

## Article

# How to Teach Innovativeness Using the Case Study Method in Property Education

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**Abstract:** Conventional real estate education emphasises the application of knowledge from various disciplines. While this approach has its merits, its efficacy is affected by the stage of development of the discipline referenced. A notable case in point is the adoption of financial technologies (or FinTech) in real estate. How we prepare our next generation with creative thinking skills, an innovation mindset, and a risk-taking attitude to embrace the rapid transformation to an innovation-based economy is therefore critical. In this study, we advocate that the case study method is an effective teaching pedagogy that enables students to learn from analysing real cases and applying knowledge from a complex discipline in real estate. The method motivates students to acquire new knowledge to establish new practices and theories in innovative applications, such as FinTech, in real estate. This study provides a teaching reflection on adopting the case study method in an undergraduate Property Technology (PropTech) course. Students are required to use real business cases to analyse how FinTech is solving real estate problems. Discussions with lecturers and peer reviews in the online discussion forum enable students to wrestle with the knowledge they learn and encourage an atmosphere of knowledge co-creation.

**Keywords:** FinTech; case study method; teaching reflection



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## 1. Introduction

Innovativeness is challenging to teach because of its inherently unpredictable nature [1]. This mindset conflicts with the conventional constructs of education where students are taught to think and act according to a set of existing guides, to research and reproduce model answers, and to be assessed against quantifiable evaluation metrics. Innovativeness requires almost the opposite mentality. In order to be innovative, one needs to abandon judgment, open oneself to all possibilities, and then have the confidence and courage to adopt a trial-and-error approach and embrace failures on the path to success. The fact is there are no model answers to innovation. However, it is a myth to suggest that innovation cannot be taught. On the contrary, it is extremely discipline-oriented but in a very different way. Being innovative requires learning by doing and experiential learning. The skill set cannot be acquired using a step-by-step codebook but through a sequence of exploration.

Teaching for innovation requires a different approach [2], depending less on pre-prepared materials and instead working on creative capacity building, i.e., mastery of practice. This may sound simple, but it could be a big question for teachers in the current higher education environment that requires many quantifiable metrics to assess students. Creating safe conditions for risk-taking, rewarding curiosity, encouraging divergent thinking, and developing a mindset of constructive critique will help students let go of fear and develop confidence [3]. Therefore, teaching for innovation requires learning a dynamic give-and-take experience, not a one-way didactic lesson delivery of imposed content. This also requires a different perspective on how individuals experience personal growth rather than measuring performance against a uniform target. This needs a mindset of collective

effort in co-creating knowledge with teachers. Teaching innovativeness in this way can be rewarding, but it will take hard work to bring this thinking into traditional education [4]. This article proposes the use of the case study method to respond to the challenges of teaching for innovativeness.

In this article, we will provide a teaching reflection on an undergraduate course in Property Technology (PropTech) using the case study method as the teaching pedagogy. The case study method is as old as Harvard Business School and was introduced in the curriculum during the school's 1908–1913 “experimental phase” [5]. The case study method is a common tool for business teaching, which has been widely used in business and management education since its first use by the Harvard Law School in 1870 and the Harvard Business School in 1911. The case study method provides students with an experiential-learning process in which students make discoveries on knowledge by working through authentic, real-world problems and solutions. This pedagogical approach trains students to think creatively, encourages collective debates of ideas and stimulates inductive decision-making [6]. Case-method-based classes usually involve role-play exercises in which students are engaged with in vitro reconstructions of business problems similar to those faced by business executives. When the world is transforming into a technological and innovation-based economy, a continuing challenge on how to teach creative thinking, innovation and risk-taking by the case study method has been raised [7].

FinTech is a good candidate to address the challenge as it is viewed as a co-evolution and convergence of finance and technology [8], disrupting traditional financial practices and theories. Case studies on FinTech not only help provide new information for re-establishing new practices and theories in finance but also enrich the case study method by introducing creative thinking, innovation and technologies. Problem statements of FinTech applications in real estate markets are posted on the Discussion Forum. Students are required to use real business cases to analyse how good or bad FinTech is at solving problems. Comparing two cases is usually suggested to evidence the argument, as “the case method is about stating and comparing opinions and learning from the differences and similarities” [9]. Discussions with the lecturers and classmates enable the students to wrestle with the knowledge learnt with their peers and encourage an atmosphere of knowledge co-creation. Exemplars of the case studies are also published on LinkedIn and Medium to share their findings from the latest knowledge of PropTech.

