PASSPORT TO A PROFESSION IN THE DEGREE OF PHARMACY:
HOW TO INTEGRATE UNIVERSITY STUDENTS INTO THE REAL WORLD OF WORK: “PASSPORT TO A PROFESSION IN PHARMACY”

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GENERAL INFORMATION

TITLE OF THE CASE
Passport to a profession in the degree of pharmacy

SALES PITCH
How to integrate university students into the real world of work: “Passport to a profession in Pharmacy”.

ORGANISATIONS
Faculty of Pharmacy, University of Barcelona
Students advisory service, University of Barcelona

COUNTRIES
Spain
United Kingdom

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NATURE OF INTERACTION
☐ Collaboration in R&D
☐ Academic mobility
☐ Student mobility
☐ Commercialisation of R&D results in science
☐ Lifelong learning
☑ Curriculum development and delivery
☐ Entrepreneurship
☐ Governance
☐ Other

SUPPORTING MECHANISM
☐ Strategic instrument
☑ Structural instrument or approach
☐ Operational activity
☐ Framework condition
1. SUMMARY
The incorporation of the Spanish university system into the European Higher Education Area has brought about a series of adaptations. Among the recommendations is the inclusion of an external training period in a company, which has resulted in significant changes in the degree syllabus in order to balance the theoretical and practical education required by the students. This new framework has been legally confirmed by the Spanish Government and, in the case of the University of Barcelona, by the publication of internal guidelines. Taking advantage of this new opportunity to adapt the Pharmacy degree to real-world problems in industry, the Dean’s team of the Faculty of Pharmacy, with the support of the Faculty administrative staff and the Students Advisory Service, have assumed the challenge of including a new subject in the syllabus entitled Training in Companies.

In parallel, a new activity has been set up to ensure that the students choose the most suitable company department/job for them and to help them pass the company interview. Under the name of Passport to a Profession, a series of ten explanatory talks has been scheduled every academic year. These talks deal with a broad range of topics aimed at providing the students with the basic tools they will need to make the most of a company training period and to make headway in the professional world when they finish their degree. In addition, three Faculty of Pharmacy-Pharmaceutical company workshops and two round-table conferences have been held in the last two years in order to bring the university and industry together. Notably, the project to provide students with company training is expanding on an international level, with two to three undergraduate students contracted every year by a United Kingdom-based multinational pharmaceutical company.

The statistical data of the whole process has been analysed for a more in-depth understanding of the activity and to improve the programme.

2. BACKGROUND
The University of Barcelona (UB), with six campuses, is home to over 80,000 students each year, distributed across 66 bachelor’s degrees, 71 doctoral programmes, over 300 postgraduate courses and some 400 on-site and distance lifelong learning courses. The University of Barcelona is the most formidable public institution of higher education in Catalonia, catering to the needs of the greatest number of students and delivering the broadest and most comprehensive offering in higher educational courses. The UB is also the principal centre of university research in Spain and has become a European benchmark for research activity, both in terms of the number of research programmes it conducts and the excellence these have achieved. The University of Barcelona has two campuses of international excellence –the BKC Knowledge Campus and the HUBc Health Sciences Campus- that have bolstered institutional policies on intensive research.
The Faculty of Pharmacy of the University of Barcelona, established more than 150 years ago, offers three degrees: Pharmacy, Human Nutrition and Dietetics, and Food Science and Technology. Each academic year, the Faculty has approximately 2500 degree students and 250 master’s students. In the professional context, the Faculty of Pharmacy pays particular attention to two main areas: pharmaceutical care and the pharmaceutical industry. Thus, close relationships have been established with Government administrative bodies, pharmaceutical associations and companies, hospitals and other associations to bring the professional reality closer to the education of the students. Undoubtedly, this approach facilitates the integration of the students in the professional world.

The Students Advisory Service (SAE) was created with the objective of dealing with student issues in a personalized manner. Among the functions of the SAE is to guide students through their degree and help them acquire skills for their future professions.

Therefore, the project can be represented by a triangle whose vertices are occupied by the Faculty of Pharmacy, the Students Advisory Service and the Pharmaceutical companies. In this sense, *Passport to a Profession* represents a three-way intersection between the academic world, industry and students. The goal of the project has been to introduce in the Pharmacy degree syllabus the possibility of spending a training period in a company and prepare the students in the best possible way to take advantage of this experience. Passport to a Profession can thus be considered as a guidance programme.

