Learning to Be (L2B):
An entrepreneurial approach to teaching entrepreneurship

Aveiro, Portugal

General Information

Title	Learning to Be (L2B)
Pitch	An entrepreneurial approach to teaching entrepreneurship
Organisation	Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro
Country	Portugal
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Nature of interaction

- ☐ Collaboration in R&D
- ☐ Commercialisation of R&D results
- ☐ Mobility of staff
- ☐ Academic entrepreneurship
- ☐ Governance
- ☐ Lifelong learning
- ☐ Joint curriculum design and delivery
- ☑ Mobility of students
- ☑ Student entrepreneurship
- ☐ Shared resources

Supporting mechanism

- ☐ Strategic
- ☐ Structural
- ☑ Operational
- ☐ Policy

Summary

'Learning to Be' (L2B) based in the Management Department of the University of Aveiro, is a tailored entrepreneurship education approach which is designed to develop a new generation of innovators and entrepreneurs.

L2B is an intensive one-semester programme that brings students from diverse parts of the university together in multi-disciplinary teams.

Teams develop projects to address a need identified by participating companies. Teams are guided through a process inspired by the lean and design thinking methodologies and interact with companies in developing their problem solution.

The finale of the L2B process is the 'pitch to companies' in which teams compete to try and sell their product or strategy idea.

Introduction & Overview

1. BACKGROUND

Learning to Be (L2B) is the brainchild of two academics at the University of Aveiro (UA). The diversity and complementarity of their training and experience have been crucial factors in the genesis of Learning to Be. Ana Daniel is a professor in the Department of Economics, Management, Industrial Engineering and Tourism at UA. Prior to her academic role Ana was, for nine years, the executive director of technology transfer at the largest materials science laboratory in Portugal. Mariana Pita also has diverse experience across both design and innovation and in technology transfer. She was a former project manager in the Technology Transfer Office of UA, coordinating institutional activities in IP protection and spin-off and start-up creation. The diverse experience of the two programme founders enabled them to view the challenges of entrepreneurship education and UBC from multiple perspectives. This combination of knowledge and contextualised know-how contributed to their belief that the traditional approach to teaching entrepreneurship was not sufficient.

From 2014, the two founders tested their initial designs of *entrepreneurial approaches to teaching entrepreneurship.* The first pilot operated without company partners. Challenges related to the UA campus were selected and students undertook projects to improve the services and facilities available. However, it soon became evident that students really wanted a programme that would have an impact on their future professional careers. At this point it became clear that linking with companies had to be at the heart of the programme, and L2B was born. The first edition of L2B ran from September to December 2015, with the programme already reaching its fourth fully subscribed edition in 2017.

2. OBJECTIVES AND MOTIVATIONS

The main objective of L2B is to build students' entrepreneurial skills and attitudes. The core aim of the programme is to extend students' capacities and develop their capabilities by working directly on the 'wicked problems' of companies: problems that are always evolving, where the students have incomplete information, and multiple stakeholders with diverse interests are involved. In the L2B challenge context, the students' objective is to try to find the best solution that fits both the needs of the company and of their customers.

The rationale for this approach is to focus on developing the sets of skills that will be the most vital among those needed by employees in the future. According to the World Economic Forum, in 2015 employees needed skills to solve complex problems, to coordinate work and to manage others. By 2020, when cohorts of L2B graduates will be entering the labour market, they will need a different set and mix of skills that are not being explored as strongly today. The most important of these are predicted to be complex problem solving, critical thinking and creativity.

L2B is thus strongly motivated by the desire to match students with the skills and the capacities that will shape the future of work. In the L2B model, the best way to connect these things is through an active link between students and companies.

L2B is also motivated by the opportunity to provide project outputs that are of value to participating companies, to develop a network of private sector collaborators and, in the medium-term, to make a positive contribution to the innovation culture of companies operating in the Aveiro region and beyond.

3. STAKEHOLDERS

Students from eight degree courses at UA make up the student teams that collaborate to solve company innovation challenges. Participating students come from very diverse degree courses, including: Management; Economics; Tourism; Languages and Business Relations; Biology; Computer Engineering; Physics Engineering; Medical Sciences; Mechanical Engineering; and Chemical Engineering.

