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Pilot study on the learning success of students in service-learning compared to other teaching and learning formats

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Pilot study on the learning success of students in service-learning compared to other teaching and learning formats

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Abstract English

The world is increasingly characterized by global and national disasters and crises. To cope with these, social cohesion is indispensable—and this in turn requires that young people are taught how to become responsible citizens. Strengthening students' personal development and social commitment are therefore key responsibilities of universities. Service-learning is one possibility to integrate these into teaching and learning, however studies on the effectiveness of service-learning in Europe—and especially in Germany—are rare. This paper examines the effects of service-learning, whereby three different study groups are compared. The study includes n=132 bachelor and master students, and shows that the groups' outcomes hardly differ from one another. It can tentatively be said that there are only minor differences between the formats and that service-learning is equal to more traditional teaching-learning formats, but again is not superior with regard to the variables investigated.

Abstract Deutsch

Die Welt ist zunehmend von globalen und nationalen Katastrophen und Krisen geprägt. Um diese zu bewältigen, ist sozialer Zusammenhalt unabdingbar - der wiederum setzt voraus, dass junge Menschen zu verantwortungsvollen Bürgern erzogen werden. Die Stärkung der Persönlichkeitsentwicklung und des gesellschaftlichen Engagements der Studierenden ist daher eine zentrale Aufgabe der Hochschulen. Service-Learning ist eine Möglichkeit, diese in die Lehre und das Lernen zu integrieren. Studien über die Wirksamkeit von Service-Learning in Europa - und insbesondere in Deutschland - sind jedoch rar. Die vorliegende Arbeit untersucht die Auswirkungen von Service-Learning, wobei drei verschiedene Studiengruppen verglichen werden. Die Studie umfasst n=132 Bachelor- und Masterstudenten und zeigt, dass sich die Ergebnisse der Gruppen kaum voneinander unterscheiden. Die Ergebnisse deuten darauf hin, dass es nur geringe Unterschiede zwischen den Formaten gibt und dass Service-Learning den traditionelleren Lehr-Lern-Formaten gleichwertig, aber wiederum nicht überlegen ist, was die untersuchten Variablen betrifft.

Table of Contents

1	Introduction.....	4
2	Theoretical Framework.....	4
2.1	Service-learning as a teaching-learning format	4
2.2	Service-learning in Europe and Germany.....	5
2.3	Effectiveness of service-learning.....	5
2.4	Research Questions	7
3	Methodology	7
3.1	Context	7
3.2	Execution of the study.....	7
3.3	Participants.....	7
3.4	Instruments and data sources.....	8
4	Findings.....	9
4.1	Research question 1: What objective learning outcomes do students achieve in the different teaching-learning formats?	9
4.2	Research question 2: How does each teaching-learning format (service-learning, project work, lecture) influence students' self-efficacy, subjective learning outcomes, and perceived usefulness?	10
4.3	Research question 3: What are students' subjective perspectives on the different teaching-learning formats?	10
5	Discussion	12
6	Limitations and Future Research	14
7	References	15

List of Tables

Table 1:	Group characteristics.....	8
Table 2:	Evaluation of the project proposals.....	9
Table 3:	Descriptive data for self-efficacy, subjective learning outcomes, and perceived usefulness.....	10

1 Introduction

Service-learning is a teaching-learning format which combines civic engagement and academic learning. Students' vocational learning takes place in a socioeconomic and society-promoting context in which the students contribute the knowledge gained on a voluntary basis. This course format can be carried out with a community partner (NGO or NPO) in order to enhance the practical relevance. The students are committed to the common good and do something for others or society. The projects the students complete are part of a course and closely linked to subject-specific learning. During the course, they regularly reflect on their experiences in the community (Hochschulnetzwerk Bildung durch Verantwortung/AG Qualität, 2019; National Youth Leadership Council, 2008). In the past decade, service-learning as a teaching-learning format has also become established at European—and especially German—universities. Initially, service-learning was only used by autodidacts. There was hardly any further training or even research on service-learning in Germany (Hofer & Derkau, 2020). Only in recent years have individual researchers and research groups conducted accompanying research (for Germany, e.g., Gerholz, Liszt, & Klingsieck, 2015; Reinders, 2016). In the meantime, there are well-established networks both in Europe and in Germany, which see their task in anchoring service-learning as a method at universities and finding teachers enthusiastic about this format. Due to the initial lack of research in Europe and Germany, findings from US American research were often used. However, the different university systems and social situations mean that these findings can only be transferred to the European and German contexts to a limited extent.