This paper is structured as follows. The ensuing section reviews the relevant literature on innovativeness education. The Methodology section explains the reflective teaching approach. The Materials section discusses the class structure, learning materials and teaching methods. Then a Results Section and a Discussion Section present and discuss the findings. A Conclusion Section concludes.

## 2. Literature Review

Creativity can have different definitions in different disciplines [10], and this study focuses on entrepreneurial creativity. Hamidi, Wennberg & Berglund ([11], p.304) contended that “creativity is an important antecedent of entrepreneurial intentions”, and they found that “exercises in creativity can be used to raise the entrepreneurial intentions of students in entrepreneurship education”. However, creativity is not simply a skill or knowledge that can be taught or practised by traditional courses. Bandura [12] argued that motivation and capability beliefs (i.e., self-efficacy) are necessary conditions for creative productivity and discovering new knowledge. The hypothesis that self-efficacy influences people's creativity has also been confirmed in many studies [13,14]). Zhou & Bartol [15] and Cheng et al. [16] also posited that empowerment is a key determinant of employees' creativity and innovativeness. In other words, the assessment criteria for the learning activities of entrepreneurship programmes cannot focus on just right or wrong, but more on innovativeness or new knowledge created [17].

Entrepreneurial education has been found to be conducive not only to individual creativity [18] but also to creativity in the university [19]. The former is the self-perceived

creative capacity, skills and abilities of individuals, while the latter is the supporting atmosphere of creative problem-solving. There have been several models of entrepreneurial education. For example, Weng, Chiu & Tsang [20] suggested using the 5E (engage, explore, explain, elaborate, evaluate) learning cycle for students to develop creativity through real-world problems. Rigolizzo & Amabile [21], on the other hand, proposed four stages of the creative process, viz. problem identification, preparation, idea generation, and idea evaluation and implementation. Zhang & Wang [22] put forward a model of six dimensions: creativity, initiative, interest, ideation, independence, and concentration of students. All these models emphasise generating new ideas to encourage creativity.

With the advancement of technologies, students' learning process of innovativeness in entrepreneurship programmes is found to be enhanced by using IT, robotics and video technologies [23–25]. However, there have been very few studies on creativity and innovativeness education in FinTech and PropTech. This study aims to fill the research gap.

### 3. Methodology: Reflective Teaching Approach

This article adopts a reflective teaching approach to put forward the case study method as a pedagogy in teaching for innovation. "Reflection has become an integral part of teacher education" ([26], p. 73). Reflective teaching has been introduced to education due to the shift of paradigm from a positivist to a constructivist perspective and started to gain traction. Apart from some potential flaws and pitfalls, reflective teaching provides teachers with various techniques to become more conscious of their actions and feelings in and outside the classrooms [27]. As Akbari ([28], p.205) puts, "it is good to reflect, but reflection itself also requires reflection." Indeed, reflection "is a well-defined and crafted practice that carries a very specific meaning and associated action" ([29], p. 33). To begin with, reflective teaching "at a very general level involves thinking about one's teaching" ([30], p. 8]. Jay and Johnson ([26], p. 76) defined reflection as "a process, both individual and collaborative, involving experience and uncertainty". Reflection-driven exploration of teaching can have several merits. The process can facilitate educators gaining better insights into teaching from both a theoretical and a practical perspective and can enrich teaching and learning processes [31]. Akbari also states that teachers are instrumental in enhancing reflective teaching practices in the classroom, and one way to empower teachers with their academic counterparts is through reflection [28].

Reflective teaching "is comprised of identifying questions and key elements of a matter that has emerged as significant . . . evaluate insights gained from that process with reference to additional perspectives, one's own values, experiences, and beliefs and the larger context within which the questions are raised". As far as reflective teaching is concerned, a variety of models have been discussed in the literature. This article, in particular, makes reference to Zeichner and Liston's model of reflection [32]. Their model consists of the following five dimensions, which include reflection phases rather than reflection content. These include (a) rapid reflection, in which "teachers reflect immediately and automatically while they are acting", (b) repair which "is still reflection-in-action, but here there is a quick pause for thought", (c) review, which "is interpersonal and collegial, and can happen at any time during or after the teacher's work day", (d) a more systematic reflection-on-action over a period of time in which "the teachers' thinking and observation become more systematic and sharply focused around particular issues" and (e) re-theorising and research in which "reflection is more abstract and rigorous than in the other dimensions". In the following sections of this article, we are using Zeichner and Liston's reflective teaching model to summarise our teaching experience in using the case study method in teaching for innovation [32].

