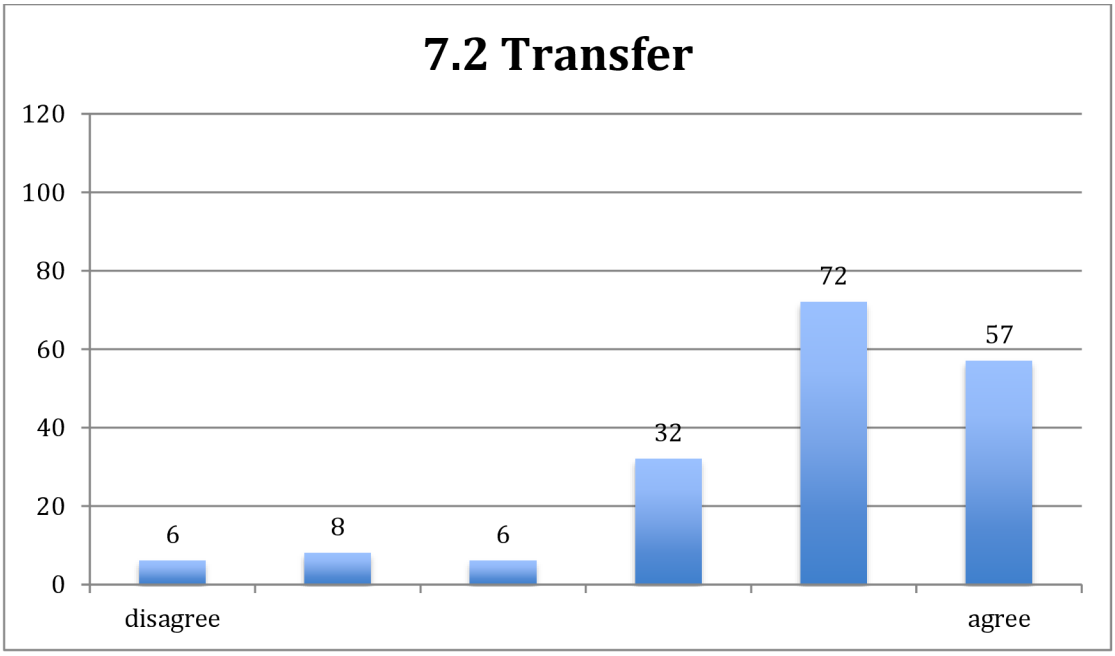

Figure 10.11: Item 7.2. I used a lot of suggestions/ideas from this course in my classroom teaching (N=181)

Even though long-term effects have not been measured per se, tendencies towards such persistence were captured. The participants were asked if they intended to use suggestions or ideas from a course attended on a long-term in their teaching. As we can see in Figure 10.12, 51.1% agreed entirely with this statement (rated this item with 6) and 32.6% still agreed (a rating of 5 on it) with it. From a general perspective we can say that 94.7% intended to use suggestions/ideas on a long-term (ratings 4-6), whereas 5.3% intended not to do so (ratings 1-3). The mean of this item was even higher than for the transfer (item 7.2) with 5.22 on a six-point answer scale.

