Bridging the science-business gap in work-integrated learning through students' master theses: A business perspective in French-speaking Belgium

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INTRODUCTION

This paper examines how master's theses in work-study programs could be optimized as Work-Integrated Learning (WIL) experiences, ensuring alignment between academic and business expectations while maintaining rigorous scientific inquiry.

It has only been a few years since French-speaking Belgium universities were allowed to develop work-study master's programs ("master en alternance"). Universities interested in developing these programs that are willing to develop such program must comply with the legal framework ("décret du 30 juin 2016 organisant l'enseignement supérieur en alternance") defining the terms and conditions of the program. They include the minimum time spent in the partners' organisation, the minimal wage for the student and the fields of study to be included (based on criteria such as sectors with jobs in high demand, or emerging occupations, occupations related to sustainable development, or jobs linked to economic recovery).

It is in that context that, recently, UCLouvain, one of the main universities of French-speaking Belgium, started three master programs *en alternance* in Strategic Communication, Management Sciences (with a specialization in Digital Business Transformation) and in Accounting and Tax Expertise. These three programs aim to facilitate both access to and the continuation of university studies at the second-cycle level, while also accelerating entry into the job market by developing professional skills and experience. Students spend at least 40% of their time in the workplace, completing a series of assignments designed to develop targeted skills. These assignments are carried out in collaboration with the company tutor and are aligned with the university's academic objectives. Similarly, the master thesis is designed to be related to the experience within the company. The programs directors want to maintain the academic standards of a university master's degree in these programs, with high-level disciplinary and methodological teaching, the development of specific skills through missions carried out in companies and reflective and critical perspective on practices and achievements.

These programs being in early stages, they led to several practical reflections on how to maintain these standards. An issue with the general low quality of the first graduating class' master theses was seen as a warning sign that the programs had to be adapted to maintain high academic standards. A root

cause for the quality issues was established through a mixed-approach analysis, and short and long-term actions are being taken to address it. This paper draws on the root cause report which aimed to provide relevant data to explore potential actions in the context of reflecting on thesis formats and support mechanisms in UCLouvain's work-study master's programs (Derinöz, 2025). The primary objective of this report was to identify barriers and opportunities related to these theses to align them with the expectations of three key stakeholders: students, companies, and academic institutions. A holistic approach was adopted to contextualize, analyze the existing situation, determine the needs and expectations of stakeholders, and propose avenues for reflection. This was achieved through a literature review, documentary analysis, stakeholder testimonies, online surveys, in-depth and informal interviews, focus groups, and observations.

The paper focuses on insights that were retrieved from a survey that targeted partnering organizations. The survey was designed to understand partner organizations' needs and expectations of the program, including integrating the students' theses and scientific methods into organizational practices. This paper uses business insights to illustrate how masters' theses, utilizing WIL, have the potential to bridge the gap between university education, students, and companies.

WORK-STUDY MASTER'S THESES AND WIL

As an umbrella term, WIL comes with a large number of definitions and understanding, (Zegwaard et al., 2023) and is often either hollowly, vaguely or non-defined (Björck & Willermark, 2024).

Some authors consider that it is necessary to distinguish WIL with Work-integrated Education (WIE) (Billett, 2019; Billett & Valencia-Forrester, 2020). Without going any further into this discussion, this paper's understanding of WIL is based on Zegwaard et al. (2023) inclusive definition:

> An educational approach involving three parties – the student, educational institution, and an external stakeholder consisting of authentic work-focused experiences as an intentional component of the curriculum. Students learn through active engagement in purposeful work tasks, which enable the integration of theory with meaningful practice that is relevant to the students' discipline of study and/or professional development.

As described before, the definition fits the *masters en alternance* programs with work-focused experiences as an intentional component of the curriculum and an articulation between theory and meaningful practice. Moreover, the master's theses as thought in those work-study master programs seems to align with WIL activities. Master theses can even be thought of as a process, on campus and in workplace settings, (Björck & Willermark, 2024), that includes Pre-WIL and post-WIL aspects (Ferns et al., 2025). Although there are differences between programs, in all cases, the thesis is expected to be related to the organization where the work-study occurs. All three parties, university, student and company, are expected to be involved in different ways. Initially, these theses directly connected to a project that was developed in the work environment, making it an active engagement in purposeful work tasks, enabling the integration of theory with meaningful practice related to the discipline, as well as professional development and valorization (Sanojca & Triby, 2022).

Often used as "work readiness", the "employability" of WIL is considered by some authors as incorporating the capacity to "challenge and change how work is conducted in a profession and in working life in general" (Björck, 2021; Björck & Willermark, 2024, p.3). In this perspective, WIL might target a larger set of skills, that might benefit from the competencies developed through an organization oriented university master thesis, such as critical thinking and reflection.

