

# LEGITIMISING THE ROLE OF AN INTERNATIONAL DESIGN EXPERT: BEYOND THE TRADITIONAL APPROACH OF COLLABORATIVE PROJECTS

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## ABSTRACT

The essence of collaborative projects between university and industry, is to find a space where pedagogical strategies are focused on activities that: a) foster innovation within the company to explore different solutions and opportunities through the design of new concepts; b) grant students to have the experience of participating in a real industry project; and c) bring up to date knowledge to professors allowing diversity for their role. This paper describes best practices and limitations of making collaboration possible exploring different mechanisms in lowering barriers related to the orientation of universities, and to the transactions involved in working with different partners. To endorse the contribution of the International Design Expert (IDE) the authors used the third-person structure and personified the real voice of the international expert in different quotes along the document. We came to the conclusions that the collaboration needs a framework and a well-defined scope; it also depends on clarification of roles for each actor: students, company employees, international external expert and university professors; as well as the importance of considering legal aspects involved before starting the collaborative project.

*Keywords: Collaborative projects between industry and education, Design education, International Design Expert*

## 1 INTRODUCTION

### 1.1 University-Industry Collaboration

Universities are experiencing a cultural transformation to play a significant role in knowledge-based society having different missions: the teaching university, the research university and the entrepreneurial university that encompasses teaching, research, and service for society. They represent the main actors of societal transformation, because they train the future workforce and the leaders of tomorrow, setting “knowledge” as the primary production factor in the global economy [1]. According to Etzkowitz and Dzisah (2015) strategies such as “Professors of Practice” appoint to develop internal competences in order to create this sustainable and permanent bond to industry [2]. Therefore, the implementation of new learning strategies in classrooms, and the generation and implementation of diverse knowledge experiences structure this transformation. It is well known that learning has shifted from the mere transmission of information in the classroom, to providing relevant experiences and projects in real-life contexts for the students themselves [3]. Different studies from literature explain that collaboration between the university and the industry is perceived as a vehicle to gain new expertise through knowledge exchange and its increasingly finding different strategies to mutually benefit to collaborate [4] [5] [6] [7] [8] [9]. In “The culture of collaboration”, Rosen explains that a genuine collaborative partnership should have certain qualities: “ten cultural elements of collaboration: trust, sharing, goals, innovation, environment, collaborative, chaos, constructive, confrontation, communication community and value” [9]. These practices could be applied in different levels such as research departments, administrative and organisational structure and academic programmes. Particularly, this paper describes the best practices and limitations of making university-industry collaboration possible in an undergraduate context, exploring different mechanisms in

lowering barriers related to the orientation of universities, and to the transactions involved in working with different partners.

## 1.2 Beyond the Traditional Approach at Universidad EAFIT

Since 1999, Universidad EAFIT has been the only university offering a Product Design Engineering (PDE) undergraduate programme in Colombia. PDE is a 5-year bachelor's degree programme that combines different professional fields –engineering, design, production, management, and marketing– aimed at developing new products that meet market and industry needs. Design Project (DP) courses are the core of the PDE programme, and depending on its main learning objective, it has three tutors participating at the same time. The main objective of this is for students to understand all the different disciplines involved in developing new products and services [10]. Being aware of the importance of bringing diversity to PDE Programme by exploring new experiences in education, the collaborative project between PDE Department, a furniture company (CDI Exhibiciones) and the International Design Expert Paul Rowan (Umbra co-founder) was structured in the academic frame of the “International Design Learning Experience (IDLE)” as a DP project” (See Figure 7: The IDLE Triad Framework); making it a unique classroom experience beyond the traditional approach. IDLE is an innovation educational strategy of PDE that has distinctiveness and allows achieving a better understanding of the socio-cultural and technological global context of an academic community, which includes activities inside and outside the classroom to generate positive and memorable learning experiences. During the 2017 IDLE version, one of the external activities was visiting the Ambiente Fair in Frankfurt (<https://ambiente.messefrankfurt.com>) having as a main purpose to read and understand technology and design trends to later use them into the DP project. Among other external activities, students and professors visited some companies, such as, Mykita, Porsche, Braun, Meissen Porcelain and Lamy. Thus, eleven undergraduate students of 4<sup>th</sup> year of Product Design Engineering designed five new concepts of home and office storage systems with the design brief by CDI. Paul Rowan was invited as the International Design Expert together with a group of professors of different areas from the PDE Department, such as user research, design aesthetics and manufacturing processes.