In this study, students from different disciplines at an university of Applied Sciences are examined. Frankfurt University of Applied Sciences is based in a metropolis in the center of Germany. It had 15,626 students in four departments in the winter semester 2019/20 (Frankfurt University of Applied Sciences, 2020). The university offers courses of study with a highly practical emphasis and aims to enable students to reflect on their professional activities for people, society, and ecology. It additionally uses its experience and contacts not only with companies but also with institutions and associations to actively engage in a dialogue with politics, business, and society (Frankfurt University of Applied Sciences, 2015). It is precisely the practice-oriented teaching and the close cooperation with external partners that distinguishes teaching at this university of applied sciences from the university contexts investigated in previous studies.

2 Theoretical Framework

2.1 Service-learning as a teaching-learning format

Service-learning is a teaching-learning format in which students acquire knowledge and skills in the university and use this knowledge in practice to cater to social needs (Reinders, 2010). In service-learning classes, students combine learning experiences from university and the community (Furco, 2009; Kreikebaum, 2009). They use their knowledge to perform services within the community and to address the community's needs (National Youth Leadership Council, 2008).

Service-learning promises multiple positive effects for students and universities. First, students not only acquire specialist knowledge and skills but also develop personally and

experience the extensive practical relevance of their work (Hofer & Derkau, 2020). Second, they learn better when they actively participate in learning processes and combine academic knowledge with its practical application (Furco, 2009). Third, service-learning can be used to cover the real needs of society and solve problems. Last, in addition to the students, the university also benefits from the offer. It can expand its range of teaching and learning formats, and enhance its profile (Hofer & Derkau, 2020).

2.2 Service-learning in Europe and Germany

The idea of service-learning originated in the USA and was only transferred to Germany and Europe late—and only by chance. The concept then spread throughout the German university landscape. A first milestone in the further development of service-learning was the establishment in 2009 of the University Network on Social Responsibility (Hochschulnetzwerk Bildung durch Verantwortung e.V.). In 2019, the network already had 48 members, 44 of which were universities and four civil society stakeholders. The network aims to give both universities and community partners a platform for the exchange and joint development of instruments (Hochschulnetzwerk Bildung durch Verantwortung e.V., 2019).

The first joint European initiative on service-learning at universities started in 2014 with Europe Engage. Funded by the European Union, this project mapped existing service-learning projects, promoted service-learning as a pedagogical approach, and established a European network. The project involved 12 universities from different European countries (Austria, Belgium, Croatia, Finland, Germany, Ireland, Italy, Lithuania, Netherlands, Portugal, Spain, United Kingdom) The project included numerous measures such as surveys among participating universities and the development of a common definition of service-learning and corresponding quality criteria (Aramburuzabala & McIlrath, 2020; McIlrath et al., 2019). Based on this project, the European Association of Service-Learning in Higher Education was founded in 2019. As a European network, the association has the goal of further disseminating service-learning in the European higher education system and promoting all related activities (European Association of Service-Learning in Higher Education, 2020).

Despite the widespread dissemination of service-learning, there are still only a few research approaches for the German university context (Hofer & Derkau, 2020). According to the literature search conducted by Mažeikiene in 2019, only 27 publications on service-learning had been published in Germany by that date. Just a small proportion of these were research reports (two in English and seven in German). The majority of the publications (18) were monographs/collective works or manuals. The best-known findings on service-learning in Germany come from a comprehensive study by Reinders (2016).

2.3 Effectiveness of service-learning

As with any teaching-learning format, the question arises with service-learning as to how effective the format is. Meta-analyses show that service-learning leads to changes in academic skills (knowledge, cognitive outcomes, academic motivation, and attitudes; Conway et al., 2009). Service-learning thus has a positive effect on both cognitive development (Yorio & Ye, 2012) and academic achievement (Celio et al., 2011; Warren, 2012). Furthermore, service-learning also has a favorable impact on students' personal development (self-evaluation, motivation to volunteer, moral development, well-being,

career development; Conway et al., 2009; Yorio & Ye, 2012). Service-learning moreover leads to changes in students' social skills (ability to work in a team, tolerance, attitudes to clients, attitudes to disadvantaged people in general) and has a positive effect on their social skills (Celio et al., 2011; Conway et al., 2009). The students additionally gain a better understanding of social issues (Yorio & Ye, 2012). Especially in US studies, the positive development of students' civic responsibility could also be observed (Conway et al., 2009). In general, they observe a positive influence of service-learning on the willingness to get involved (Celio et al., 2011).