### 4. Class Structure, Learning Materials and Teaching Methods

This PropTech course is a level 3 course offered for about 100 undergraduate students with a Bachelor of Property. It applies the case study method to make discoveries on PropTech knowledge by working through authentic, real-world problems and solutions

related to PropTech. The course provides learners with a practical understanding of digital innovation and entrepreneurship in Smart Real Estate, ConTech, FinTech, Sharing Economy, and Smart Cities. It embraces a 'blended learning approach and features online lectures streamed 24/7 via the Learning Management System Canvas along with regular in-class, face-to-face workshop sessions (tutorials) to reinforce the knowledge gained from the preceding online lectures. The workshop sessions are designed to be interactive and require the active participation of students. Physical attendance during these in-class sessions is highly encouraged, and progress engagement quizzes are usually related to the workshops to reinforce students' learning.

In this course, students are required to actively and critically engage with the major, complex challenges that corporations/start-ups currently face in the rapidly changing business and global environment. The cases students come across in this course represent examples of PropTech applications in real estate and how it has reshaped the property market landscape. Acknowledging and understanding those paradigm shifts in new technologies and how this has transformed the property sectors will provide students with a solid ground in reimagining the future of property businesses. Upon the completion of this course, students are expected to be able to:

1. Identify, understand and evaluate PropTech-enabled solutions;
2. Explore the relationship between digital innovation and entrepreneurship;
3. Evaluate the relationship between digital innovation, the sharing economy and property markets.

Learning by using the case method requires students to show evidence of engagement and analysis to create a knowledge-co-creation learning atmosphere. Therefore, one of the major assessments in this course would be primarily through discussion and peer review with classmates through the online discussion board and the final course project. As shown in Figure 1, there are four bi-weekly discussions on the Canvas discussion board from Week 2 to Week 10. In Weeks 2, 4, 6, and 9, a question will be provided by the lecturer on Canvas for group discussion; you are required to submit at least one discussion post by the following Monday and observe other groups' discussion posts to prepare for the peer-review quiz by Friday of the second week.

Another hallmark assessment for this course is a business proposal. Students are required to submit a course project. In this coursework, students are tasked to come up with innovative business ideas in the property industry. The business ideas can come from but are not limited to FinTech or the sharing economy covered in the course. Meetings are provided to discuss the progress of the coursework.

Students imagine themselves as a participant in the property business incubator programme: \$100 K Challenge in Auckland, New Zealand, offered by the Centre of Innovative and Entrepreneurship (CIE) of the University of Auckland Business School. Their start-up can win an initial endowment (up to \$100,000) to develop a new innovative business idea. The competition does not only provide generous capital to help a start-up to implement the critical steps before looking at next-level funding opportunities through venture capitalists, but it also gives entrants mentoring and tailored feedback from leading industry experts. Students are required to submit a seed funding proposal. A business pitch is also needed for this proposal. The pitch will be in the form of presentation videos uploaded onto Canvas for peer review.

To help students understand some of the latest developments in PropTech, various experiential workshops at the Unleash Space offered by CIE are held, such as 3D printing, 5G technologies and VR applications (Figure 2). Students can explore design-thinking concepts in those workshops and learn practical design skills. Students are also encouraged to submit their business ideas to CIE's Velocity \$100 K Challenge entrepreneurship competition (<https://www.velocity.auckland.ac.nz/100k-challenge/> accessed on 5 February 2023). This also encourage students to involve in extra-curricular activities and incentivise their class attendance activities [33].

An example of a Discussion Question and a Discussion Post:

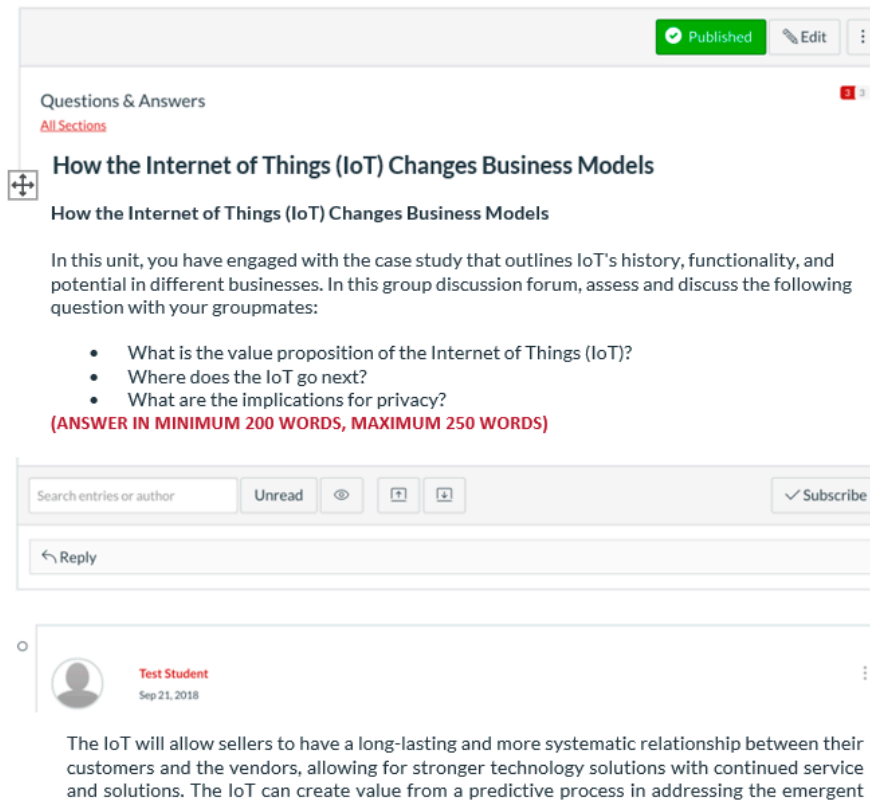


Figure 1. An illustration of the online discussion on Learning Management System.

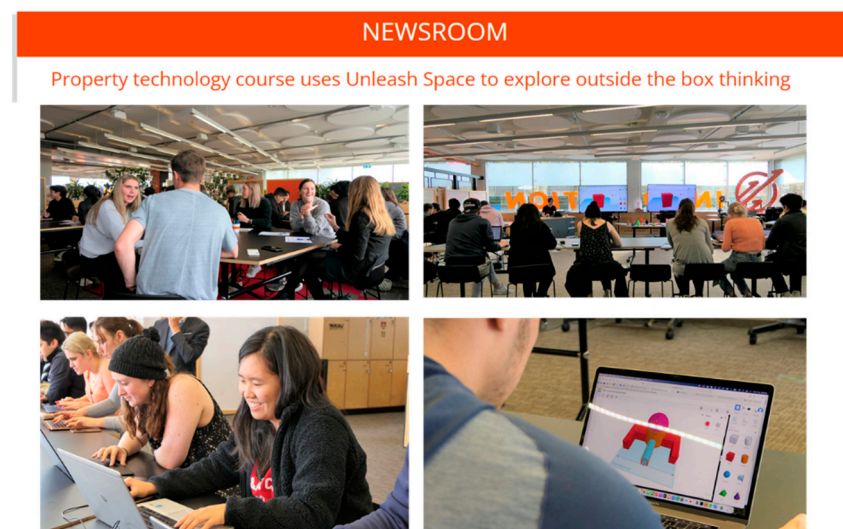


Figure 2. The property technology course uses Unleash Space to explore outside-the-box thinking. Source: <https://www.cie.auckland.ac.nz/newsroom/property-technology-course-uses-unleash-space-to-explore-outside-the-box-thinking/> (accessed on 2 February 2023).

### Why Use the Case Study Method as a Teaching Pedagogy?

Case method teaching is “the art of managing uncertainty”—a process in which the instructor serves as a “planner, host, moderator, devil’s advocate, fellow student, and judge”, all in search of solutions to real-world problems and challenges [34]. Unlike conventional real estate lectures, case method classes unfold without a detailed script. Case method lecturers learn to pursue opportunities and “teachable moments” that emerge throughout the in-class and/or online discussion. The principles and techniques are



developed “through collaboration, co-operation with friends and colleagues, and self-observation and reflection”.

In this study, the following question is put forward: Is FinTech the future of real estate investing and financing? Christensen’s “principles of disruptive innovation’ are introduced, which put forward a counter-intuitive argument that “good management was the most powerful reason they failed to stay atop their industries” [35]. It challenges the wisdom of listening to customers and investing in new technologies that would provide them with better products or services they want. It is argued that “disruptive technologies underperform established products in mainstream markets. But they have other features that a few fringes (and generally new) customers value”.

For example, Zillow’s iBuyers, P2P lending platforms, and tokenisation technologies in commercial properties all seek to speed up the process of property transactions and financing and transform the way of property investing. They compete with the mainstream markets where real estate agents, banks and lawyers usually provide fiduciary services. The current regulations and protections on real estate transactions are all based on the traditional approach in the mainstream market. Students are required to analyse the future of FinTech in real estate investing and financing by referencing their chosen cases. The advantages and disadvantages of applying FinTech and the potential challenges faced with the widespread adoption of FinTech in real estate markets are also discussed.