3. **OBJECTIVES**

The main objective of the Faculty of Pharmacy is to implement the European Higher Education Area recommendations in the Degree of Pharmacy, including the provision of an external training period in a company. The Faculty of Pharmacy has faced this challenge by developing a strategic partnering approach of cooperation with pharmaceutical companies. This project has proved to be an excellent opportunity to build bridges between academia and industry and it has been a testing ground of our capacity to directly introduce degree students to the pharmacy profession. With the aim of maximising the success of the project, the degree syllabus has been modified, so that before embarking on the training period, the students will be equipped with the necessary tools to take the utmost advantage of it. The modifications fulfil the following primary objectives:

- Successfully placing students in pharmaceutical companies during the degree.
- Enhancing the training experience for students.
International growth and expansion.
Persuading both the students and companies of the need to perform a training period.
Creation of a structured network between the academic and industrial communities.
Academia-industry joint programmes/projects/activities to stimulate collaborations.

More specifically, the strategy of the Faculty of Pharmacy is to ensure quality and provide the students with support in their education and training. The ultimate goal is to create more flexible structures for boosting the student training periods in unison with industry.

4. RESPONSIBILITY
The Passport to a Profession project is supported by three different organisational entities, all working in collaboration: the Faculty of Pharmacy, the Students Advisory Service and the pharmaceutical companies. Responsible for the successful implementation, monitoring and evaluation of the project is the Dean's team of the Faculty of Pharmacy and in particular the Vice-dean of Students. The Dean's team has undertaken the role of reinforcing the innovation capacity of the Pharmacy degree syllabus and promoting the interconnection of the academic activities of the degree with the productive pharmaceutical companies of the country.

IMPLEMENTATION & FUNDING

5. STRATEGY & ACTIVITIES UNDERTAKEN
When the Faculty of Pharmacy decided to implement the training period in the syllabus of the Pharmacy degree, three main areas were considered: pharmaceutical companies, students and the Faculty of Pharmacy administration.

Pharmaceutical companies
As a first requirement, several pharmaceutical companies should be willing to provide between 300 to 750 hours for tutoring and mentoring students. To this end, the Human Resources Departments, by mail or telephone, of companies that already had a relationship with the Faculty of Pharmacy were contacted. This initial approximation was quite fruitful since the companies were already familiar with the Faculty and its students. It was only necessary to introduce the idea of students carrying out a short-term training period to include in their curricula. However, a drawback was that Human Resources personnel were unable to quickly evaluate the possibility of accepting a student.

Following, numerous pharmaceutical companies without any previous contact with the Faculty were contacted by extensive mailing, but they gave very little response. Without any doubt, the most effective way of obtaining company participation was directly through
previously established contacts who were working in a department able to host a student. In those cases, the response was quick and specific. The activity of securing company involvement in the project was considerably time-consuming but worthwhile, since this is central to the project.

Each pharmaceutical company is required to provide a tutor, who will be in charge of the training the student receives. The role of the company tutor in the project needs to be well-established. They need to provide a training plan so the students know in advance what their responsibilities will be. The tutor should keep the Faculty informed if there are any problems with the process or complaints about the student. Furthermore, the tutor is responsible for writing a final report about the work of the student, stating if company expectations have been fulfilled. This report is central to awarding the student a mark for the training period.

**Faculty of Pharmacy administration**

The optional subject *Training in Companies* has been introduced into the Pharmacy degree syllabus after obtaining approval from different academic commissions. Before taking this subject, students need to have passed half of the degree credits. An internship agreement between the Faculty of Pharmacy of the University of Barcelona, the pharmaceutical companies and the student, including all the data of the three participants, has been prepared by the Faculty administrative staff.

**The Student**

The undergraduate student is the one who decides if they want to spend a period in a company or not, since it is not compulsory for finishing the degree. The training period (between 300-750 h, representing 12 credits of the syllabus) can take place any time during the year, including out of term time, with the company having the final decision. Therefore, the student is free to make whatever timetable modifications are necessary to ensure the training period is compatible with theoretical classes, receiving full assistance from the administrative staff of the Faculty of Pharmacy. The student has to fit the training period in with their academic curricula, which to some extent is like solving a jigsaw puzzle.

**Steps for the students to follow**

Since *Training in Companies* is so different from the other subjects of the Pharmacy degree, it needs to be introduced by an informative session at the beginning of each academic year. It is important to explain to the students that spending a training period in a company during their degree will give them a more comprehensive education, help them develop professional skills and establish contacts with the professional world, and ultimately give them a greater chance of succeeding in the labour market. Students who decide to carry out the training period should complete the following steps.

1.- The student applying for this option should provide a document specifying their preferred timetable (first or second semester), their level of foreign languages and preferred field of activity. The five main areas to choose from are marketing, quality control, medicinal chemistry, registers and patents, and quality warranty. The students provide their curriculum vitae and give permission to the Faculty of Pharmacy to send it to companies.