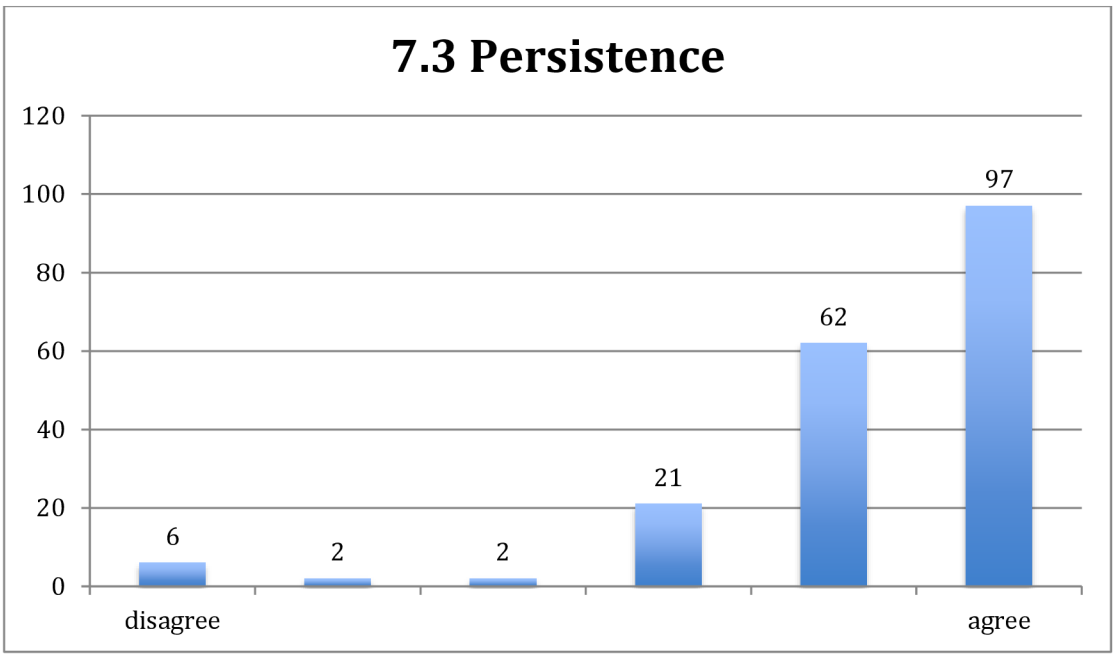

Figure 10.12: Item 7.3. I intend to use suggestions/ideas from this course long-term in my teaching (N=181)

Following these findings I wished to discover whether the impact of the course would possibly also change the teaching of participants. In contrast to a simple transfer (short or long term), it requires a lot to modify a person's behaviour. As results show, this item did not display similar results to the items 7.2 and 7.3, but still showed remarkable ratings (see Figure 10.13). Results showed that 17.8% of the participants experienced a high degree of change in their teaching (rated this item with 6), 31.4% merely agreed with the statement of this item (rating 5), 29.7% had a tendency to agree with it (rating 4), whereas 10.27% did not change their teaching behaviour at all (rating 1). Speaking more generally, 78.9% felt a change in their teaching behaviour (ratings 4-6), whereas 21.1% tended to continue to teach as they were used to (ratings 1-3). The mean of 4.18 on a six-point answer scale indicates a slight tendency to changed behaviour of the teachers, owing to course participation.

