HUMAN-CENTRED SUPERVISION: SHAPING FUTURE DESIGNERS THROUGH COACHING IN FINAL YEAR PROJECTS

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ABSTRACT
In design education, final-year projects connect theory and practice as a capstone experience. Traditionally, supervision has been directive, focusing on task-oriented guidance and hierarchical knowledge transfer. However, with the design profession valuing collaboration, adaptability, and reflection, this model may inadequately prepare students for real challenges. A coaching approach to supervision offers a viable alternative.
This paper argues that coaching-based supervision aligns better with contemporary design education by emphasising self-directed inquiry and iterative learning. Coaching transforms the supervisor's role from instructor to facilitator, helping students engage in critical reflection and independent problem-solving. Moving beyond assessment-focused models, coaching allows students to explore design complexities and take ownership of their projects.
The paper examines coaching in a Product Design programme, demonstrating how this method improves student engagement, creativity, and professional readiness. It introduces "exit velocity" as a measure of coaching effectiveness. Findings show that coaching enhances design skills and provides graduates with vital industry-ready abilities, including adaptability, critical thinking, and collaboration. Educators can create a learning environment that reflects real-world design challenges by integrating coaching principles into final-year project supervision. This paper advocates for a shift in supervision models to ensure graduates are competent, reflective, and autonomous practitioners capable of navigating complex professional landscapes.

Keywords: Design education, product design, reflective practice, studio culture, design coaching

1   INTRODUCTION
1.1 Background and Context
Final-year projects represent the culmination of a design student's academic journey and are pivotal experiences that seek to bridge academic theory and professional practice [1]. These projects challenge students to combine their technical skills, creative thinking, and problem-solving abilities with real-world design problems [2]. However, as the demands on the design profession evolve to prioritise collaboration, empathy, and innovation, traditional approaches to supervision may no longer suffice.
The traditional role of the supervisor in a final-year project is often one of a directive approach that frequently emphasises task-oriented guidance, where supervisors provide specific instructions and expect students to follow prescribed methods or solutions [3]. This approach often creates a hierarchical dynamic, positioning the supervisor as the sole expert and the student as a passive recipient of knowledge. This can lead to students hesitating to explore unconventional ideas, fearing deviation from the supervisor's guidance.
In their 2019 paper [4] Coutts and Marshall suggest engaging students more meaningfully to foster autonomy.

> *Fostering a sense of project ownership and responsibility ensures students are engaged in each meeting and not simply lulled into a "passive" state of deferring to an academic member of staff.*

This emphasis on ownership aligns with the need for supervision models prioritising engagement and self-direction; however, it overlooks a student's academic journey, such as varying experience levels,

confidence, and capacity for self-directed learning. Supervisors must recognise that students may need different support forms at various developmental stages. A coaching model helps students gain confidence to test ideas, make mistakes, and reflect on their learning. Supervisors can foster a culture of curiosity and experimentation by focusing on guidance rather than control, building a more rounded graduate.

1.2 Focus of the Paper
In today's pedagogical paradigm, supervisors often focus on directive instruction, providing guidance, setting tasks and goals, and defining project expectations for learners. Their role primarily involves knowledge transmission and structure. As a result, capstone project outputs centre on assessments rather than addressing learners' individual needs for life after formal education.

This approach often goes against our natural shift toward social constructivist co-creation of educational experiences developed through studio and practice-based education models [5]. However, the high-stakes nature of the capstone project aligned with the anxiety many students have around employability and final grade classification often leads to a reinforcement of more behaviourist tendencies.

On the other hand, a coaching approach focuses on empowering students to make independent decisions and explore and reflect on how their actions can be developed and improved with a focal point beyond that of the final degree classification [6]. This approach should focus on metacognition to allow students to become more aware of their practice and develop competencies that align with their future career goals [7]. In this approach, the journey of the final year project and the opportunity it provides for creative reflection are as valuable an output as the project outcomes themselves.

2   COACHING VS. TRADITIONAL SUPERVISION IN DESIGN EDUCATION
2.1 Traditional Supervision Models
As mentioned earlier, the conventional supervisory model, although seemingly collaborative in nature, often reverts to being one which follows more behaviourist educational dynamics and focuses on task-oriented guidance, prescribed methods and hierarchical dynamics [8], [9]. This is at odds with the approach often taken in studio-centred design courses where the emphasis is on cooperative and collaborative learning. Frequently, especially with the high stake's nature of a major project, students revert to a focus on meeting assessment criteria rather than effectively exploring a design's problem space [10]. This reduces opportunities for a student to grow and develop, just at the point where agency matters most in allowing them to develop their own identity and understanding of their interpretation of their role in design.