## 5. Results

Two case studies of PropTech are chosen to illustrate how the case study method can help the co-creation of knowledge. The first case is about the efficiency differences between big corporations and start-ups in innovations, while the second case is about ethical considerations in the application of advanced technologies in smart buildings. Both are related to the real estate industry. They provide problems to students from real-life examples to explore and discuss different solutions. They are required to identify successful and failed cases on the issue for formulating a general hypothesis [20].

### 5.1. Case Study 1—Innovations: Big Corporations, Start-Ups or Co-Creation?

Innovation is commonly recognised as the key to success in PropTech. However, whether a start-up or a large corporation is better at innovation has been debated for decades. Until recently, big corporates tried piloting co-creation projects with start-ups to drive innovations [34]. Students were provided with reading articles in the online discussion forum and were asked to investigate by exploring real cases whether and why co-creations between corporates and start-ups can achieve a better way to innovate.

From the cases the students researched, co-creation was found to be more successful in innovations, as start-ups have greater flexibility to respond to change and can more easily bear the consequences of failure. In contrast, monolithic organisations are much more structured and resistant to change and are risk-averse as the same failure could ruin their brand name and customer trust. On the other hand, corporates possess greater resources, funding, technical support, networks and experiences, etc., which the start-ups lack. Thus, collaboration can be mutually beneficial and make innovation more feasible for both parties.

More interestingly, after exchanging ideas with others at the discussion forum, some new knowledge emerged from the discussions on the four main co-creation approaches practised in the markets (Figure 3). These areas follow:

1. Collaborations between corporates and start-ups to innovate;
2. Acquisitions—corporates acquire start-ups with potentially innovative ideas;
3. Competitions—corporates organise competition events or games to invite innovations from the public
4. Subsidiaries—corporates set up small start-ups to be responsible for a new product line.

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**Kelly Lorth's Report**

by giving companies access to all the tools and technologies they need, the partnership will be another step toward their grand goal of "democratising" antibody discovery

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**Caitlyn Khoo's Report**

Co-creation allows both parties to use both sides to productively utilise others' knowledge

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## CO-CREATION TO INNOVATE

**WHY CO-CREATION BETWEEN BIG CORPORATES AND STARTUPS  
IS A GOOD WAY TO INNOVATE?**

Innovation is the key to success in PropTech. However, whether a startup or big corporate is better in innovation has been debated for decades, until recently when big corporates tried piloting co-creation projects with startups to drive innovations. In this discussion forum, we will investigate by case study method why co-creations between big corporates and startups are a good way to innovate. An article by Kaplan (2019) is provided for reference.

Kaplan, Soren (2019) [How Big Companies and Startups Use 'Co-Creation' to Innovate](#), Inc. May 2.

**Figure 3.** A PropTech Case on Co-creation to Innovate. Source: the author's blog page at <https://ecyy.medium.com/co-creation-to-innovate-a-case-study-b5331611d579> (accessed on 2 February 2023).

### 5.2. Case Study 2—Smart Buildings—How to Strike a Balance between Privacy and Convenience

With powerful predictive analytics in smart buildings, some smart lifts can now recognise the identities of all of a building's tenants to analyse their behavioural patterns. The AI-trained systems can provide individualised optimal services, but the privacy of tenants may be compromised. A real case of smart lifts installed in office towers is provided to students. This smart lift can process the facial recognition of lift users. Their personal information is shared with the IoT-enabled cloud platform for a machine-learning algorithm to identify the lift user's destination floor. Indeed, this smart lift technology can provide convenience to lift users, but the technology impinges on their personal privacy.

Students are asked to explore cases on how to strike a balance between privacy and convenience in smart buildings on the Discussion Forum. In a summary of the 120 case study submissions, the following three major categories of potential solutions emerged (Figure 4), viz.

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Blockchain integration can provide decentralisation and authentication, adding anonymity and versatility to the IoT infrastructure

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use in-device computation and encryption at both ends

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## PRIVACY V. CONVENIENCE

### SMART BUILDINGS – HOW TO STRIKE A BALANCE BETWEEN PRIVACY AND CONVENIENCE?

Innovations in Smart Buildings have brought convenience and efficiency to occupants, such as smart lifts and smart HVAC. However, with the powerful predictive analytics in smart buildings, they can recognise the identities of all occupants to analyse the occupants' behavioral patterns. The trained systems can then provide individualised optimal services, but the privacy of the occupants may be compromised. A case of a smart lift is provided which can recognise users' faces and share the users' personal identity information with the IoT-enabled cloud to check the users' authorisation and run the machine learning model algorithm to identify the destination floor of the users. An article by Groth (2022) on IoT ethics is also provided for reference.