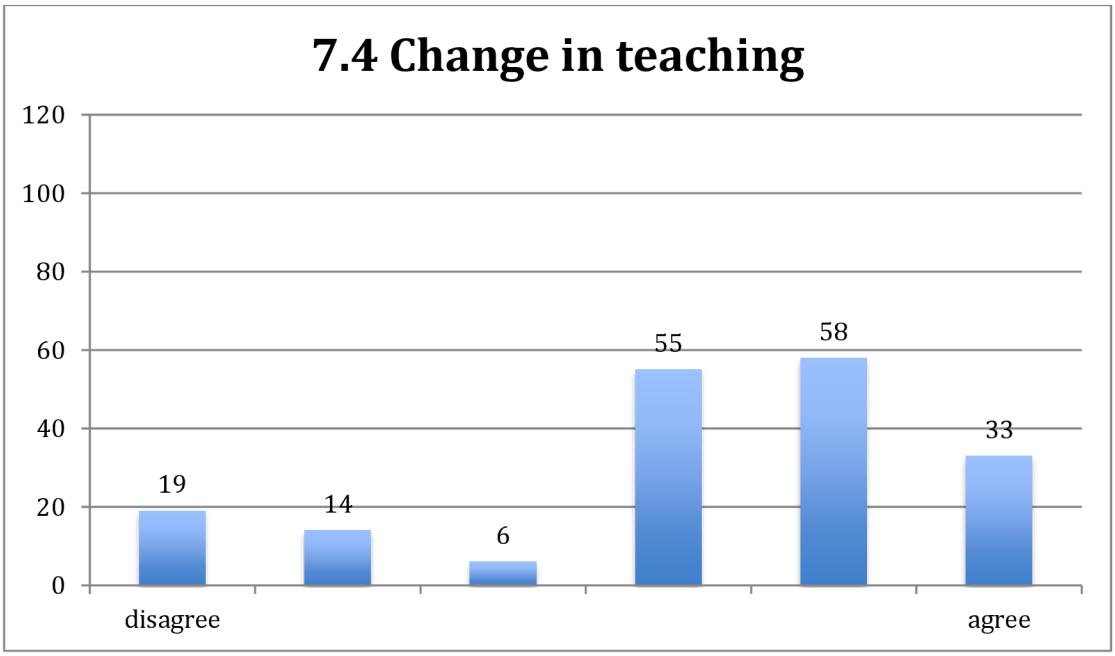

Figure 10.13: Item 7.4. My teaching has changed thanks to this course (N=185)

After finding out if teachers used suggestions or ideas from a course in their classroom teaching I wanted to discover how often such an implementation takes place. The quantitative description of item 7.5 explains that 60.8% had used suggestions or ideas from the attended course repeatedly, whereas 24.7% had implemented them only once in their classroom teaching. However, 14.4% reported that it was not possible to use them (see Figure 10.14).

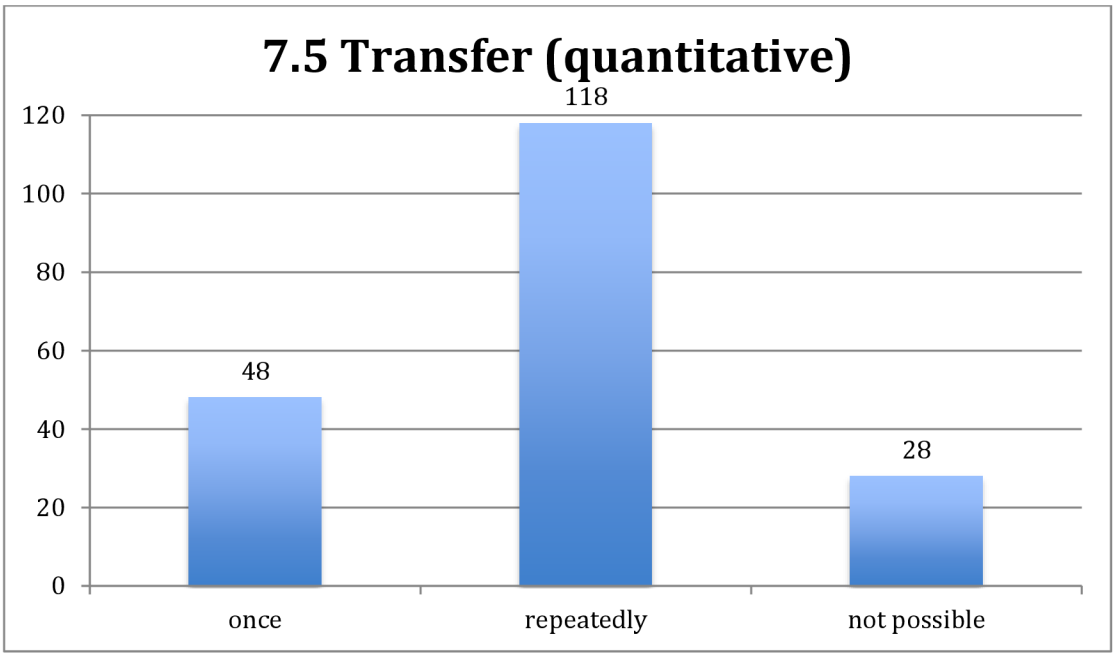

Figure 10.14: Item 7.5. Quantitative use of suggestions/ideas in the classroom (N=194)

The last closed question of the third survey focused on the act of idea-sharing between colleagues. Results from this item showed that most of the teachers (three quarters) shared ideas from an attended course with their colleagues, whereas 25% did not share them (see Figure 10.15).