Often, once a final year design project is started, the student will realise how important this project is regarding their future journey as product designers. The implications of the project on their employability and ultimate representation of their abilities leads many to lose all confidence in themselves and in what they have learnt [11]. This loss of confidence leads to a natural tendency to reinforce the hierarchical behaviour and for supervisors to direct student endeavour rather than unlocking the project together. It is easy, when faced with a floundering student to give up on being a guide at the side and return to the position of the sage on the stage, which leads to students following guidance rather than following their own instincts and taking risks.

2.2 Introduction to the Coaching Model
Coaching in education is not a new idea, but it appears to be a supervision strategy that many are not familiar with. Educational coaching looks to models of professional development in shifting the role of the supervisor from instructor to facilitator. Guidance is provided through questioning, encouragement and empowering of students to solve problems for themselves rather than through rigid instruction [12]. Within the final year project, it is a particularly effective strategy as it supports students in developing autonomy, encouraging them to take ownership of the project. This accompanies the shift in focus to self-directed inquiry that most capstone projects have. By fostering self-reflection, the role of the supervisor moves to guiding students to critically analyse their own decision systems to refine their approach allowing for reflection-in-action to occur dynamically [13].

Within a coaching model, iterative development is not just a design practice but also a fundamental learning strategy. Within a directive model, students often look to the supervisor to acknowledge a *correct solution,* which may impart the bias and process of the supervisor's practice rather than developing the students. A properly iterative and reflective approach better mirrors the reality of

professional practice where problem spaces are more complex and less predictable, and adaptability and resilience of a professional are key traits [14].

2.3 Benefits of Coaching in Education

The Supervisor as Design Coach model presents several distinct advantages over traditional supervision, promoting student autonomy, creativity, and self-efficacy [7], [11]. These competencies are crucial for students as they transition from university to professional work, highlighting the importance of developing them for a strong exit velocity.

A design student's professional practice requires independent decision-making, justification of choices, and accountability for outcomes. Coaching supports this by shifting supervision to a guiding role that encourages reflection rather than direct instruction [12]. With the open-ended nature of most design challenges, these are critical in ensuring a student is confident to enter the workforce.

A coaching mindset can significantly impact a student project by creating a safe environment that empowers students to experiment with their designs [15]. Students facing the complexity of a final year design project often rely on instruction instead of challenging their assumptions. A coaching approach reframes failure as a key part of the design process, allowing supervisors to reset and support student engagement rather than simply directing it [11]. Empowered by building this resilience in practice, students deliberate more creatively and are more willing to take risks, creating more forward thinking and innovative design results.

3 CHARACTERISTICS OF THE SUPERVISOR AS A COACH

As the nature of a final year project brings many highs and lows in the student's experience, both in their work output levels as well as in their personal emotional stages, a supervisor's main role is to always strengthen student's morale and motivation. Throughout this voyage, the supervisor's core characteristic must be one of ardent interest paired with a positive trustworthiness that focuses on each student's individual needs. Fostering enthusiastic curiosity, demonstrating empathy through non-judgemental observations, carefully spotlighting blind spots by challenging present views, and creating an open dialogue through active listening, questioning and reflecting are priorities. The supervisor's coaching must encourage action and keep the students moving at a pace that keeps their project work improving incrementally, fully aware that the final year project is a marathon and not a sprint.

As each project is very individual and differs vastly from student to student and as every student themself brings different aptitudes, skill sets, and diverse expectations as to the goal of their study journey, the feedback also needs to be carefully tailored to suit each student in a varied way and with a diverging emphasis. The supervisor's deep knowledge of each student helps to create personalised feedback styles in modified strength and constructive detail. Intuition is a strong tool to be implemented in this scenario as it is important to draw the student out of their comfort zones, inspire them to think and act, and carefully and empathetically guide them in the best direction.

The supervisor needs to interpret and synopsise the students' analyses and prompt them to help themselves without getting too deeply involved in the actual project work. Which shows the facilitator function of the supervisor being key to student's success rather than directional advisor.

During group critique sessions, the supervisor takes on the role of chair and fosters a practice of communal support in promoting a reflective recounting of the student's current effort and motivating all attending students to give meaningful, constructive and positive feedback in aid of each workflow. This inspires the students to view all progresses from different perspectives which not only furthers each other's projects but also empowers the students in their own professional development as human-centred designers.

Having successfully completed the self-directed design of a feasible, viable, and desirable product for a specific market segment, helping users in a meaningful way, is a significant milestone and achievement for the students. The visible proof of applied knowledge and accomplishment culminating from four years of intensive study is elating and clearly marks their readiness to advance in their professional journeys outside and beyond university life. While supporting but never carrying the students through their major project work, the supervisor's subtle coaching techniques instil the rich confidence in the students that they are capable, adaptable and well able to move onto new challenges, excited for their bright futures in product design and development roles.