The effectiveness of service-learning also depends on the specific design elements of the course. Courses involving structured reflection lead to greater changes in results than those without this element (Conway et al., 2009). However, courses with a longer duration or comprising a greater number of contact hours with the clients could not be shown to be more effective (Conway et al., 2009). It can be said, though, that overall, courses based on recommended practices had significantly more of an impact than those that were not structured (Celio et al., 2011).

In addition to the US studies, research findings from European universities show that students in service-learning courses experience a greater increase in self-efficacy, attitudes towards engagement, and willingness to engage than the students in control groups (Fernandez & Slepcevic-Zach, 2018). The benefit for students lies in the insights gained into the community partners' organizations: they learn about social organizations and are confronted with poverty in their own country. Good integration into the community partner's organization and personal contact with clients are important for students (Fernandez & Slepcevic-Zach, 2018). In terms of subjective learning success, students of service-learning courses rate the learning success higher than students in control groups (significant, moderate effect). They ascribe greater learning success to the service-learning course due to the greater practical relevance and the processing of real-life problems (Gerholz, 2015). However, the effects of service-learning in German and European studies are only sporadic, as the periods considered are often too short, i.e., only a few months (Gerholz & Slepcevic-Zach, 2015). The most comprehensive studies in Germany to date are by Reinders (2010, 2016). In a quasi-experimental design, he shows that service-learning boosts motivation and supports students' personal development (Reinders, 2010). In terms of the influence on the personal development of students, the positive impact of service-learning on self-efficacy cannot be substantiated. Self-efficacy increases during the time service-learning takes place, but it does in control groups, too. Time appears to have the biggest impact on self-efficacy (Reinders, 2016). Another study shows that service-learning influences the social attitude of students. They feel more responsible and can recognize social problems sooner (Reinders & Wittek, 2009). While Reinders shows in his study in 2010 that service-learning has a positive impact on the subjective learning outcome of students, replication of the study failed to confirm this finding (Reinders, 2016). The learning outcomes were not measured by exams or tests. Instead, subjective learning outcomes were collected from self-reports by the students. It therefore remains unclear whether service-learning has a positive effect on objective learning outcomes (Reinders, 2016).

2.4 Research Questions

Up until now, only a few studies have been conducted in Germany on the influence of service-learning on learning success. Carried out at research-oriented universities, they show heterogeneous results. The aim of this study is therefore to examine the effectiveness of service-learning compared to two other teaching-learning formats (project work, lecture) at a university offering practice-oriented teaching. The following questions will be answered: (1) What objective learning outcomes do students achieve in the different teaching-learning formats? (2) How does each teaching-learning format (service-learning, project work, lecture) influence students' self-efficacy, subjective learning outcomes, and perceived usefulness? (3) What are students' subjective perspectives on the different teaching-learning formats?

3 Methodology

3.1 Context

The study was conducted in the winter semester 2016/17 at a German university of applied sciences. The 'Social Engagement' course was offered during the interdisciplinary part of the program. The course is structured as a service-learning course. Students from various disciplines work together on the real needs of non-profit organizations and contribute their respective specialist knowledge. Examples of projects include conducting an application training course for refugees, art projects with children and senior citizens, and the design and construction of a barefoot path at a hostel for young people. The students acquire basic knowledge about project management as well as the associated methods and possible applications. Depending on the problem and the real needs of the community partners, the students design a project and carry it out using the methods of project management. The aim of the course is for students to work in teams on social issues and gain insights into social challenges.

3.2 Execution of the study

The study was conducted in a quasi-experimental control group design. The experimental group comprised the students from the service-learning course. Two seminars on project management from the compulsory component of the business administration courses formed the control groups. The students received the questionnaires in the first and last sessions of the course. The interviews were conducted after the course was completed.

