

Supporting the Transfer of Knowledge: A Structured Program for the Application of Meta Competencies and the Exchange of Science and Society through University Projects

Felix Liedel, Monika Waschik, Christian Lengl, Ulrike Machalett-Gehring
Technical University of Applied Sciences Würzburg-Schweinfurt (THWS)

Abstract

With the launch of the Bridging Studies “Future Ideas and Project Implementation” in the winter semester 2024/2025, the Technical University of Applied Sciences Würzburg-Schweinfurt (THWS) established a new innovative form of studying: students are given the opportunity to actively work on their own project ideas for one to two semesters. They are supported by a seminar-based teaching program that builds on itself and provides methods that they can directly apply to their own project work. In this way, students learn transfer skills in two ways: Firstly, they actively learn how to apply meta-skills to different subjects. Secondly, they actively contribute to the transfer of university knowledge into society through practical project work. This benefits both founders and managers, as well as individual creative projects.

1. Introduction

The Bridging Studies “Future Ideas and Project Implementation” is a result of the project EntrepreneurSHIP (Raising Awareness and Leveraging Innovative Potential) at the THWS, which was funded by the Federal Ministry of Economics and Climate: over a period of four years, the project team sensitized and qualified students at the university for entrepreneurship-related skills. Another important aspect of the project was the development of a strategy for a sustainable continuation of the offers. Above all, the aim was to identify best cases and to develop a concept that can be used to pursue and expand future start-up support at the university. Since the project is based at the Campus for Applied Research (CAF) of the THWS, the transfer concept is particularly important: As the university's transfer center, the CAF's main mission is to transfer university knowledge to society in a way that ensures lasting impact. The Bridging Studies now combine both concerns in an innovative way: On the one hand, it helps to identify start-up and management personalities and support them in their work. This allows for the transfer of meta-competencies to different fields. On the other hand, the Bridging Studies itself helps to turn university-based projects into reality (tangible outcomes).

This paper documents the theoretical and

empirical preparatory work for the establishment of the Bridging Studies program, as well as the first implementation phase in the winter semester 2024/2025.

2. Literature Review and Participation in Scientific Exchange

The work in the EntrepreneurSHIP project was scientifically monitored in order to ensure a sustainable continuation of the most important project components. In addition to the regular evaluation of our own event formats, an intensive literature analysis and participation in the scientific exchange on entrepreneurship education were also included in the project work.

In addition to comprehensive and continuous literature research on the current state of research, a separate publication and exchange platform was established to enable the project team to discuss key topics more intensively. In addition to theory-based contributions, the platform was also used to discuss case studies and theses from the field of entrepreneurship research. [1]. People close to the THWS EntrepreneurSHIP-project, students of relevant subjects and established academics from various universities contributed to the platform. The content of the published contributions included female entrepreneurship and the opportunities for female innovation [2], inspiring innovation as a driving force for entrepreneurship [3], playful design [4] and communication theory aspects of entrepreneurship research [5]. This ensured that the project team was always at the cutting edge of research and was able to bring its own developments into dialog with it.

3. Development

The comprehensive examination of current findings in entrepreneurship education and research was used directly as the basis for further qualitative analysis. The aim of the analysis was to identify key aspects for a new concept that, on the one hand, can continue important elements of the “EntrepreneurSHIP” project, while, on the other hand, incorporating aspects that have not yet been

explored.

Qualitative Analysis

The qualitative analysis benefited from previous work with the current state of research. Key categories were first inductively identified from the literature. Then important arguments were deductively assigned.

Three aspects should be pointed out here especially: *structure*, *interdisciplinarity* and *incentive systems*.

Firstly, for example Vanevenhoven and Drago [6] emphasize the importance of a *structured and coordinated* range of qualification options for startup support during studies. Up to now, the THWS funding options have offered rather fragmentary insights into partial aspects of the start-up process, but no well-structured journey that allowed the implementation of individual or group projects in practice. To create a coherent framework, a new approach to the qualification concept had to be developed.

Secondly, an undergraduate start-up qualification must address the interests and abilities of all students, thus ensuring *interdisciplinarity* both within a diverse student group and in terms of content. The humanities, social sciences and cultural studies have often been overlooked in the past, despite being areas where creative potential, and consequently, social innovation could emerge [7]. This is also reflected in the “start-up jargon”, which may be perceived as off-putting in some disciplines. [8] A new approach must ensure that all university entrants are included in the content taught as well as in the communicative framework conditions.