4   COACHING IN FINAL YEAR PRODUCT DESIGN PROJECTS

In final year, the students enter a year of perfecting their skills, self-motivated, verified and displayed via a carefully selected problem to be solved. Each assigned supervisor first needs to understand the student's motivations and gain their trust to be able to help them in the best possible way. The supervisor endeavours to identify each student's strengths and weaknesses, how they learn and perform at their best, and what their capabilities, learning objectives and personal goals are.

This is easier to implement if the supervisor has been engaged with the students during all years of study. From first year onwards the supervisor works in studio settings alongside each student, witnesses their failures and successes, keeps visibility on all acquired knowledge, guides reactions and responses to feedback, building the students resilience and confidence throughout. This deep knowledge of each student's abilities is crucial to a successful coaching approach in the accumulation of the final year project.

The students start into their project work filled with excitement and are eager to begin work on this most important milestone of their lives' learning up to this date. Some apprehension settles in at the gravity of the task at hand and often students lose their confidence in themselves and in their knowledge. The supervisor is able to remind the students during the course of the project work of their accumulated understanding from past modules and other achievements where similar issues had been dealt with previously and problems solved successfully.

At many points in a student's final year journey, uncertainties and doubts arise and hinder progress and action. It is important for the supervisor to settle the student's nerves, to reassure them, to prompt them and broaden their horizons as to understanding the wider world around them and finding inspiration in other areas of life and living. Active listening, questioning, reflecting and adopting an open dialogue with the students is a powerful tool to foster enthusiasm and curiosity at all stages of the project work. The supervisor needs to gently intervene, investigate, reflect and instil a trust in their own instincts, passions and abilities to make well-informed, good choices for their projects, representative for their lives and futures.

The supervisor needs to continuously monitor student's progress and keep the students on target as per the prescribed timeline and their chosen, curated project aims. At the point of developing the final product, the system, the interactions between the object and the users, the supervisor is not just the technical advice-guide, but needs to push the student to active doing, exploring and prototyping efforts. The leap from the digital, planning realm into the physical, three-dimensional one is another angst point in the project advancement. The earlier this gap is bridged, the more confident and elated the student will be at all progress being made and the project will ultimately reach a better result and effectiveness for application.

Managing expectations and herding the students towards their final presentations and achievable, realistic end goals, is as important as reminding them of their expert status in each of their chosen topic areas at this point for the successful concluding of their projects and reaching the classification they desire and require for their onward journey exiting their studies.

Activities & Requirements — Timeline

Primary & Secondary Research, Creation of Custom Brief & Values — 6 weeks

Ideation, Concept Selection & Development, Product Design Specifications — 6 weeks

Development of Product, Engineering & Proof of Concept Prototyping — winter break + 6 weeks

Finalising of Product, Business, High Fidelity Prototyping, Video Creation, Presentation — 6 weeks + spring break

Exhibition Preparation — ca. 4 weeks

Milestones

Project START | IR 1 Research | IR 2 Conceptualisation | IR 3 & Initial Prototypes | Final Report & Presentation | Exhibition FINISH | EXIT studies

ENTER work life

Student's Feelings — positive / negative

- Excitement at start to important milestone
- Apprehension and doubts
- Relatively easy start
- Somewhat unsure of topic choice
- Very well able to conduct methodical research
- Lacking in reporting
- Slight disappointment but prepared to improve
- Ideation start very difficult for most
- Creative freedom
- Difficulty in finding breadth of solution opportunities
- Selection of final design challenging
- Reporting last minute
- Relief as product direction decided
- Engineering phase easier for some students as clear task order ahead
- Decision making and engineering difficult for some
- Lack in motivation and exhaustion settles in
- Difficult leap into physical 3D modelling
- Big push towards IR3
- Relief when interim exhibition ready
- Final sprint towards end goal
- Polishing and finalising
- Very tired and struggling to keep momentum
- Excited as end in sight
- Elation at finish and achievement
- Insecurity as to next steps and career start
- Knowledge of own capabilities with proof in professional portfolio

Supervisor's Tools

- Enthusiastic curiosity
- Structure & guidance to research directionality
- Positivity & trustworthyness
- Focus on individual needs

- Demonstrating empathy
- Motivation & facilitation of creative thinking
- Spotlighting blindspots
- Listening & prompting

- Non-judgemental observation
- Technical advice-guide & push to active doing
- Monitor progress & keep students on target as per timeline & project aim

- Challenging current views
- Encouragement & emotional support
- Sensitive to different student aptitudes