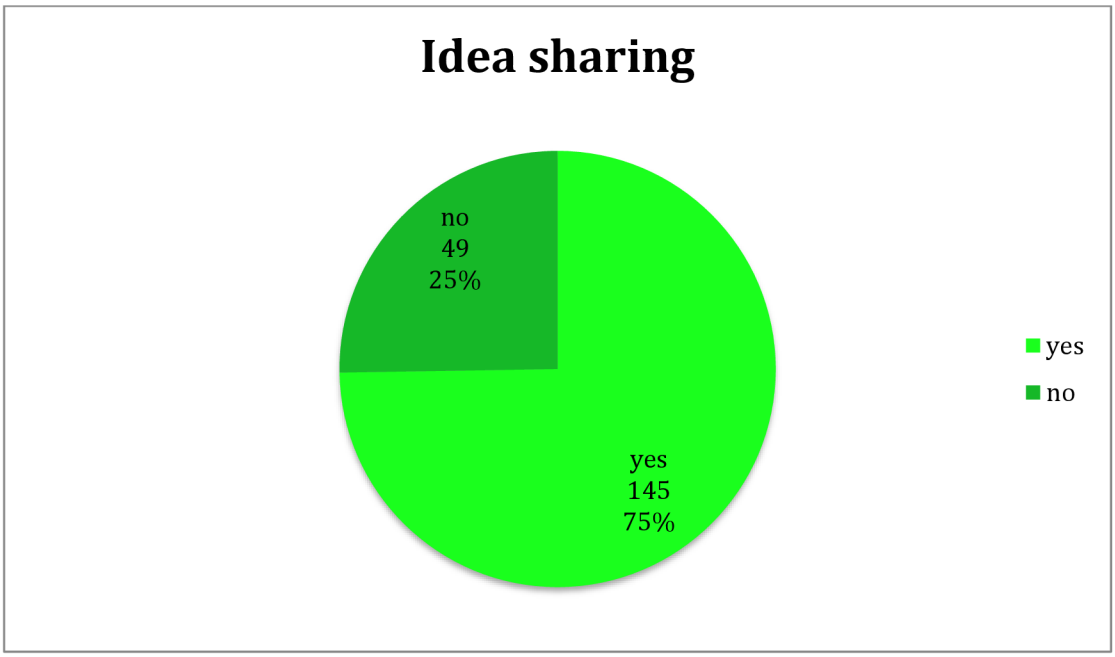

Figure 10.15: Item 7.6. I shared suggestions/ideas of this course with colleagues (N=194)

10.6. Qualitative Research: Interview guideline

Introduction

Thank you for taking the time to participate in this interview today.
Our conversation is certainly subject to data privacy and therefore all personal data will be made anonymous within my scientific work.

At the beginning, I'd like to ask you if you agree to the recording and processing of this interview for the purpose of my dissertation?

Reply: _____

Thank you for your support. As you briefly know, I am investigating the field of professional development and I am therefore interested in your personal experiences within this field.

Subject area 1: Statistical data

1.) Can you tell me for how many years you are working as a teacher until now?
2.) In how many different schools did you teach during that time?

Subject area 2: Individual attitude towards professional development

3.) What does professionalization mean for you?
4.) What ways do you use to professionalize yourself?
5.) Can you tell me how many professional development courses you attended during this school year and talk a little about your criteria for choosing such courses?
6.) What were your expectations on these courses, and have they been fulfilled?
7.) Why do you attend professional development courses, and what significance does professional development have for you?

Subject area 3: Social work environment

8.) Can you describe the atmosphere that you experience in your school and your relation to your working colleagues and to your headmaster?

If not mentioned, ask:

- How do you experience your social relationship with your colleagues, headmaster, etc.?