Groth, Diane (2022) [IoT ethics must factor into privacy and security discussions](#), TechTarget, January 6.

**Figure 4.** A PropTech Case on Privacy versus Convenience. Source: the author's blog page at <https://ecyy.medium.com/how-to-balance-privacy-and-convenience-in-smart-buildings-a-case-study-2c0040326a02> (accessed on 2 February 2023).

1. Contractual—transparency and opt-out consent.
2. Legal—regulations governing privacy protection, and
3. Technical—using blockchain and data anonymisation to decentralise and anonymise the privacy data storage.

From this exercise, students better understood the ethical issues of using technology. But more interestingly, they can appreciate a novel approach by using technology to solve ethical dilemmas; if not, combining both technologies and regulations to mitigate the concerns. The ethical issues involved will not solely rely on politicians or institutions to set rules and regulations to protect us; individuals can innovate to protect themselves.

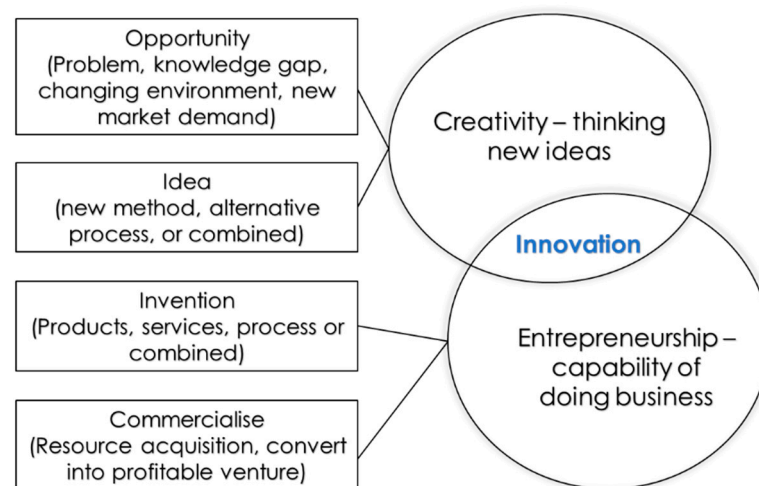
## 6. Discussion

Policymakers and industry stakeholders have started to build a consensus that the future economic well-being of societies relies on people's innovative skills. Facilitating future innovation was identified as critical in the European Union Commission's 'Europe 2020' Strategy [36]. The Organisation for Economic Co-operation (OECD) recently emphasised the role of education in developing innovation, i.e., "The need to empower people to innovate [ . . . ] calls for high-quality and relevant education as well as the development



of wide-ranging skills that complement formal education”, ([37], p.3). Such policy directives put pressure on universities to develop their educational programmes to ensure that graduates have the capabilities to be innovative and entrepreneurial.

Before discussing our advocacy of using the case study method to teach innovation, we have to understand the differences between terms such as ‘creativity’, ‘innovation’, and ‘entrepreneurship’. These terms are sometimes used interchangeably. However, their subtle difference could explain the reason for using case study methods to teach innovation and technologies in real estate. One pragmatic definition of ‘innovation’ used in this course is the implementation of new technologies that work and have value for specific stakeholders. Indeed, the definition comes from Theodore Levitt, a professor at the Harvard Business School, in his book *Marketing for business growth*, stating that “creativity is thinking up new things. Innovation is doing new things. The difference speaks for itself. ([38], p.71)”. The key here is practicability. Creativity can come up with something new but not necessarily useable, whereas innovation involves the development and implementation of something new that works and which has value for stakeholders (e.g., a user group). In this regard, innovation becomes a response strategy that understands and brings together socio-technical complexities to make new systems work. Entrepreneurship is not only about taking a given technology to commercialisation but also about transforming innovation into economic value (Figure 5).



**Figure 5.** Interrelationships between Creativity, Innovation and Entrepreneurship. Source: Adapted with modification from Pretorius, M., Millard, S. M., & Kruger, M. E. [39].

Cases exposing students to real business dilemmas and decisions will facilitate developing ‘blue sky’ creative ideas into practical innovation and ultimately transform innovation into economic value. Cases teach students to analyse business problems while considering the broader organisational, industry, and societal context. Students recall concepts better when situated in a business case rather than memorising textbook knowledge. The case study method teaches students how to apply theory in practice and induce theory from practice, cultivating the capacity for critical thinking, analysis, judgment, decision-making, and action. The case study method can motivate a broader set of capabilities for students. Such innovative skills form long-lasting capabilities that enable students to learn, adapt and develop new technologies faster. These innovative skills acquired from the case method can be summarised as follows.