Companies that provide the challenges for students to solve and the context for students' 'real-world' learning. Participating companies make their businesses open to visits and fieldwork by students and facilitate different types of access to the company's customer base.

Customers of companies also become involved in the fieldwork of students, sometimes during both scoping and testing phases of the development of the problem solution.

Departments of UA channel their students into the interdisciplinary experience offered by the L2B programme. These departments cover a wide knowledge base including: Economics, Management, Industrial Engineering and Tourism; Education and Psychology; Biology; Electronics, Communications and Informatics; Health; Physics; and Chemistry.

A small nucleus of two key academics developed the L2B methodology and have run all the classes between them. An expanded group includes two colleagues from the field of Tourism, Carlos Costa and Rui Costa, who whilst they are not involved in the method development, have contributed to the application of L2B to the tourism sector.

Implementation

4. INPUTS

The main input of the companies that participate in L2B is the provision of 'wicked problems' that the student teams attempt to resolve. When they are selected to participate in L2B, companies agree to participate in four sessions with the L2B teams. First, the companies pitch their challenge to the students in the opening session. This is a large event that is open to staff and students across the university; companies are motivated to provide an inspiring presentation of their business and the problem that they are throwing open to the L2B community.

As the L2B programme unfolds, companies contribute twice to exchanges or events in which students seek to communicate their ideas, receive further inputs and feedback, and move to a progressively improved iteration of their solution to the problem.

Companies are key participants in the culminating event of L2B, the Student Pitch, where each team presents its final proposal. Student teams present their solutions to the companies' 'wicked problems' in front of all the participating companies and students in a second event that is open to the broader faculty and university community.

A further important contribution of participating companies to L2B is via in-kind support. This most commonly takes the form of opening the companies' doors to the students to assist with specific aspects of the solution development process, allowing them the chance to interact with relevant employees and to collect information and advice from them.

The initial L2B approach to recruiting company participants has been to not repeat companies. Rather the recruitment of new companies is regarded as a simple way to bring new inputs (wicked problems), new learning contexts and new influences into the programme. Focus is on larger companies, with more complex challenges and more elaborate divisions of labour through which students can learn about a variety of specialist business roles and functions. Rotating companies is also an effective mechanism for spreading the L2B 'brand' and enlarging the community linked to the programme. Already other well-known, large companies are lined up for upcoming years.

Students bring their learning, talent and out-of-the-box thinking capacity. The typical intake is around 60 students, which produces 15 student teams divided between three to five different challenges. Participants in the same team must come from a different disciplinary background as far as possible. Emerging from different education and training backgrounds, the L2B teams integrate a collective multi-disciplinary profile, which is essential to the development of innovative solutions to complex multi-dimensional problems.

Customers who are end-users of participating companies' products and/or services contribute their experience and insights to the process of developing L2B problem-solutions. Depending on the type of company, this role can be very important, for example several L2B challenges have been provided by large retail companies – for whom solving a problem often means

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solving a problem of their client base and contributing to consumer welfare overall. Customers of companies provide their opinions, feedback on ideas, and create data both for the students and for the companies.

The Department of Economics, Management, Industrial Engineering and Tourism invested in the preparation of a room to support the L2B programme. The room is set up as a creative environment where students can work in groups.

5. ACTIVITIES

The L2B approach is structured into a three-stage process under the banner of Activating Entrepreneurial Thinking Capacity (ACTE). The three phases are:

▸ Phase One: **Business Empathy** – trying to understand latent customer needs;

▸ Phase Two: **Value Create** – building sustainable competitive advantage;

▸ Phase Three: **Strategy Test** – validating customer and market acceptance.

These elements of the process are collectively designed to improve the fit of the options under development, increase the quality and volume of the knowledge deployed in the case, and to decrease the risks associated with the acceptance of the first solution developed.

The logic that structures the process of activating entrepreneurial thinking capacity is that companies' wicked problems are difficult to solve precisely because they are usually the responsibility of employees within the company, who have to deal with the problem on a daily basis, often leaving them too narrowly focused. In this situation, it is usually the case that they need new inputs to see the problem from a different perspective. The activities associated with the L2B methodology are designed to provide these disruptive creative inputs to the company.