- If worked at different schools – how was the social work environment different/alike?

- How would you describe the management style of your headmaster (authoritarian, cooperative, laissez-faire, …)?

- Do you have team meetings with your colleagues (besides the school conferences)?

- Do you feel involved in decisions (from headmaster but also in the team you are working)

9.) Did you already have to sign up for a specific professional course so far, because someone told you so?

10.) If you compare a voluntary with a forced participation – what would you say are the differences as a participant of a course and in transferring learnt content in your classroom teaching?

Subject area 4: Connection between social work environment and professional development

11.) Do your working colleagues give you recommendations for your professional development courses, suggest any courses, topics or certain course instructors to you?

If not mentioned, ask:

- Can you elaborate on your personal experiences?

12.) Has your headmaster ever suggested or even made you participate in a certain course?

If not mentioned, ask:

- Can you elaborate on your personal experiences?

- In what situations did your headmaster make you participate?

Subject area 5: Participants' explanation about statistical results of my study

13.) During my studies, I asked participants of a professional development course about their attendance reasons, which came primarily from interest in the topic and personal motivation for professionalization (show figure 10.16).

However, would you say that it makes a difference, what kind of motivation you go into a course and as a result if you further use ideas from this course or not?

If not mentioned, ask:

- Do you have examples of personal experience?

14.) Are you familiar with the expression English Expert from the Vienna Board of Education?

If answer is no:

Teachers, who are approved by the Vienna Board of Education to teach English in a high qualitative way. They are supposed to professionalize themselves continuously and they should teach English in several classes of their school (if other colleagues can't provide such high qualitative English teaching) to ensure the quality of this subject.

In terms of English Experts, we can see that there's also a good number of teachers (almost 100) who were appointed to that position (show figure 10.17 and cross tab). Statistical data revealed that voluntary English Experts reported higher transfer rates than appointed ones.

What is your explanation for this phenomenon?
If not mentioned, ask:
- Do you have personal experiences in the field of work with motivation and action?

15.) Another finding of my study was that a lot of teachers share ideas from a seminar with their working colleagues (show figure 10.18 and cross tab). As we can see, teachers who shared ideas also reported higher transfer rates.
How do you see the connection between idea sharing and using ideas in the own classroom from your personal experience?

If not mentioned, ask:
- Does the atmosphere between working colleagues impact processes like the implementation of course ideas?

Interview closure:

16.) At the end of our interview I'd like to know from your experience, what is relevant for a successful or not successful transfer of content from a professional development course to classroom teaching?

If not mentioned, ask:
- Do colleagues/does your headmaster/your learning environment influence this act?

Would you like to add something to our interview?

Thank you so much for your support.

After the interview:

Make notes about impressions!