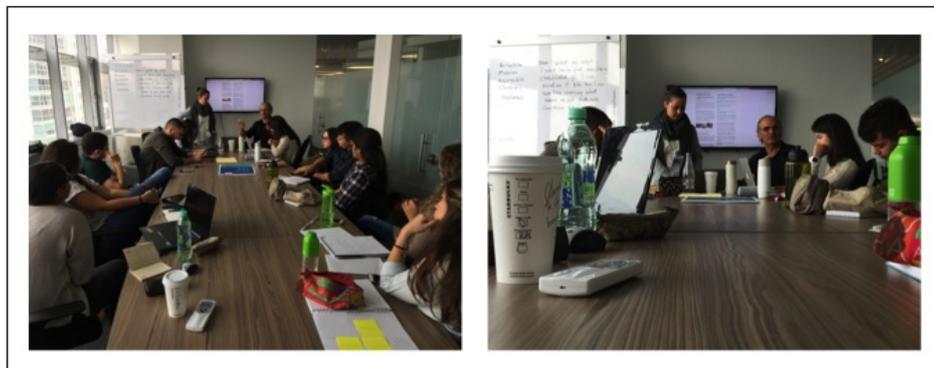


Figure 1. Activities with students, professors and the International Design Expert

CDI Exhibiciones produced the five prototypes and they were exhibited at the Design Fair in “Medellín Design Week 2017”, Medellín-Colombia ([www.lfdd.com.co](http://www.lfdd.com.co)) that took place in June 2017.



Figure 2. Exhibition at "Medellín Design Week 2017"

## 2 TEACHING AND LEARNING STRATEGY: COLLABORATIVE PROJECTS

The essence of collaborative projects between university and industry is to find a space where pedagogical strategies are focused on activities that: a) foster innovation within the company to explore different solutions and opportunities through the design of new concepts; b) grant students to have the experience of participating in a real industry project; and c) bring update knowledge to professors allowing diversity for their role.

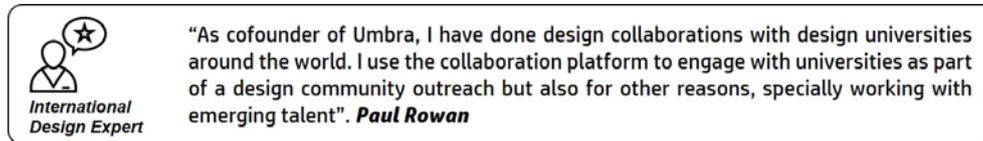


Figure 3. IDE Quote: Benefits of university-industry collaborative projects

The new concepts that the students bring to the company are fresh and more creative, and they are also capable of pushing the company's manufacturing processes, in order to explore different solutions and opportunities.



Figure 4. IDE Quote: Benefits for the company

On the other hand, since the students that participate are in 4<sup>th</sup> year, this collaboration project is a unique opportunity for these junior students to live and experience a real industry challenge, even before their internship semester of the programme that happens at 5<sup>th</sup> year. By working with the company, they have the chance to learn and experience in practice.

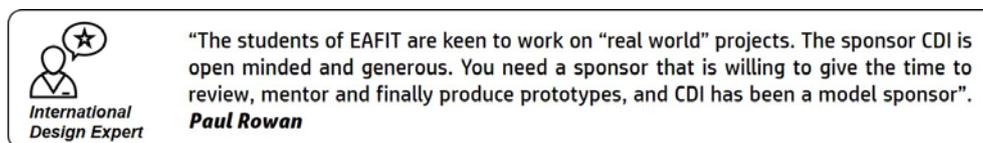


Figure 5. IDE Quote: Benefits for the students

Finally, a collaborative project also updates knowledge to professors because their teaching practices can incorporate other strategies and new activities that are closer to real industry, it also invites the professor to go beyond the classroom bringing diversity to PDE Programme and to avoid conformity and standardisation into the educational experience.