To guarantee the participants' anonymity, the questionnaires were provided with a code that the students created for themselves. This allowed a pre-/post-measurement to be made. The interviews were conducted, transcribed, and evaluated by two independent researchers, who were not involved in the courses as teachers. The human subjects were therefore protected during the research.

3.3 Participants

The sample consists of $n=132$ (business) students (57.9% male), who are divided into three study groups. The characteristics of each group are presented in Table 1 below.

Group	Service-Learning	Project Work	Lecture
Subject	Project management	Project management	Project management
Field of study	Interdisciplinary group	Business and economics	Industrial engineering and management
Degree	Bachelor	Bachelor	Master
Sample size (n)	57	44	31
Lecturer	A	A	B

Table 1: Group characteristics

The Service-Learning experimental group is an interdisciplinary group and consisted of n=57 undergraduate students from different disciplines (business and economics, architecture, social work, information technology, engineering). They attended classes voluntarily; the course was optional. The first control group, Project Work, consisted of n=44 students, all of whom were undergraduate business students. They also attended classes voluntarily, but the course was mandatory. The same applied to the second control group, Lecture, with n=31 graduate engineering students. All three groups had the professional learning objective of getting to know the basics of project management and applying these in group work.

The three classes were structured similarly. In the first sessions, students received theoretical input on project management. They conducted different projects thereafter. The Service-Learning group worked on social projects for different organizations in subgroups comprising five to seven students. The lecturer offered reflection sessions, however attendance of these was optional (university restriction). The Project Work group conducted smaller projects within the university, e.g., creating guidelines for the acquisition of tutors. The Lecture group received further theoretical input (more details) and worked on fictitious projects thereafter. Both lecturers used the same materials for their classes.

3.4 Instruments and data sources

The multi-methods study used quantitative and qualitative instruments.

1. Project proposals were available for each subgroup of the Service-Learning and Project Work groups. Students had to hand in a project outline at the end of the semester as part of the final assessment. Each project outline was evaluated in two different ways: 1. Formal analysis (if the project outline was submitted in time and prepared correctly), 2. Content analysis (if the aim was expressed clearly and the milestones defined reasonably). The scale ranged from 1 (worst) to 3 (best).

2. The paper-pencil questionnaire consisted of four parts: sociodemographic data (gender, field of study, voluntary work experience), self-efficacy (three items, e.g., *In difficult situations, I can rely on my abilities.*) (Beierlein et al., 2012), subjective learning outcomes (three items, e.g., *I have the impression that my knowledge has expanded in the long term.*) and perceived usefulness (four items, e.g., *I find the course useful for my future profession.*) (Ritzmann et al., 2014). The instruments showed satisfactory reliabilities (Cronbach's alpha of between .76 and .83). The questioning took place in the first and last sessions of each course. The questions on the subjective learning outcomes and perceived usefulness were only asked during the second measurement. Due to the two points of measurement, information on the influence of time on variables can be supplied.
3. Individual guided interviews were conducted with several participants (n=5) of the three groups one month after the final assessments. They consisted of four parts: 1. Evaluation of the teaching session, 2. Challenges experienced, 3. Competencies acquired, 4. Request for future classes. The interviews were analyzed according to the method of qualitative content analysis (Schreier, 2012).

4 Findings

4.1 Research question 1: What objective learning outcomes do students achieve in the different teaching-learning formats?

Table 2 shows the results of the evaluation of the project proposal for the Service-Learning experimental group and the Project Work control group. No project proposals were available for the Lecture control group because the lecturer opted for a different assessment format.

Variable	Service-Learning	Project Work
The project proposal was available in time.	3	2.8
The project proposal was prepared correctly.	2.6	2.8
The aim is expressed clearly.	2.7	2.3
The milestones are defined reasonably.	2.2	2.3

Table 2: Evaluation of the project proposals

There are no differences between the groups in terms of the objective learning success. Both the experimental and control groups show consistently high scores in all variables. For both groups, the greatest difficulty seems to have lain in defining comprehensible milestones. Mean value comparisons or variance analyses were not possible due to the small sample size.

4.2 Research question 2: How does each teaching-learning format (service-learning, project work, lecture) influence students' self-efficacy, subjective learning outcomes, and perceived usefulness?

Table 3 shows the scales surveyed with reliabilities as well as the mean values and standard deviations for each group and measurement date. The reliabilities are satisfactory (Cronbach's alpha .76–.84).