Statistical charts and cross tabs

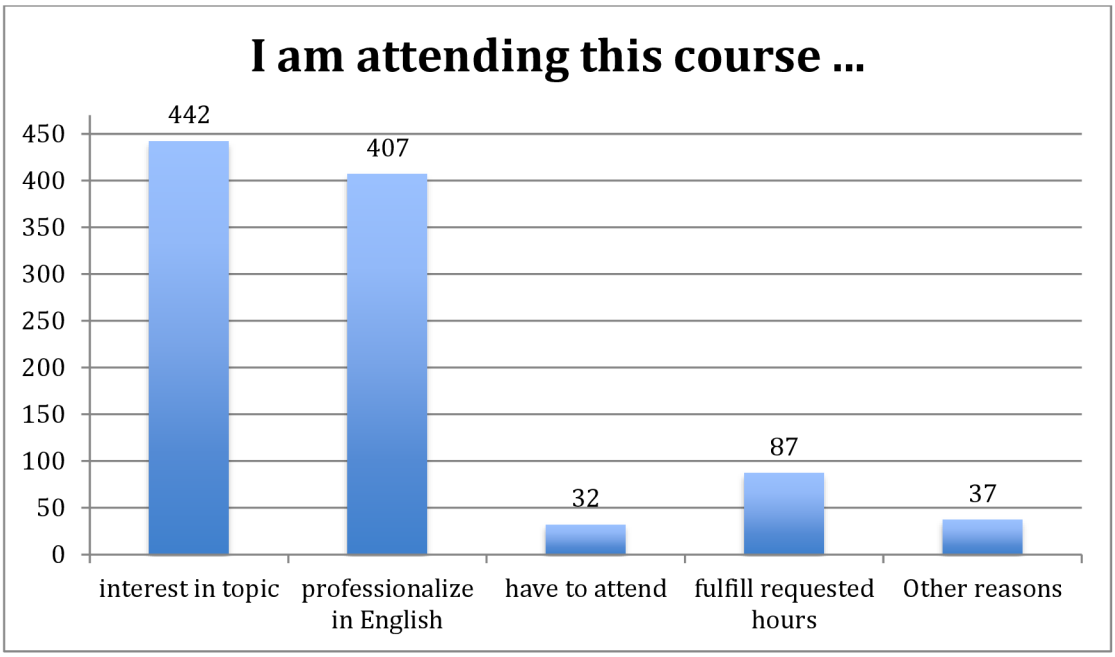

Figure 10.16: Attendance reasons

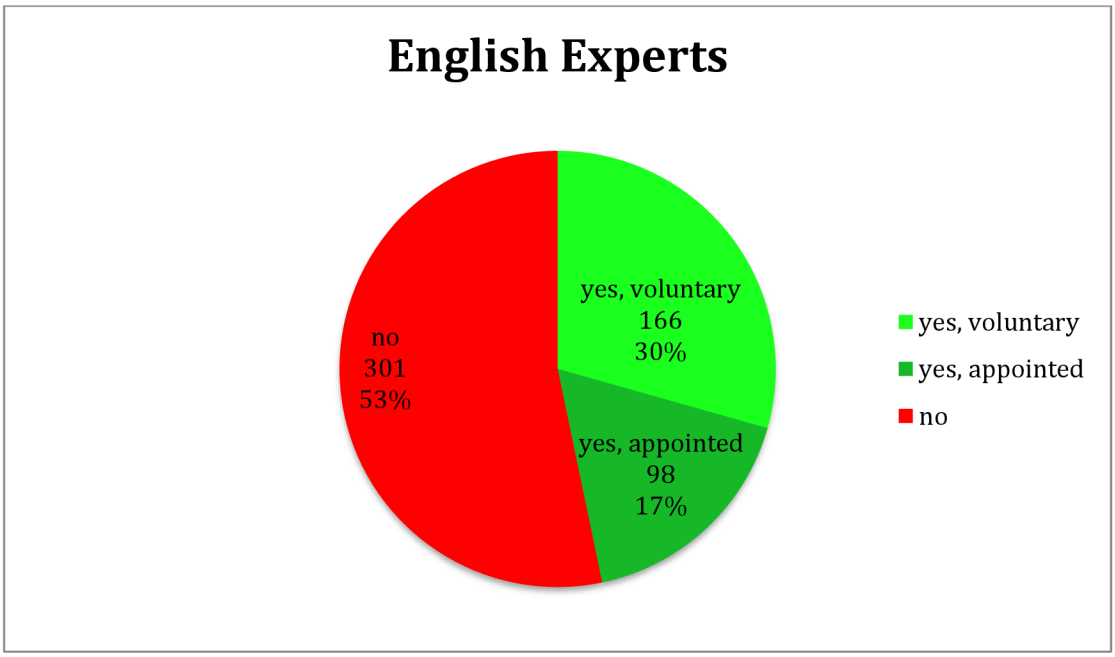

Figure 10.17: Distribution English Experts

Table 10.3: Crosstab between type of nomination and transfer processes*

			7.2 Transfer						
			1 -- do not agree at all	2 -	3 <-	4 ->	5 +	6 ++ agree entirely	Total
English Experts	Voluntary	Count			0	8	21	29	58
		Percent				13.8	36.2	50.0	100.0
	Controlled	Count			1	7	7	3	18
		Percent			5.6	38.9	38.9	16.7	100.0
			7.3 Persistence						
			1 -- do not agree at all	2 -	3 <-	4 ->	5 +	6 ++ agree entirely	Total
English Experts	Voluntary	Count	1		0	2	16	41	60
		Percent	1.7		0.0	3.3	26.7	68.3	100.0
	Controlled	Count			1	4	4	9	18
		Percent			5.6	22.2	22.2	50.0	100.0