Business Empathy is a method designed to put students into the shoes of business customers – defined as empathy for both the situation of the participating company itself and for the customers of that company. Students are encouraged to undertake field research to speak directly with customers, do interviews and take photos. They look for insights from customers (and other relevant stakeholders in some cases) and build a persona map – a detailed map of the different characteristics of customers. For example, in the case of one major retailer for which students were developing a new product, the students went to a supermarket where they remained for an entire business day, observing, interviewing customers and coming to grips with the perspective of both the retail customer and the company that wishes to sell to them. In such cases, the students enjoy an ethnographic-style immersion in the business context to deepen empathy.

In the **Value Create** phase, students use tools of ideation, brain storming, and other methods that stimulate creativity. They also look for relevant competitive analyses, by searching for solutions to a different problem in a completely different field that they can nevertheless try to apply or draw on in some respects. In this phase activities that involve learning from others are considered very important. As this stage leads into designing prototypes and presenting

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mock-ups the main objective is to generate multiple ideas, and to get feedback from peers to help sort out which ideas to take forward and materialise for testing. Students also bounce ideas off the company employees as they develop second iterations – prior to trying to validate these ideas with the company.

The **Strategy Test** phase is when the students attempt to validate their proposed solutions with the customers. They can return to the field, as they did in the case of the supermarket mentioned previously, and try and assess whether customers would be interested or willing to pay for the product. If the outcome of this assessment is that customers would not be willing to pay, they seek to identify what needs to change. By validating their solution with a test product that people can tangibly access, students evaluate what should be changed, develop new features that are considered needed – then another round of iteration can begin.

The teams of three or four students work together for an entire semester. Having multiple teams addressing the same challenge also introduces a degree of competition into the structure of the programme, although openness and support between teams is a more important dynamic, particularly in relation to the learning objective of activating entrepreneurial thinking through idea-sharing, feedback and peer evaluation processes.

6. OUTPUTS

L2B outputs return benefits to both student and company participants.

Students take real-world business experience and insights from the L2B programme. They also develop relevant business contacts and absorb vital networking skills in the course of interacting with companies.

Internships can also be a direct outcome of L2B student projects. When a problem-solution has already passed through two or more iterations with the company, and the company assesses that the project has further potential, the company can approach the student directly to undertake a small internship to develop their product or other solution further, this time from within the company.

Companies take away new market insights stemming from the interactions between student teams and the company's customers. In this process, they obtain first-hand knowledge of potential interns and/or future employees emerging from the university. Companies also develop new contacts with academics that can be the basis for expanded knowledge and innovation networks.

An important added value of the L2B method for companies is the field data that students gather. This data is acquired at no cost, yet it represents valuable new intelligence gathered from a non-corporate source regarding how customers see a potential problem solution.

Learning to Be® has already been registered as trademark in Portugal.

Learning 2 Be has already been the basis for a number of academic outputs, including two scientific journal articles and several conference papers and presentations. The originators of

L2B are currently writing a book, to be completed in late 2017, that will encompass the theory, methodology, case studies and the teaching and learning tools that comprise the approach.

7. IMPACTS

The primary impact on students who participate in L2B is that they encounter and connect to the real-world labour market, graduating with a different approach to this labour market compared with students for whom this link has not been made. They have more confidence in themselves, and real world examples to describe and use as evidence of their capabilities. In some cases, students also have a small network of business contacts to exploit when they first approach the labour market as a graduate.

The impact on students also has the potential to be direct. For example, one student who started out with a L2B project and then went to do a summer internship with the relevant firm, ended up staying.

Engagement with the L2B process has impacts on firms by encouraging them to change their culture – to become more accepting of open innovation. Problems kept inside the company, which they try to solve privately with their everyday workforce, can become looped or 'wicked' and seemingly insoluble. Usually companies in L2B reveal that they have a very traditional approach to solving these problems. Third party marketing companies are also often shown to be very limited in how they approach such problems. A very important impact of L2B is that firms become more open and comfortable about sharing their problems.

The interactions between students and the companies often reveal that companies motivated to innovate tend to do so internally. Subsequently, when they expose the innovation they have almost everything done – but there is a very high risk of catastrophic failure with this approach. Firms' reasons are well understood – they are concerned about secrecy and competitive breaches. Alternatively, the L2B approach can have an impact on firms by decreasing the risk associated with their internal innovation processes — there is less risk and no repercussions from failure.