2.- When the collaborative companies have a vacancy, they contact the administration office of the Faculty of Pharmacy, informing about the training proposal, timetable, the field in
which the work is to be developed, etc. The students with the most suitable curricula are sent to the company to be interviewed. Alternatively, and more conveniently, students can arrange their own placement, with the advantage that they can look for what they consider to be the most suitable conditions, in terms of location, field of interest and even economic aspects.

3.- One of the important points to be considered in the process is that ultimately the company assesses the suitability of the student by interview. If the student is selected, the administration office of the Faculty is contacted and the internship agreement is prepared and signed by the company, the student and the responsible coordinator in the Faculty.

4.- A requirement for taking the subject Training in companies is that the student is accepted by a company and that the internship agreement is correctly drawn up. The rights and duties of participants in the training period are legally regulated by the "University of Barcelona Guidelines for training periods". Students without a host company cannot carry out the training period.

Since the most crucial point in the whole process for the student is passing the company interview, an activity was prepared to equip students with the necessary tools to succeed. To this end, the Faculty of Pharmacy contacted the Students Advisory Service to provide students with specific guidance in personal aspects, coaching, etc. This new activity, conceived to help students enter the professional world, was named "Passport to a Profession", an umbrella term that covers target-oriented aspects related with gaining professional experience not usually dealt with in the academic syllabus.

Passport to a Profession includes a series of talks focused on providing students with knowledge about the companies and generally helping them prepare for the interview. These sessions are held in the Faculty at midday, which is the intersection between timetables of students that attend classes in the morning or afternoon.

The most representative sessions are the following:

- "How to start looking for a job". In this session the students receive information about how to contact a company, obtain information about the companies they are interested in, decide on their area of interest, etc. Since their last years have been mainly dedicated to academic activities, the students are receptive to receiving guidance in the job-searching process, and have an opportunity to become familiar with the professional world.

- "How to present a curriculum vita and a motivation letter". Most students at this stage had no experience in writing a curriculum vita oriented to obtaining a position in a pharmaceutical company. In this session students are given highly practical advice, which they are able to take considerable advantage of.

- "Round table: what positions are available in a pharmaceutical company". The fields in which a pharmacist can develop a career are remarkably wide-ranging and varied. It can be difficult for a student to distinguish between the activities performed in each department of a pharmaceutical company. When applying for a job in a particular department, it is essential they understand what the work will involve, an aspect not dealt with specifically in the degree. To this end, five professionals from different company departments are invited to participate in a round table. After talking about the
specific activities of their department, they are happy to answer student questions. By understanding what tasks they will be expected to perform in each department, the students can make an informed choice of their preferred area of interest. It is essential for the students to be equipped with this information before attending the interview, so the position on offer will fulfill their expectations.

- “Opportunities abroad”. This talk is dedicated to the students interested in spending their training period abroad. One of the main targets of our activity is internationalization. In this sense, students need to have information about how to access pharmaceutical companies based in other European countries. Notably, in the academic year 2006-2007, the United Kingdom-based multinational pharmaceutical company Glaxo-Smith-Kline began contracting one or two students from the Faculty of Pharmacy for a period of one year. Interestingly, all the students that have spent their training period in this company have done/or are doing their PhD Thesis in the medicinal chemistry field. Currently other companies are contacted to arrange student work experience abroad in the next academic year.

Additionally, Passport to a Profession gives students the opportunity to simulate interviews with specialized professionals and improve their curricula, both activities provided by the Students Advisory Service. In this way, the students are strongly supported for achieving success in the real interview.

6. MONITORING AND EVALUATION

Monitoring and evaluating the quality and outcomes of the various programmes is a continuous effort, especially as the project has been so recently established. Several steps are followed in processing the data.

- A variety of statistical data for the whole process are collected before and after the training period.

- These statistical data and the two years of experience acquired in the project so far are analysed to enhance our understanding of the main requirements of the students as well as the reasons that drive the companies to participate in the programme.

The reports are structured according to the two main activities:

1. Passport to a Profession
2. Training in a Company

The final aim of the statistical analysis is to introduce significant improvements in the programme, which will be implemented in the following years after the careful examination of the data collected after the training period.

7. SUSTAINABILITY MEASURES

The mechanisms and activities that have been created need to be maintained in order to achieve sustainable results in the future. First of all, at the operational level, sustainability is ensured by embedding both activities, Training in companies and Passport to a Profession, in the study plan of the pharmacy degree. The students obtain 12 credits for the training period.
and 1 credit for attending a minimum number of the Passport to a Profession activity sessions.