Variable	Service-Learning			Project Work		Lecture	
	α	M	SD	M	SD	M	SD
Self-efficacy							
Time 1	.76	4.01	.48	3.89	(.60)	4.13	(.41)
Time 2	.82	4.01	.47	3.93	(.68)	4.14	(.47)
Subjective learning outcomes							
Time 2	.81	3.51	.93	3.84	.69	3.65	.68
Perceived usefulness							
Time 2	.84	3.10	(.96)	3.52	(.91)	3.73	(.77)

Table 3: Descriptive data for self-efficacy, subjective learning outcomes, and perceived usefulness

Self-efficacy: In all groups, self-efficacy stays the same over both points of measurement.

Subjective learning outcomes: The experimental group shows non-significant lower scores than the control groups.

Perceived usefulness: The experimental group shows lower scores than the control groups. Both control groups experience significantly more perceived usefulness than the service-learning group ($F=1.41, p=.004$). A Bonferroni-adjusted post-hoc test showed a significant difference ($p<.05$) in perceived usefulness between the Lecture control group and the Service-Learning experimental group (0.63, 95%-CI [0.12, 1.14]).

4.3 Research question 3: What are students' subjective perspectives on the different teaching-learning formats?

The analysis of the interviews shows which strengths and weaknesses the students see in the respective teaching-learning format, how they experienced the format personally (feelings), and what benefits they see in it for their future profession.

When asked about the content of the course, all students describe that they were free to choose their tasks and projects, or at least to choose from a selection of offers. This also applied to the choice of group members and compositions.

One goal of service-learning is to increase the theoretical and practical relevance of a subject. However, students experience this differently. While one student from the Lecture control group (L1) affirms the practical relevance of the lecture, another from the Service-Learning group (SL2) describes that the task could be solved without a theoretical background because of the low complexity:

[A]nd I say the project was not so complex that I really had to use it with milestones, etc. It was actually very straightforward how you did it. And that I could really use something from the university, I would immediately say no. (SL2)

One student from the Lecture group (L1) describes it as particularly positive that a high degree of independence was required to complete the task (*"the independence we had to show, which we actually consider positive."*). When asked about the weaknesses of the course, commonalities emerge in all formats. First of all, the students criticize the small amount of time and effort that was spent on the theory. One student from the Project Work group describes that they *"did not have much" theory. "[W]ell, it became pretty fast, I think in two or three meetings, the theoretical part was done and yes, that that you couldn't make a note of all the information given."* (P1) This was also the perception of a student from the Service-Learning course, who likewise stated that he did not perceive any learning success in terms of the acquisition of technical knowledge. He felt that *"we have not learned much theoretically. And to be honest, I didn't take anything away from the theory either."* (SL1). In the overall assessment of the project, one in five students stated that they were *"somewhat disappointed"* (P1). Both students from the Project Work group describe the course in general as *"disorganized"* (P1) and *"a little confused"* (P2). It remains unclear whether this assessment relates to the format or the organizational structure of the course.

Concerning the challenges within the courses, there are differences between the individual teaching-learning formats. First of all, the groups have in common that they find the task difficult (*"I also found the task quite difficult"*, P2), and experience *"choosing the right topic"* (L1) as a challenge.

For L1, *"the challenge was basically the time pressure"* and *"the independence we had to show"*. This particular student also finds the work together within the group difficult. In the Project Work and Service-Learning groups, challenges arose in the cooperation with internal and external partners. P1 describes that *"one simply did not know who the contact persons were"*. In the Service-Learning group, the type of community partner (*"because the institution itself is pretty heavy, so the hospice was pretty heavy"*, SL1) and the activity of the community partner are seen as challenges (*"And then somehow a coffin was rolled out of the room. [...] And then it was again somehow pretty intense. Um, then we felt pretty drained."*, SL1). Furthermore, in service-learning, the implementation of one's project is seen as a challenge (*"And I would say the second challenge is really to find a solution"*, SL2). Students in both the Project Work and Service-Learning groups state that they lacked adequate support from their lecturers (*"we were left a bit alone, to be honest"*, P2) and from the community partners (*"and there was no one around to really help us, they were all busy"*, SL1).