When the students are introduced to the companies they are younger, they possess broader knowledge about many contemporary aspects of culture, their perspective is completely fearless and sometimes radically different. Importantly, they are also not biased by the past. The impact on the company comes from letting people from the outside 'step into their shoes' (rather than supply them with a standardised consulting service). This is often very different to the typical types of inputs that companies receive. New insights into problems and into the company itself come from this more open model of innovation.

For companies, the learning associated with this process goes beyond the specific solutions developed in L2B, it also teaches them another way to consider their own problems. An important impact of L2B is when companies start to ask: 'why don't we think about these other problems we have, by using this type of approach?'

A deeper goal from the beginning of the L2B programme design is to be an influencer of the local and regional innovation culture. It is too early in the development of L2B to consider whether it can have a more generalised effect in helping to change the local and regional business culture to embrace open innovation. A sign of impact is that the way individual firms react to the approach changes markedly across the cooperation experience. The form of the relationship that they establish with their university collaborators changes completely in the course of the activities. This is very important as it sets the conditions for deeper change. The impact of this evolving relationship is also likely to affect the university professionals involved over the medium-term, providing feedback loops that may benefit the programme in the future.

☑ Support
& Influencing factors

8. SUPPORTING MECHANISMS

Curriculum development. The L2B team has provided companies with information and briefings about the tools deployed and the approach used in the programme. One ICT sector company has asked for a dedicated training course in the innovation approach.

9. BARRIERS AND DRIVERS

A driver of the L2B model is to make the approach relatively simple to package and disseminate. An important component required to facilitate the dissemination process is an interested academic network. Building this network remains a work in progress, which is expected to be driven in the future by the publication of the comprehensive monograph on L2B.

L2B has a relatively low cost threshold for establishment. However, in the case of the original programme this is partly due to the fact that it is also concentrated in few hands. This lack of human resource capacity limits the scope of the programme in some respects. For example, there is an existing demand for direct company training but there are insufficient available hours and personnel to meet this demand yet.

10. FUTURE CHALLENGES

The L2B programme remains in a building phase to some extent. Challenges thus exist to develop the programme further in terms of quality and scope. Current work focuses on developing written materials that can be shared with others to implement the approach in other universities. A fundamental challenge is the development and production of a comprehensive book, preparation of high-quality demonstration cases and instruction/teaching materials that can be easily disseminated and used. Funding, or recruiting, high-level skills to raise the production values of the course materials being produced is another dimension of the replication challenge.

Building a network of acceptance with sufficiently good quality partners who can replicate the programme in other places is a further challenge. Personal relationships are important, but an intellectual acceptance of the methodology is needed and then trial and error use and experimentation to gain confidence in this methodology in practice. Current and high quality academic outputs remain very important to attract academic partners to take up the approach.

In the near future, a challenge is to find support to establish a 'fab lab' or 'hackerspace' where students can do their prototyping with 3D printers and other tools and infrastructures, which will enable them to improve the quality of prototype production. Higher production values

would also be expected to emerge from a shared creative space. This phase will need invest-ment and L2B will need a partner or a funding source. In short, this challenge is a typical scal-ing-up problem.

It is the ambition to also involve new stakeholders such as local and regional governments, although discussions of potential contributions or roles have not yet progressed beyond initial contacts.

The core academic team involved in L2B is already working at close to capacity in terms of their available time. Expanding the scope of L2B to satisfy known unmet demand (such as providing direct training for companies) would be ideal, but this presents human resource recruitment and/or task re-organisation challenges.

An emerging operational challenge is how to maintain the currency of relationships with past participant companies, especially as repeat participation is not envisaged as a regular feature of the programme. One potential strategy that is being considered is for alumni to act as 'pro-gramme ambassadors', especially where a student undertook an internship in a company.

11. CONTEXT

The intensive development of L2B by a pair of academics with diverse training in management and innovation and learning has shaped the intellectual content, the presentation of the pro-gramme and the learning tools used.

The UA is very supportive of the L2B programme. At the level of the University, the Rectorate is encouraging a plan to replicate the programme in polytechnic schools linked to UA.

The socio-economic climate in Aveiro, and more broadly in Portugal, is particularly fertile ground for methods to improve education and innovation outcomes that entail a relatively low entry cost and which can draw institutions closer together. Corporate attitudes are also increasingly open to more sophisticated approaches to formation, employee capabilities and knowledge transfer.