The science-business gap issue is a central point of attention when designing work-study master programs theses. While universities emphasize scientific rigor and methodological depth, businesses prioritize applied research and actionable insights (Fournet & Bedin 1998). If WIL discourses can easily defend the idea of bridging the gap between science education, the actual practicality of it can sometimes be hard to find in programs or activities (Sunnemark et al., 2024). This misalignment raises critical challenges: how can a master thesis serve both academic excellence and business relevance, while at the same time developing key professionally adapted skills for students? How is it possible to resolve the epistemological tensions that can appear in some fields (Morillon, Grosjean, & Lambotte 2018)? Several authors developed ways of framing master theses specifically adapted to businesses settings, particularly in engineering and IT (see for example Höst, Feldt, & Luders 2010; Knauss 2021). In some case studies involving close relations between organizations and universities, final year projects or theses seemed to be a useful WIL (Xia et al., 2015).

In UCLouvain's work-study master programs the evaluations of the first cohort's theses showed gaps in alignment with the university' quality expectation, leading to questions about how the master's theses could be improved to include functional WIL for students and added value for businesses while adhering to the expected methodological and quality standards of the university.

BUSINESSES PERSPECTIVE ON MASTER THESES

In order to understand businesses needs and expectations regarding the students' master theses, to identify obstacles and opportunities and to have a better comprehension of the integration of science and master theses in businesses workflow, we created an online survey. This survey includes a series of questions designed to explore how organizations interested in work-study programs perceive the scientific approach, the thesis, the student, and the role of students' tutors in organizations, as well as their potential collaboration with the university in this context. The survey was sent to contact addresses of organizations that have either already hosted or are currently hosting a student, as well as to organizations interested in this possibility. More than a hundred organizations were contacted, resulting in 34 responses. Additionally, several individuals agreed to participate in a discussion meeting to further exchange views on the topic.

Respondents expressed both strong interest in university-business collaboration through master's theses and reservations related to various obstacles. Organizations positively assess the value of a thesis when it is designed as an applied analysis tool, meeting concrete business needs. They expect the thesis to help solve specific problems, through in-depth analysis and proposals for practical solutions. For the respondents, a relevant thesis is one that understands the company's challenges, proposes strategic directions or concrete improvements, and contributes to the implementation of operational changes or long-term projects. The respondents, who occasionally use different scientific resources, generally have

a positive opinion of the usefulness of the scientific approach, as it reinforces the credibility of the results and facilitates decision-making or innovation.

The skills that were expected to be acquired from the work-study programs were mostly business oriented: adaptability, autonomy, creativity, and communication skills, organizational skills (project management, meeting deadlines), interpersonal skills, as well as technical skills and more professional environment specific skills. These skills are not directly related to the scientific approach, although some can be acquired within the framework of a thesis, such as autonomy, project management, and, depending on the subject, knowledge related to the professional environment.

Among the obstacles identified for developing a useful thesis to the organization, the respondents cited the time burden for tutors; the lack of alignment between thesis topics and the concrete needs of organizations; as well as confidentiality constraints, which can limit access to data. The thesis is sometimes seen as too theoretical and not easily adaptable to field needs. Tutors generally perceive the thesis positively and are willing to engage in the process, but they request more clarity, earlier and clearer integration, and more active collaboration with the university. The support of the company tutor is seen as essential to ensuring the relevance of a thesis, but this commitment often represents a significant workload for tutors, particularly in terms of time and involvement required.

CONCLUSION

Master's theses in work-study programs have the potential to be valuable WIL experiences, bridging the gap between academia, businesses, and students. However, for this potential to be fully realized, careful design and implementation are necessary to ensure mutual benefits for all stakeholders. As the findings from the business survey indicate, a thesis can be an effective tool for applied research, provided it aligns with business needs while maintaining academic rigor.

To make these theses more beneficial, it is essential to foster early and continuous collaboration between students, university supervisors, and company tutors. A shared understanding of the thesis objectives, constraints, and deliverables between all parties is also crucial. Providing businesses with clearer guidelines on what constitutes an academically rigorous, yet practical thesis can help address concerns about approaches considered as "too theoretical" and ensure feasibility in professional settings. The epistemological divide between academic and business perspectives can sometimes lead to friction, particularly regarding methodological expectations. Offering more flexible thesis formats or, in the other way, a specifically adapted framework could help reconcile these differing expectations while maintaining academic integrity.

While businesses generally appreciate the credibility of a scientific approach, there is room to further demonstrate the tangible value of academic research through master's theses. Promoting best practices in knowledge transfer and showcasing successful collaborations can reinforce the perception that well-conducted theses can lead to innovation and strategic improvements. By strengthening these aspects, universities can enhance the relevance and effectiveness of master's theses within work-study programs. This might not only contribute to students' professional development but also foster

stronger ties between academia and industry, ensuring that these programs fulfill their promise as high-impact WIL experiences.

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