### 6.1. Creativity

Innovators are always forward-thinking individuals who can apply their creativity to envision better ways to accomplish tasks and solve the business stakeholders ‘pain points’. Strong creativity enables students to envision an idea’s outcome and consider ways to achieve their goals. Creativity can be inspired during workshop sessions, helping students

to contribute to new inventions and drive progress in their industry. The case study method also exposes students to various situations and roles. With different business cases, students can assume roles as entrepreneurs, investors, engineers, etc., in various sectors. Each case offers an opportunity for students to engage with the business or technologies that resonate with them. Business cases in PropTech also stimulate curiosity about the range of opportunities in the business world as constructive disruptors. This curiosity serves them well throughout their future career development. The skill set acquired makes them more agile, adaptive, and open to considering a broader range of choices in their future careers. New technologies are also introduced to facilitate their creative thinking [25].

### 6.2. Solution Seeking

Innovators see problems and challenges as opportunities to develop better practices or create new products or services. Part of being innovative is identifying pain points in a business and finding effective ways to address them. In the workplace, problem-solving skills can be used to reduce costs, improve efficiency, and troubleshoot customer issues. The case study method places students in the role of the case protagonist and forces them to make and defend a decision. The format leaves room for nuanced discussion: Teachers push students to compare and contrast different solutions and choose an option, knowing there is rarely one correct solution.

Indeed, most cases are meant to stimulate a discussion rather than highlight effective or ineffective management practices. In all the case studies, students receive feedback from their peers and teachers about how convincing their arguments are. The discussion enables them to develop the judgment of making decisions under uncertainty and communicate that decision to others. The process emphasises idea generation by reviewing and evaluating cases [21].

Additionally, students can often have a particular biased view of a case stemming from their educational background and life experiences. Recognising personal bias can be invaluable when an entrepreneur inevitably has to work with people from different industries, backgrounds, and perspectives. For instance, people majoring in accounting and finance may be biased in viewing cases purely on their financial aspects. Yet, an innovative business start-up also needs to understand the management of a variety of stakeholders. When students tend to favour certain viewpoints, discussing different business cases on different tech firms' business models can help reveal and alleviate such bias. Equipped with such reflections, students can correct biases and learn to listen more carefully to classmates whose different viewpoints may help them see beyond their own set views.

### 6.3. Collaboration

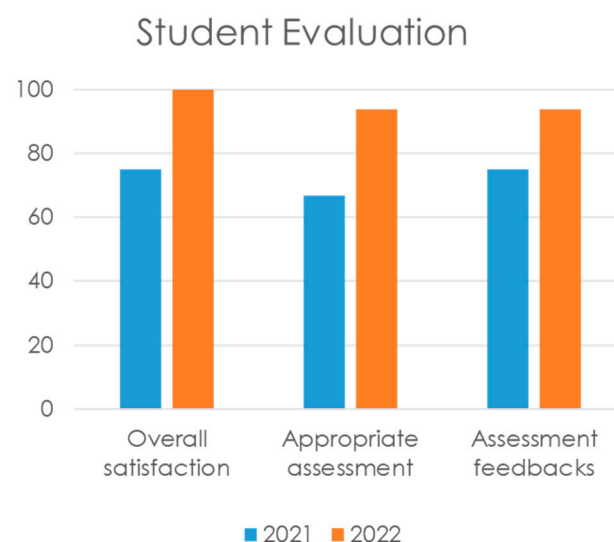
It is better to make business decisions after extended give-and-take, debate, and deliberation. As in any team sport, people get better at working collaboratively with practice. Discussing cases in small study groups and then in the classroom helps students practice the meta-skill of collaborating with others. Through practice, observation and role modelling, teachers and students learn how to facilitate inclusive discussions that reach well-considered, clear decisions. These qualities become embedded and can be applied in working life. It enhances teamwork and leadership training in multi-dimensional entrepreneurial self-efficacy model [40].

In the PropTech course, students can discuss over 50 cases a semester, and the range of roles they are asked to assume increases the variety and scope of situations they believe they can tackle. Interacting via the graded discussion forum, students become more adept at expressing themselves and presenting ideas. Students often describe how discussing cases prepared them for their future careers. Innovation is difficult to teach or coach, but the case study method seems to instil the skill in students. Of course, there may be other ways of learning these innovative skills, such as the repeated experience gained through practice or guidance from a gifted coach. However, the case method can engage students and help them develop powerful, innovative skills. For recruiters and employers, recognising

the long-lasting benefits of studying via the case method can be a valuable perspective in assessing candidates and plotting their potential career trajectories.