12. KEY SUCCESS FACTORS

The most critical success factor for L2B is to take an entrepreneurial approach to teaching entrepreneurship. The whole process has to be entrepreneurial and imbue students with the values of innovation and of a well thought through and calibrated approach to taking risks.

Gaining the trust of participant companies is perhaps the next most important success factor. One large company revealed that they did not divulge all relevant information and detail at the start of the process. However, they quickly decided they could trust in the personnel and process and shared information and details that would not normally be shared: 'in the end we wanted to push you to solve a real problem that we had'.

Trust relations take time, but eventually another success factor will be enticing stronger con-tributions from the companies.

In the medium term, a key success factor will be success in the development of new products and new services emerging from, or linked to, L2B. Obviously, this takes longer – companies have also been testing the programme. But L2B is becoming quite well known to companies, they know about the methodology and the type of challenges that they can put to the students.

At a broad level a key success factor would be evidence that L2B is helping to set the conditions for open innovation and entrepreneurship among companies.

🖥 Further Information

13. MONITORING AND EVALUATION

In the L2B model, all assessment is done through a process of continuous evaluation, although students may opt for a formal exam instead.

Oral presentations, prototypes and product pitches can all be assessed. The Final Pitch is a key element of the evaluation along with a report that each team must deliver to their company partner.

Assessment is a mixture of self-assessment between the members of teams, and dual assessment by professors and students of specific tasks.

Self-assessment is very effective for evaluating the contribution of each member to each specific assignment. The approach builds responsibility, leadership and teamwork. It is important to be able to find a way to make your individual capacities relevant to the work of the group. Individuals play different roles at different phases of the L2B process, and are assessed on how this contributes to the group performance overall.

Outcome evaluation of the L2B programme would be premature at this stage of the programme's development. However, a tailored form of monitoring and performance assessment is envisaged in the future.

14. SUSTAINABILITY MEASURES

L2B starts from a zero-cost budget. However, there will be a need for financial resources for scaling up and for broadening the scope to include more activities. To date, L2B has not approached companies or the university for sponsorship of activities, but is likely to do so in the future.

The foundation of the programme has deliberately been developed to be relatively cheap and replicable with low implementation costs. A specific goal of L2B is that knowledge and other spillovers created should have a low barrier for absorption or entry for other actors. L2B thus links sustainability with the goal to develop tools and processes that are able to be used – something that has impact in part by circulating, and emerging in other places. The availability of these resources needs to be matched by the development of an academic network interested in using them.

15. TRANSFERABILITY

The L2B model is highly transferable to other universities developing entrepreneurial education. It is low-cost and has no significant barrier to entry provided potential private sector partners exist in a specific geographic location and these partners are willing to participate.

Written materials that describe and support the model are currently in development, including a book, methodological modules and case study examples. Developing an approach that is replicable in other settings has been a goal right from the conception and development of L2B. The development of a horizontal network of departments or academic groups interested in taking up the approach will undoubtedly facilitate this transfer process.

16. AWARDS AND RECOGNITION

Recognition of the quality of L2B can be seen in the standing of the companies who have already participated, or committed to participate, in the programme. These include very large and successful companies such as Vodafone, IKEA Portugal, Altice Labs, Bosch and Sonae.

Whilst the initial intention of L2B was to never repeat companies, already two companies have wanted to return and participate for a second time. These companies' evident satisfaction with their initial experience of the programme constitutes a strong endorsement of L2B.

17. PUBLICATIONS AND ARTICLES

Daniel, A. D. (2016). Fostering an entrepreneurial mindset by using a Design Thinking approach in Entrepreneurship Education. *Journal of Industry & Higher Education 30*(3): 215–223.
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http://dx.doi.org/10.1016/j.jhtm.2017.01.002

Daniel, A. D., Pita, M., Costa, R. & C. Costa (2016) University-Business Collaboration in Entrepreneurship Education: the Learning to Be Program, in proceedings of Atas das II Jornadas Ensino do Empreendedorismo, Instituto Pedro Nunes. Associação para a Inovação e Desenvolvimento em Ciência e Tecnologia, Coimbra, September, pp. 307-318. ISBN 978-989-97004-3-7

18. LINKS

Programme website: http://www.learningtobe.pt/

19. CONTACT PERSON

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