Lastly, it can be observed that the incentive systems of previous start-up support are no longer suitable for encouraging students to engage with start-up-relevant content. State funding programs (such as the German EXIST and FLÜGGE programs) in particular are not able to support all project ideas due to the required level of innovation and have only produced a few teams eligible for funding in recent years. [9] University projects that do not meet the required criteria have no chance of receiving funding. Many promising projects from the social or artistic fields therefore lacked the time, place and opportunity to be turned into reality.

A new approach must therefore create alternative incentive options that are distinct from traditional funding programs or, ideally, can complement them.

Theoretical position

For this new approach, first of all a theoretical position had to be developed. In the following, we would like to highlight two aspects in particular: Firstly, our understanding of the transfer of

knowledge; secondly, our position on the understanding of our pedagogical role within the teaching formats.

In the following, we assume, in line with the common understanding, that start-up processes represent relevant options for the transfer of knowledge from universities to society [10].

We achieve this through a project-based learning approach: students work practically on their own individual projects and directly apply the meta-skills they learn in the Bridging Studies. Here we follow the constructivist paradigm: we assume that students are experts in their own project ideas [11]. The courses should help them to find their own structure and form of organization as well as their own operationalization.

Transfer therefore occurs on two levels: on the pedagogical level, we support students in the application of generalizable meta-competencies, while simultaneously establishing structural conditions that facilitate the transfer of university knowledge into society through project work.

The project ideas that are processed may or may not be start-up projects. We also consider scientific or artistic projects to be valuable and worthy of support, as they channel university knowledge for social stakeholders in institutions (universities, administration, media, museums) and business (start-up centers, chambers of industry and commerce).

4. The structure of the Bridging Studies

The Bridging Studies “Future Ideas and Project Implementation” is a modular program in accordance with the Bavarian Higher Education Innovation Act [12]. It enables regular enrolment as a student at the Technical University of Applied Sciences Würzburg-Schweinfurt and the acquisition of up to 30 ECTS points, which can be credited in later degree courses (for example at Bachelor's or Master's level). This makes the Bridging Studies particularly suitable for the meaningful organization of periods between qualification and life stages, for example after the Abitur, between Bachelor's and Master's studies or between Master's and career entry or further academic qualification. Last but not least, this allows time and space to develop an individual project in a sensibly structured way, independently of financial support programs. The Bridging Studies can be completed in 1-2 semesters and can be started every semester. When compiling the curriculum, we took into account the findings of the qualitative preliminary study: the Bridging Studies offer a structured program as a coherent journey of interlinked offerings. The content is selected in such a way that it can be connected to as many projects as possible. On the linguistic side, we have avoided the typical startup wording. The Bridging Studies sees itself as a program for “Future Ideas and Project

Implementation” instead of ‘startup support’, ‘entrepreneurship education’ or ‘innovation management’.

Above all, the Bridging Studies provide time, space and opportunity to take an idea into the implementation phase without having to rely on funding programs.

The individual project

At the heart of the Bridging Studies is an individual or group project, which is further developed within one or two semesters and transferred to the implementation phase. Although the individual project is not a formal requirement for enrolment, it is a prerequisite for all courses, as practical work is carried out on partial aspects. The individual project can be designed according to one’s own interests. It can therefore be an economic, scientific, social or creative project. The main aim of the Bridging Studies is to create organizational, structural, and flexible teaching and learning environments in which the individual projects can be meaningfully developed.

The teaching units

The teaching units of the Bridging Studies deal primarily with the organizational framework conditions of project work, as well as meta-competencies in areas such as communication and project management, which are applicable to all forms of project work. The seminar-based teaching units offered include:

- Personality and society (block seminar): Students discover their individual purpose in social contexts using proven personality tools (e.g. IKIGAI, systemic hero's journey).
- Creativity and innovation (block seminar): Using creativity methods from design thinking and experience design, students work on new ideas or develop existing ideas further.
- Designing and managing projects (block seminar): Students develop concrete project missions and visions as well as milestone plans for the duration of one or two semesters using SMART methods.
- Implementing and documenting projects (semester-long): Follow-up of the individual milestone plan as part of a semester-accompanying discussion format including peer group meetings and deep dive sessions into the individual projects, in the mindset of agile project management.
- Founding@THWS (semester - accompanying):

Students develop business models for their project idea and deal with legal, financial and tax issues in cooperation with the network.