The students were also asked if they thought that what they had learned was useful to their future profession. In the Service-Learning group, student SL1 states that the class influenced her choice of career, as she then knew that she “[does] not want to work in a hospice”. The teaching-learning formats have in common that the majority of students see the benefit for their subsequent career in the improvement and application of their social skills:

I believe in the togetherness within the group. How to behave with each other, how to know that you shouldn't rely on someone next time, that you should perhaps take things into your own hands, that if you have the opportunity, you should choose people with whom you can and should work really well. (P2)

While the students in the control groups experience improvements in their social competence from working in groups, the students in the service-learning class report the extension of their social competence from working with previously unfamiliar groups of people (other disciplines and population groups) (“the most important thing in work is really people. So you notice that no matter what you work with, no matter how good you are, the most important thing is simply how you can deal with people”, SL2). However, two students also state that they will not be able to apply the theoretical knowledge they have learned in their jobs later on (“I would say that directly in professional life, it didn't help me, so I wouldn't say that I can say now: Okay, that's something I can sell great at work”, SL2).

Finally, the students were asked about their wishes for future courses of this kind. Some wishes such as clearer tasks, a narrower scope of tasks, and free choice of topics (not only a selection) were independent of the formats. Students from the Service-Learning experimental group as well as the Lecture control group would like more theoretical input at the beginning of the course (“I would have liked a bit more theory”, L1). The students of the Project Work group would moreover like there to be a stronger link between theory and practice and closer supervision by the lecturers.

5 Discussion

The study findings provide preliminary insights into the similarities and differences between service-learning and more traditional teaching-learning formats at a university offering practice-oriented teaching.

First, the quantitative results confirm the conclusions reached in previous studies from the German context that service-learning does not generally lead to greater learning success for students than other formats or methods (Gerholz, 2015; Reinders, 2016). The analysis of the objective and subjective learning successes shows that the three groups investigated hardly differ from one another. No greater successes can be discerned for one particular format. One student even stated in the interview that he could not identify any professional learning success in service-learning. Only the perceived usefulness differs between the service-learning students and the lecture group. The students from the lecture group feel more that they can apply the experience and knowledge they gained during the courses in their later profession and that they will need these there. It remains unclear whether this outcome can be explained by the different teaching-learning formats or other factors. The lecture was attended by master's students, who have often gained professional experience

between their bachelor and master studies. It can therefore be assumed that these students can already assess which skills and knowledge they will need and be able to use in their future profession. Bachelor students often have less work experience or have only gained insights into future activities during an internship. They will tend to find it more difficult to assess the extent to which they can use what they have learned later on in their careers. For a detailed statement, the study would have to be repeated with bachelor students in all three formats. In terms of personality development, measured by the change in self-efficacy, no difference can be observed between the groups. Self-efficacy does not change in any of the groups studied. In contrast to other studies, neither effects in favor of the service-learning format (Conway et al., 2009; Fernandez & Slepcevic-Zach, 2018; Yorio & Ye, 2012) nor time effects could be shown here (Reinders, 2016). Other authors have already pointed out that the periods of service-learning classes and other courses are often too short to achieve effects in this area (Gerholz & Slepcevic-Zach, 2015). To be able to detect changes in self-efficacy or other personality factors, students would probably have to be accompanied throughout their entire studies.

Interesting results can be found in the interviews conducted. First of all, it is noticeable that regardless of the teaching-learning format students experienced, they consider similar aspects as positive or negative or express similar wishes for a possible repetition of the courses. Remarkably, the students initially criticize the small amount of theory conveyed at the beginning of the course. In a practice-oriented course, it could be assumed that students would place more emphasis on practical application. Building on this, the students also note that the lack of theory made practical application difficult and, in some cases, impossible. This shows that when aiming for high theoretical and practical relevance, the proportions of these two factors must be more evenly distributed. Furthermore, the students indicate that they considered the task difficult and that they missed greater support from the lecturers. Common to the students from all groups is that they see the greatest benefit of the course in the expansion of their social competence. This is achieved both by working in groups and by working with clients. This finding is consistent with previous studies (Celio et al., 2011; Conway et al., 2009). Differences between the groups become apparent in the perceived challenges. While the Lecture control group mainly perceived time pressure as the challenge, students from the other groups see the challenge in the cooperation and communication with partners. Service-learning students even find themselves lacking support from their community partners. Fernandez and Slepcevic-Zach (2018) already emphasize that students see the benefit of service-learning in a good interaction with clients and organizations. The findings of this study suggest that the lack of good contact is detrimental to the perceived usefulness of the service-learning experience.