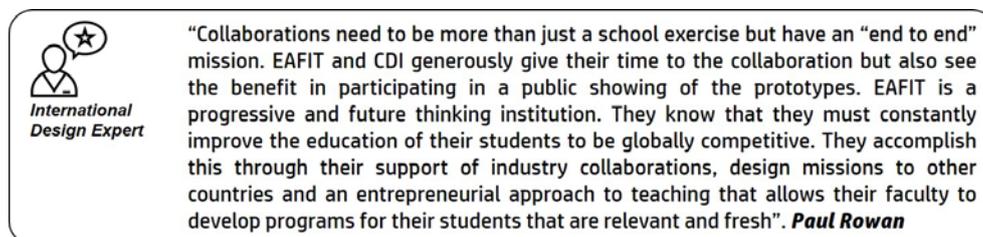


Figure 6. IDE Quote: Benefits for the university and professors

## 3 THE IDLE TRIAD FRAMEWORK

As part of the IDLE strategy, the triad framework includes involving three different partners: The University, The Company and The International Design Expert. In a joint effort, we endeavour to organise a full semester project in which academic requirements meet and ensure students to earn a great deal of real-life experience. In our project, EAFIT as an institution has regularly renounced commercial exploitation, but has reserved the right to publish all work and make use of it in research and education. At the same time, students' moral rights regarding intellectual property are preserved.

Before starting the collaboration project, the brief given by the company must have a well defined scope, and the rewards that the company gives to each project. At the end, students could gain additional insights for the project and received feedback from different stakeholders. This makes internal collaboration within the faculty a mandatory prerequisite for smooth and successful external partnership.

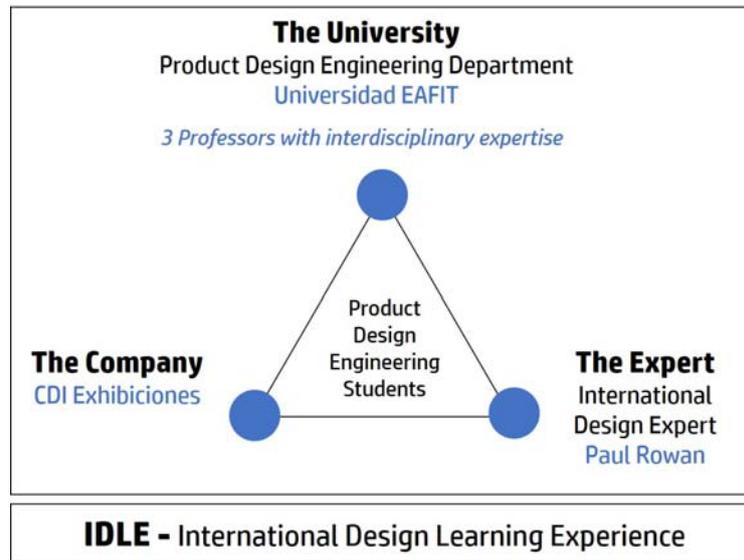


Figure 7. IDLE Triad framework

The IDLE triad framework was defined since the starting phase of the project, this enabled to structure clarity towards the role of all entities involved. The university defined 3 professors to follow the student’s process, each with 3 different expertises: user and market research, product aesthetic language and manufacturing processes. Besides this, the international design expert played an important role because it was complementary with the university professor specially in industry-based knowledge. The students are positioned in the centre of the triad because they have the highest impact in this project. Students were selected according to different criteria selection like: GPA, English proficiency, variety of learning preferences and levels and gender variety.

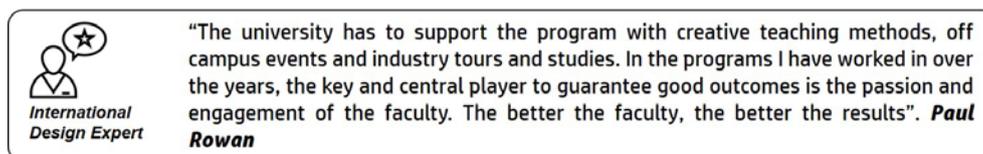


Figure 8. IDE Quote: Strategy and Faculty engagement

As a similar strategy as the “Professors of Practice”, the role of an international design expert from the industry, who collaborates and works with the students, professors and employees for one semester, is a way to improve the design process and the design community. It is also a different mechanism for lowering barriers related to the transactions involved in working with different partners. The step by step included: a) a four weeks’ preparation regarding German design and German cultural background before visiting Germany; b) a two week mission to Germany; c) returning to Colombia for developing the academic course of 12 weeks; d) building the prototypes; and, e) finally, preparing all for the local design fair in the CDI Exhibiciones and Universidad EAFIT booth. What makes this collaborative project so remarkable is the opportunity to link design, engineering and business with creativity and innovation.

#### 4 RESULTS AND OUTCOMES

What matters is not only the outcome but also impact – how the new knowledge derived from collaboration with a university can contribute to a company’s performance, students’ learning experience and diversifying professor’s role [8]. The outcome from EAFIT’s project was a good

practice model for successful university–industry research collaborations, and the company produced the five new concepts for home and office storage systems.