- Science management (during the semester): Students organize their own conference with key note speakers, presentations and poster sessions and get more insights in fields such as acquisition of third-party fundings and the opportunities of further academic qualification.
- Communication and media (during the semester): Following on from important communication theories and techniques, students develop their own communication concepts for their projects and learn about pitching techniques.
- Startup Competition: Students develop concrete solutions to real entrepreneurial challenges in cooperation with practice partners and pitch them within a practical phase.
- Individual focus (during the semester): In cooperation with the Virtual University of Bavaria, students have the option of choosing a focus of their choice to match their individual project and attending corresponding lectures

Some courses are offered every semester, some are offered on a rotating basis in the winter or summer semester. It is generally possible to earn 30 ECTS points in one semester.

The Final Conference

Each semester concludes with a final conference, which is also the examination for the “Science Management” seminar. As part of the final conference, the students of the Bridging Studies present their current project status, either through a pitch or a poster presentation. An additional keynote speaker will also provide insights into a focus topic defined by the students themselves. In addition to the students of the Bridging Studies, relevant stakeholders from the network (such as start-up centers, chambers of industry and commerce, science, media) are also invited to present individual follow-up options. This ensures that any ideas developed during the Bridging Studies are effectively transferred to the real world, as the network is not only involved throughout the seminars but also present at the final presentations.

5. The transfer of knowledge

Entrepreneurship education at universities often suffers from the fact that many promising start-up projects are not turned into reality after the qualification phase. There are many reasons for this, ranging from a lack of funding options and

insufficient entrepreneurial skills to a lack of networks. [13] We therefore believe it is essential to firmly integrate possible follow-up prospects into the concept of the Bridging Studies and to ensure that knowledge transfer becomes a reality.

Given the highly heterogeneous nature of the group, these follow-up options must also be equally diverse. Innovation-based, high-tech-focused start-ups can receive further support through the “ZENTRIA” certificate program (a collaboration with the University of Würzburg and Aschaffenburg University of Applied Sciences) or be considered for the EXIST start-up grant. Female founders can also benefit from the “EXIST Women” qualification program, which offers scholarships. The general start-up advice service at THWS is open to all THWS students and alumni. In addition, the network (e.g. start-up centers, Chamber of Industry and Commerce) is already actively involved during the Bridging Studies. Those interested in pursuing a doctorate are given personal contact persons by the THWS Doctoral Center, which is also located on the Campus for Applied Research. It is also possible to take up further studies at the THWS or another national or international university, with the ECTS points earned being transferable.

6. The first implementation of the Bridging Studies

The Bridging Studies at the THWS were first introduced in the winter semester 2024/2025 and continued successfully within the summer semester 2025. With 27 students enrolled, the registration rate far exceeded expectations for the new offer, despite not all available deadlines being utilized. The student cohort confirmed the preliminary assumption that the chosen approach managed to reach people who had not previously attended THWS start-up support events: With scientific, artistic and entrepreneurial projects, a wide range of ideas are represented, which are further developed as part of the Bridging Studies program. Some of these are suitable for follow-up options in funding programs. With 2/3 of the participants being female, the Bridging Studies also contribute to a gender-related diversification of the start-up landscape.

Last but not least, we consider it a decisive success that the Bridging Studies connect people who might not otherwise come into contact with each other. The social factor of studying and developing together is one of the main arguments in favor of the program for many students.

7. Conclusion

The Bridging Studies “Future Ideas and Project Implementation” represents a promising approach to

strengthening students' transfer skills on the one hand and creating conditions for the transfer of university knowledge into society on the other. The project-based learning approach helps with the application of meta-skills to concrete ideas but also serves to transfer knowledge through (potential) start-ups and real student projects.