In conclusion, it can be said that the heterogeneous results for service-learning in the German university context already shown by Reinders (2016) could also be seen in this pilot study. However, the results for the control groups were no better than those for the service-learning group. The effects in terms of academic development, personality development, and social development appear to be similar for all three of the teaching-learning formats investigated.

6 Limitations and Future Research

The pilot study has a number of methodological limitations. The sample size is small, for example—as dictated by the small groups of students and the seminar format of courses at this kind of university. Furthermore, there is no compulsory attendance, not even for reflection sessions, so that it cannot be assumed that all the students examined have participated in all of the courses. The low number of participants in the interviews is also a weakness of the study. Despite repeated requests and inquiries, no further interested parties could be won for the interviews. A continuation of the study is therefore only worthwhile if the number of study participants can be increased. This can be achieved while keeping the small study groups by conducting the study over several semesters. However, to ensure comparability, care must be taken not to change the structure of the courses.

7 References

- Aramburuzabala, P., & McIlrath, L. (Eds.). (2020). Europe Engage: Developing a Culture of Civic Engagement Through Service-Learning Within Education in Europe. <https://europeengage.org/>
- Beierlein, C., Kovaleva, A., Kemper, C. J., & Rammstedt, B. (2012). Ein Messinstrument zur Erfassung subjektiver Kompetenzerwartungen: Allgemeine Selbstwirksamkeit Kurzsкала (ASKU) (GESIS - Working Papers 2012 - 17). GESIS - Leibniz-Institut für Sozialwissenschaften.
- Celio, C. I., Durlak, J., & Dymnicki, A. (2011). A Meta-analysis of the Impact of Service-Learning on Students. *Journal of Experiential Education*, 34(2), 164–181. <https://doi.org/10.5193/JEE34.2.164>
- Conway, J. M., Amel, E. L., & Gerwien, D. P. (2009). Teaching and Learning in the Social Context: A Meta-Analysis of Service Learning's Effects on Academic, Personal, Social, and Citizenship Outcomes. *Teaching of Psychology*, 36(4), 233–245. <https://doi.org/10.1080/00986280903172969>
- European Association of Service-Learning in Higher Education. (2020). European Association of Service-Learning in Higher Education. <https://www.eoslhe.eu/easlhe/>
- Fernandez, K., & Slepcevic-Zach, P. (2018). Didaktische Modellierung einer Service-Learning-Lehrveranstaltung – Ergebnisse eines Design-Based-Research-Ansatzes. *Unterrichtswissenschaft*, 46(2), 165–184. <https://doi.org/10.1007/s42010-017-0002-8>
- Frankfurt University of Applied Sciences (Ed.). (2015). Leitbild der Frankfurt University of Applied Sciences. https://www.frankfurt-university.de/fileadmin/standard/Hochschule/Ueber_uns/Selbstverstaendnis_und_Leitbild/Leitbild_der_Frankfurt_University_of_Applied_Sciences-10-16.pdf
- Frankfurt University of Applied Sciences (Ed.). (2020). Zahlen – Daten – Fakten. <https://www.frankfurt-university.de/de/hochschule/wir-ueber-uns/zahlen-daten-fakten/>
- Furco, A. (2009). Die Rolle von Service Learning im Aufbau einer gesellschaftlich engagierten Universität. In K. Altenschmidt, J. Miller, & W. Stark (Eds.), *Beltz-Bibliothek. Raus aus dem Elfenbeinturm? Entwicklungen in Service Learning und bürgerschaftlichem Engagement an deutschen Hochschulen* (pp. 47–59). Beltz.
- Gerholz, K.-H. (2015). Potenziale von Service Learning in den Wirtschaftswissenschaften - Didaktische Konzeption und empirische Befunde aus einer Ex-ante-Analyse. In Seifried, Jürgen, Seeber, Susan & B. Ziegler (Eds.), *Jahrbuch der berufs- und wirtschaftspädagogischen Forschung 2015* (pp. 117–130). Verlag Barbara Budrich. <http://nbn-resolving.de/urn:nbn:de:0111-pedocs-183484>
- Gerholz, K.-H., & Slepcevic-Zach, P. (2015). Social Entrepreneurship Education durch Service Learning - eine Untersuchung auf Basis zweier Pilotstudien in der wirtschaftswissenschaftlichen Hochschulbildung. *Zeitschrift Für Hochschulentwicklung*, 10(3), 91–111.
- Hochschulnetzwerk Bildung durch Verantwortung e.V. (Ed.). (2019). *Neue Wege für Dialog & Transfer: 10 Jahre Hochschulnetzwerk Bildung durch Verantwortung*.
- Hochschulnetzwerk Bildung durch Verantwortung/AG Qualität. (2019). *Ten criteria - a Reference Framework for Successful Service Learning*. Hochschulnetzwerk Bildung durch Verantwortung. https://www.bildung-durch-verantwortung.de/wp-content/uploads/2019/08/Qualitaetskriterien_HBdV_2019_English.pdf
- Hofer, M., & Derkau, J. (2020). Die Entwicklung von Service Learning in Deutschland - eine Verortung. In D. Rosenkranz, S. Roderus, & N. Oberbeck (Eds.), *Service Learning an Hochschulen: Konzeptionelle Überlegungen und innovative Beispiele* (1st ed., pp. 133–137). Beltz Juventa.