Figure 9. Five prototypes

The exhibition of the prototypes at a local fair, as an outside classroom activity, makes the course a distinctive one that goes beyond the traditional approach of a standard Design Project course (DP) at Product Design Engineering Programme; and for the students it is a unique learning strategy.

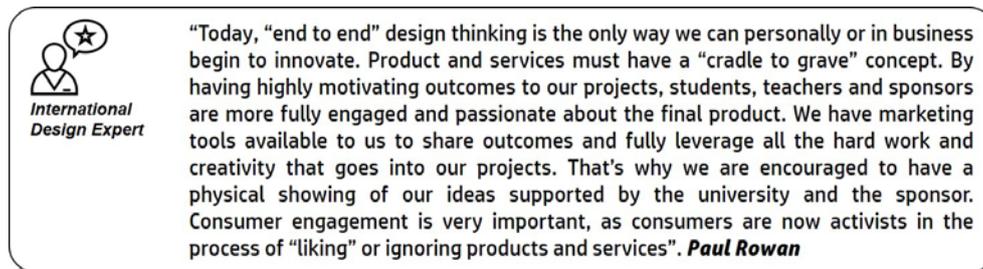


Figure 10. IDE Quote: "End to end" design thinking

## 5 DISCUSSION

Vygotskij (1978) claims that students have more to gain through active participation in the learning experience and increase potential development through problem solving in collaboration with other peers [11]. Among best practices, one can say a small group of maximum 12 students, a company that is willing to explore new things with a relationship based on friendship making sure to have an effective communication. Furthermore, having an international design expert that is enthusiastic and dispoable to share all his/her expertise, signing a "confidential document" between all partners before starting the project, inviting the company's employees to participate even from the early stages of the design process, and making the company build the prototypes.

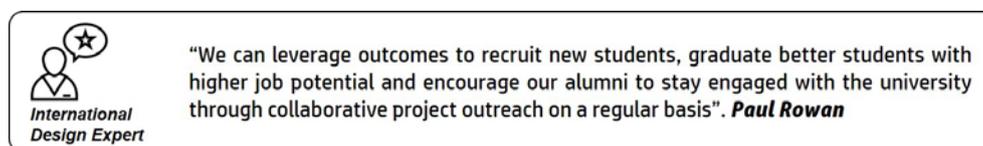


Figure 11. IDE Quote: Leveraging outcomes

Regarding the limitations, one could say that junior students must be better trained in communication and drawing skills for presentation; also, the semester length (which is 16 weeks) is a short time to arrive with the product up to detail design; and finally, the academic schedule might not necessarily align well with all partners' industries own fast-paced requirements like assembly or manufacturing processes, because timing is very different between academy and industry.

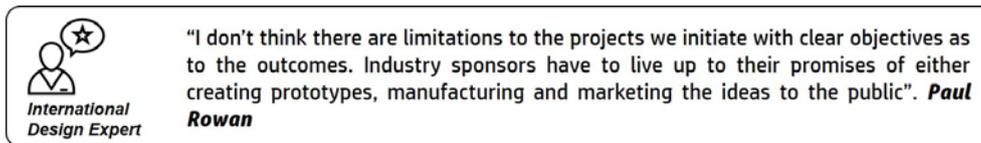


Figure 12. IDE Quote: Engaging industry sponsors

We came to the conclusions that the collaboration needs a framework and a well-defined scope; it also depends on clarification of roles for each actor: students, company employees, international external mentor and university professors; as well as the importance of considering legal aspects involved before starting the collaborative project.

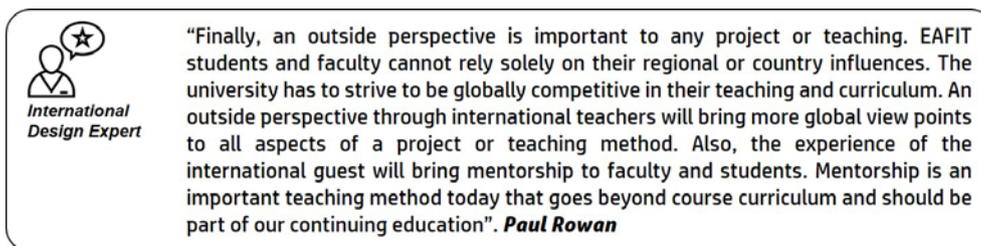


Figure 13. IDE Quote: University striving to be globally competitive

Going beyond the traditional approach of collaborative projects is a recommended opportunity for product designs programmes, because not only it is replicable, but also it outreaches more than expected.

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