- Fostering open dialogue
- Active listening, questioning & reflecting
- Reminding students of acquired knowledge
- Acknowledge strengths & weaknesses, harvest abilities
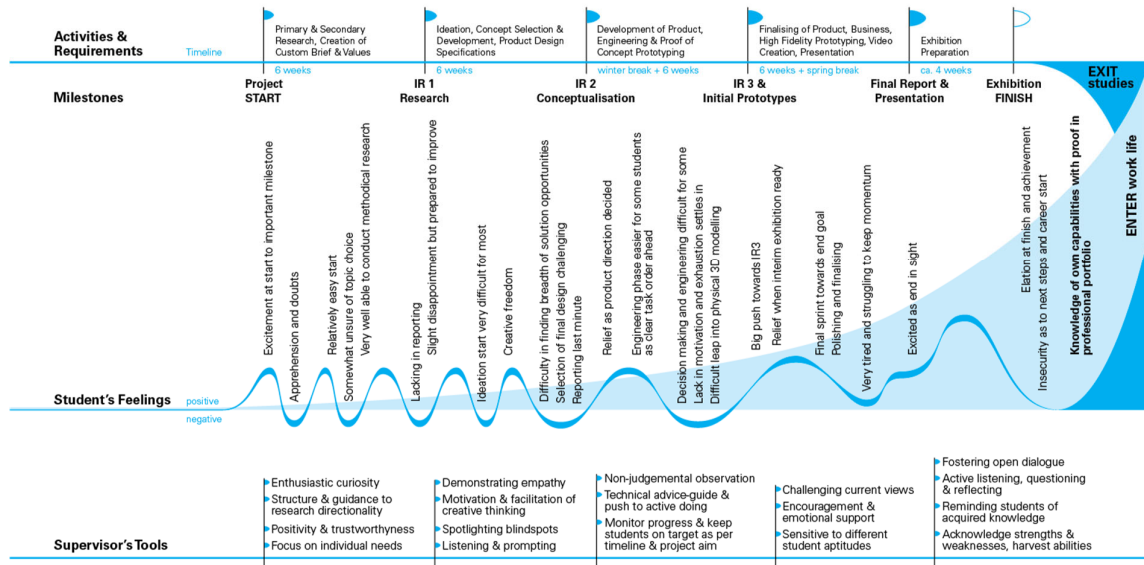
Figure 1. Journey Map - Final Year Project Supervision

5 PREPARING STUDENTS FOR THE DESIGN INDUSTRY

The reflective and supportive nature of coaching-based supervision opens the students' mind to critically reflect on their own practice and work ethic as well as appropriate selection and application of skills learned. Listening, prompting and synopsising allow students to become more aware of and active participants in their design work, find their voice and trust their instincts and experiences. This enhances and hones their collaborative problem-solving skills and makes them adaptable to face and resolve any challenge with a clear analytical mindset, essential for succeeding in human-centred design.

This human-centred approach and critical, lateral thinking refining throughout their product design studies culminating in their final year major project enables the students to produce an array of very different projects, forming graduates with a broad skillset range focussed on the human element of design and design development. Polished, broad and remarkable student portfolios are proof of this, which open the doors to great prospects and guarantee strong employment opportunities from the get-go for the graduates.

As the students have been immersed and are integral motivator for their own product design study journey, they are very well able to autonomously decide, shape, and critically view their professional trajectory and future project work. As teamwork, honest feedback, and positive evaluation of ever-changing project demands within all viewpoints of human-centred product design have prepared them for their professional careers, the graduates will thrive and blossom in a collaborative and especially multidisciplinary setting.

6 CONCLUSIONS

A supervisor's role in final-year product design projects significantly influences student confidence and fosters their growth into autonomous design professionals. Transitioning from a directive approach to a coaching model encourages independence, creative exploration, and essential competencies in future design professionals. Coaching creates a supportive yet challenging environment for students to shape their journey.

Treating project supervision as collaborative rather than hierarchical encourages students to reflect on design choices, take risks, and trust their instincts. This approach mirrors real-world industrial challenges, where navigating complexity and justifying ideas are essential.

Recognising that all students have different aptitudes, strengths, passions, skill sets and emphases in their project work as well as on their potential career paths, coaching ensures they develop as individuals. Leaning into these differences is what makes a student unique to work with and supervise, but these divergences are also highly valuable for their future employability and as assets to any team. Fostering

and supporting their talents will ultimately result in better graduates who are confident and critical young people with great prospects ahead.

With supervisors focusing on a student's exit velocity over their final year project, the ultimate goal of the project supervisors becomes one that ensures graduates not only to complete their degree programme but to progress into industry with momentum. The prouder a student is of their achievement, project journey and final year project solution, the more confident and convincing they will be presenting their work and their abilities during the next stage of their adventure. A well-supported capstone project is not just an academic exercise but the launchpad required to reach the very best future career opportunities for each and every graduate.

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