8. References

- [1] Lengel, C., Liedel, F., Waschik, M., Machalett-Gehring, U. (2024). Gedanken. Machen. Beiträge zur Entrepreneurship-Forschung. Technical University of Applied Sciences Würzburg-Schweinfurt, 2022-2024, <https://ejournals.biblio.thk.thws.de/eship/issue/view/7> (Access Date: 9 June 2025).
- [2] Quell, A. (2024). Female Entrepreneurship. Chancen weiblicher Innovation. In C. Lengel, F. Liedel, M. Waschik, U. Machalett-Gehring (Ed.). Gedanken. Machen. Beiträge zur Entrepreneurship-Forschung. Technical University of Applied Sciences Würzburg-Schweinfurt, 2022-2024. DOI: 10.58143/gmbeitrge.v1i1.7 5.
- [3] Müller, J. (2024). Bildung und inspirierende Intuition. Triebkräfte für Entrepreneurship. In C. Lengel, F. Liedel, M. Waschik, U. Machalett-Gehring (Ed.). Gedanken. Machen. Beiträge zur Entrepreneurship-Forschung. Technical University of Applied Sciences Würzburg-Schweinfurt, 2022-2024. DOI: 10.58143/gmbeitrge.v1i1.55.
- [4] Junge, J. (2024). Spielerisches Gestalten. Ludologie als transdisziplinärer Forschungsbereich. In C. Lengel, F. Liedel, M. Waschik, U. Machalett-Gehring (Ed.). Gedanken. Machen. Beiträge zur Entrepreneurship-Forschung. Technical University of Applied Sciences Würzburg-Schweinfurt, 2022-2024. DOI: 10.58143/gmbeitrge.v1i1.73.
- [5] Liedel, F. (2024). Im Spannungsfeld zwischen Subjekt und System. Eine Spurensuche nach den kommunikationstheoretischen Aspekten der Entrepreneurship-Forschung. In C. Lengel, F. Liedel, M. Waschik, U. Machalett-Gehring (Ed.). Gedanken. Machen. Beiträge zur Entrepreneurship-Forschung. Technical University of Applied Sciences Würzburg-Schweinfurt, 2022-2024. DOI: 10.58143/gmbeitrge.v1i1.5 8.
- [6] Vanevenhoven, J., Drago, W.A. (2015). The Structure and scope of entrepreneurial programs in higher education around the world. In D. Rae, C. Wang (Ed.). Entrepreneurial Learning. New Perspectives in Research, Education and Practice. Routledge, London, pp. 117-133.
- [7] Durand, A.-P., Henseler, S. (2023). Introduction: Open for Business. The Entrepreneurial Humanities. In A.-P. Durand and C. Henseler (ed.). The Entrepreneurial Humanities. The Crucial Role of the Humanities in Enterprise and the Economy. Routledge, 2023.
- [8] Gibb, A.A. (2002). In pursuit of a new ‘enterprise’ and ‘entrepreneurship’ paradigm for learning: Creative destruction, new values, new ways of doing things and

new combinations of knowledge. *International Journal of Management Reviews*, 4(3), pp. 233–269.

[9] Mueller, C.E. (2023). What drives the effectiveness of public startup support programs? Empirical insights from the EXIST-business startup grant. *Journal of Entrepreneurship and Public Policy*. DOI: 10.1108/JEPP-08-2023-0083.

[10] Fiedler, M., Heidegger, L., Treffers, T., Weller, I. (2023). *Entrepreneurship Performance Deutscher Hochschulen 2023: Munich Impact Study*. Technical University of Munich, TUM School of Management, Chair for Strategy and Organization, München. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-90473-8> (Access Date: 3 March 2025).

[11] Arnold, R. (2018). *Ich lerne, also bin ich. Eine systemisch-konstruktivistische Didaktik*. Carl Auer, Heidelberg.

[12] Bayerisches Hochschulinnovationsgesetz (BayHIG, 2022). Sonstige Studien nach Artikel 9 Satz 2, Artikel 77 Absatz 4, Artikel 80 Absatz 1 Satz 1 und Satz 2 sowie Artikel 84 Absatz 2 Satz 1, 05.

[13] Prokop, D., Huggins, R., Bristow, G. (2019). The survival of academic spinoff companies: An empirical study of key determinants. *International Small Business Journal Researching Entrepreneurship*. DOI:10.1177/0266242619833540.