#### 6.4. Course Evaluation before and after Using the Case Study Method

The case study method works well, as manifested in the student course evaluation. Students' course evaluations before and after adopting the case study method are compared. The overall satisfaction score was 4.75 (out of 5) after using the case study method, compared to 4.08 before. The score for the course, in general, is higher than the average of the academic unit (4.31) and the faculty (4.04). The overall satisfaction rate is 100% compared to 75% before the case study method (Figure 6). The satisfaction rates on other aspects, such as the appropriateness of the assessment and feedback to the assessment, also achieved very high scores (The overall satisfaction scores are based on a course overall question providing a 5-point Likert scale in a student evaluation questionnaire. The statement is: "Overall, I was satisfied with the quality of the course", and the students can choose to answer (0) Strongly Disagree, (1) Disagree, (2) Neutral, (3) Agree, or (4) Strongly Agree. The satisfaction rate is based on the percentage of responses that agree or strongly agree). Some anonymised open feedback for the course also testify to the effectiveness of using the case study method in teaching for innovation (Table 1).



**Figure 6.** Differences in the student evaluation scores on overall satisfaction, appropriate assessment and assessment feedbacks in 2021 and 2022. Source: Student Evaluation Scores of the PropTech course, 2021 and 2022.

**Table 1.** Some Feedbacks from Students.

Student's Feedback	
1.	"The case study approach is where you could learn from other people and understand further insights and knowledge. Therefore, allowed for improvement in future assessments as it had a structure and foundation to build off. Also, the lecturers replied quickly to emails and Piazza, meaning that any queries could be addressed."
2.	"The breadth of the subject. It really gave me a much better understanding and appreciation of how PropTech is expanding and having a major influence on the property sector and that I must constantly monitor and use it in future work in the industry."

## 7. Conclusions

This article advocates using the case study method to teach innovation. When you think of teaching for innovation in any discipline, especially in some traditional industries

like real estate, one might need to build an environment in which thinking outside the box is encouraged and mistakes are embraced. The case study method can create safe conditions for risk-taking, rewarding curiosity, encouraging divergent thinking, and developing a mindset of constructive critique that helps students develop their innovation.

This study demonstrates the adoption of the case study method in an undergraduate Property Technology (PropTech) course. Students are required to use real business cases to analyse how technologies solve real estate problems. Discussions with lecturers and peer reviews in the online discussion forum enable students to wrestle with the knowledge they learn and encourage a knowledge co-creation atmosphere. Exemplars of the case studies are also published on social media such as LinkedIn and Medium to share their findings on the latest knowledge of PropTech. The student evaluations of the course are positive and promising (100% overall satisfaction rate); the outcomes of the Discussion Forum using the case study method provides a novel knowledge co-creation model of teaching creative thinking. The findings of this case are represented as the class size is relatively big (about 100 students). As a robustness test, the same teaching approach is also applied in a Master level course in 2022, with an equally positive result.

In a nutshell, teaching for innovation is possible and significantly valuable. This requires teachers to take a few steps to get there. The case study method is not the only way to teach innovation, but the approach can always remind us that innovation is to develop 'blue sky' creative ideas into practical innovation and ultimately transforms innovation into economic value. Whether the learning is online or in a classroom, there should always be room for creativity in a learning design strategy. As our newly launched teaching components in property technology, such as 3D printing, Google's Teachable Machine and Microsoft's Azure for machine learning, indicated, the most effective way is to teach something creative and authentic. For instance, informal, participative workshops can provide a relaxed learning environment where creativity can flourish through experimentation and discussion. This allows students to do something creative while still in the learning environment. Peer review enables students to learn from each other. Be it languages or how to apply business cases, peer-to-peer learning is an excellent way to build a more creative, innovative learning environment. Last but not least, creating an environment that embraces mistakes and treats them as part of the innovation process is important.

A practical implication of this study is a paradigm shift from knowledge acquisition to problem-solving and innovation not only in FinTech education but also in the employers' consideration of the applicants' skill set portfolio. With the advancement of technologies, students studying business programmes no longer aim for the acquisition of knowledge and skills but, more importantly, for creativity and innovativeness. However, many previous studies indicated that creativity learning requires self-efficacy, such as motivation, empowerment and challenges. This study provides a promising case on how to create a teaching and learning atmosphere to facilitate entrepreneurial education for innovation in a PropTech course [19]. However, the results are limited by just one case. Hopefully, it can be extended to other programmes to test its validity in further studies.

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