- Kreikebaum, M. (2009). Ansätze des Service Learning an deutschen Hochschulen. In K. Altenschmidt, J. Miller, & W. Stark (Eds.), *Beltz-Bibliothek. Raus aus dem Elfenbeinturm? Entwicklungen in Service Learning und bürgerschaftlichem Engagement an deutschen Hochschulen* (pp. 40–46). Beltz.
- Mažeikiene, N. (2019). Understanding the evolution of service learning at European universities. In P. Aramburuzabala, L. MacIrrath, & H. Opazo (Eds.), *Embedding Service Learning in European Higher Education: Developing a Culture of Civic Engagement* (pp. 93–108).
- McIrrath, L., Aramburuzabala, P., & Opazo, H. (2019). Europe Engage: Developing a culture of civic engagement through service learning within higher education in Europe. In P. Aramburuzabala, L. MacIrrath, & H. Opazo (Eds.), *Embedding Service Learning in European Higher Education: Developing a Culture of Civic Engagement* (pp. 69–80).
- National Youth Leadership Council (Ed.). (2008). K-12 Service-Learning Standards for Quality Practice. https://nylc.org/wp-content/uploads/2015/10/standards_document_mar2015update.pdf
- Reinders, H. (2010). Lernprozesse durch Service Learning an Universitäten. *Zeitschrift Für Pädagogik*, 56(4), 531–547.
- Reinders, H. (2016). *Service Learning: Theoretische Überlegungen und empirische Studien zu Lernen durch Engagement* (1. Aufl.). Beltz Juventa.
- Reinders, H., & Wittek, R. (2009). Persönlichkeitsentwicklung durch Service Learning an Universitäten: Befunde einer quasi-experimentellen Längsschnittstudie. In K. Altenschmidt, J. Miller, & W. Stark (Eds.), *Beltz-Bibliothek. Raus aus dem Elfenbeinturm? Entwicklungen in Service Learning und bürgerschaftlichem Engagement an deutschen Hochschulen* (pp. 128–143). Beltz.
- Ritzmann, S., Hagemann, V., & Kluge, A. (2014). The Training Evaluation Inventory (TEI) - Evaluation of Training Design and Measurement of Training Outcomes for Predicting Training Success. *Vocations and Learning*, 7(1), 41–73. <https://doi.org/10.1007/s12186-013-9106-4>
- Schreier, M. (2012). *Qualitative content analysis in practice*. Sage. <http://gbv.ebib.com/patron/FullRecord.aspx?p=880849>
- Warren, J. L. (2012). Does Service-Learning Increase Student Learning? A Meta-Analysis. *Michigan Journal of Community Service Learning*, 56–61.
- Yorio, P. L., & Ye, F. (2012). A Meta-Analysis on the Effects of Service-Learning on the Social, Personal, and Cognitive Outcomes of Learning. *Academy of Management Learning & Education*, 11(1), 9–27. <https://doi.org/10.5465/amle.2010.0072>

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