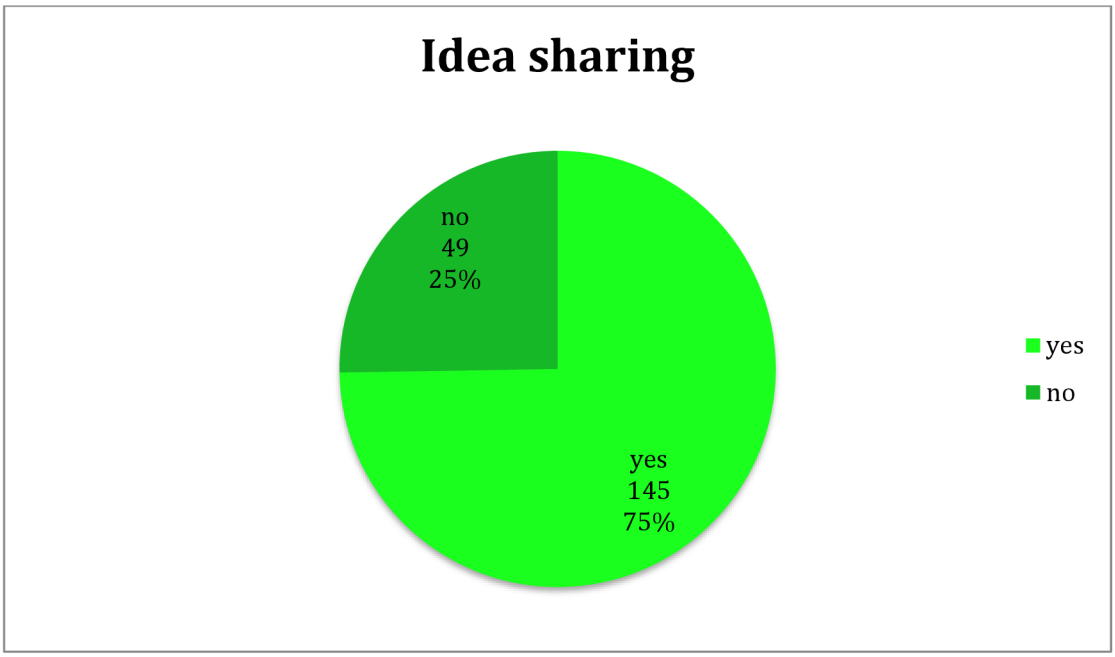

Figure 10.18: Idea sharing

Table 10.4: Crosstab between idea sharing and transfer processes*

			7.6 Idea sharing					
			Yes	No	Total		Yes	No
7.2 Transfer	1 disagree	Count	1	3	4	1-3 Count	2	7
		Percent	0.8	7.9	2.5			
	2 -	Count	0	1	1			
		Percent	0.0	2.6	0.6	1-3 Percent	1.6	18.4
	3 <-	Count	1	3	4			
		Percent	0.8	7.9	2.5			
	4 ->	Count	18	9	27	4-6 Count	122	31
		Percent	14.5	23.7	16.7			
	5 +	Count	54	17	71			
		Percent	43.5	44.7	43.8	4-6 Percent	98.4	81.6
	6 totally agree	Count	50	5	55			
		Percent	40.3	13.2	34.0			
Total		Count	124	38	162		124	38
		Percent	100.0	100.0	100.0		100.0	100.0