The commitment of the Faculty leadership to the actions presented here is also grounded in a firm belief that the relationships established with the pharmaceutical companies will be long-lasting.

8. COSTS
The most significant cost assignable to the current case constitutes the time committed to setting up the activity by the authors of this paper. All of us are permanent staff at the University of Barcelona and have invested a considerable number of hours to starting, following up and improving the project every year. The time dedicated to this project needs to be combined with the time that each of us has to spend in research, administration, teaching, etc., depending on each individual position.

9. FUNDING
Improvement and innovation in teaching programm from the UB (Call 2013).

OUTCOMES & IMPACT

10. OUTCOMES
The long-term outcomes of this recently implemented programme are hard to assess at this point in time. However, a number of directly visible outcomes can already be detected and (sometimes) measured.

- The number of students that participate in the activities of the Student advisory service has improved notably. Moreover, they consider the sessions are very useful regarding the rates obtained by the tests.
- The number of students that spend a training period in a company and enrol in the Training in companies activity has increased considerably, from 40 in the academic year 2011-2012 to 60 in 2012-2013, and this academic year is considerably increasing.

After the training period, the students fill in a document about different aspects of the programme. The aim of this process is to identify any weak points in order to take active measures to improve the whole process and fulfil the expectations of both students and companies.
The data collected from 100 reports is divided in two main areas: the training period and the student perception of the Faculty orientation.

**Company:**
- 90% of students attended only 1 or 2 interviews before obtaining their placement. Two main aspects of this outcome can be highlighted: the ability of students to choose their placement well in terms of their preferred areas of interest, timetable, etc., which is the result of effective pre-interview coaching provided by the *Passport to a Profession* sessions.
- The internship assessment was mainly for 300 to 450 hours (46%). Only 18% of students spent the minimum required time (300 h) and the rest more than 450 h.
- The majority of the 100 students received economic compensation. It is worthy of note that although not compulsory for the companies, most students (80%) received payment. The amount of money was less than 500 euros per month in 61% of cases, while 32% received between 500 and 750 euros per month and only 6% received more than 750 euros.
- 87% of the students reported that the placement satisfied their expectations and interests.
- The students were also very positive about the role played by the tutor at the company. The tutor is considered to have been very accessible by 82% and to have taken an active role in the training by 87%. Of the latter, half of the students had the impression that the tutor was very involved in their training. These data are important because the most important person in the whole process is the tutor responsible for the training of the student. The positive marks awarded the tutors are indicative that the companies take this training period seriously and make a considerable effort.
Faculty of Pharmacy:

- The majority of the students (93%) consider that the Faculty is involved in the process, 40% of whom perceive that the implication is notable.
- 76% of the students recognize that the orientation given by the Faculty of Pharmacy is optimal or highly optimal.
- 92% of the students consider the paperwork in the process is easy or very easy to handle.

More ambitious is the idea of detecting what is lacking in the training period, so that the degree syllabus can be improved, with the ultimate aim of providing the students with the academic education they need to meet real-world necessities.

11. IMPACTS

The impact of the programme, despite its recent instigation, can already be seen at three levels.

Firstly, the students increased their awareness of the importance of carrying out a training period in a company during their degree. It is very important for the Faculty of Pharmacy that students engage in a valuable learning experience in a real-world scenario, by working in pharmaceutical companies. The syllabus of the Pharmacy degree has been considerably modified according to the recommendations of the EHEA to bring the university closer to both industry and society. Notably, every each at least two students has been contracted after the training period for the companies. In that sense the training period has been the way to entry in the company.
Secondly, the staff involved in the launch of the programme has proved to be a very efficient team that contributes to the project at different levels. On the one hand, students receive guidance in the *Passport to a Profession* sessions and advice from the coordinators of the subject in the Faculty. On the other hand, companies are constantly being informed by staff about the project. Considerable effort is dedicated to maintaining already established contacts and to starting new relationships with other pharmaceutical companies. Reflecting the importance of giving students access to the widest range of work areas possible, the staff have secured the collaboration of companies working in cosmetics, drug synthesis, drug analysis, drug development, drug production, water analysis, clinical analysis, food and wine production, health inspections, regulatory affairs, among others.

It is essential to establish a fluid and quick process that provides the company with candidates whose profile matches the required one as closely as possible in the shortest possible time. Having to interview a large number of candidates who are unsuitable for the placement offered is a waste of company time as well as being unproductive for the students. As part of the quality control of the process, it is vital to control the time the students spend in finding a placement and the time the company needs to find a good candidate.

Thirdly, the new programme has increased cooperation between the academic world (Faculty of Pharmacy) and pharmaceutical companies, thus successfully implementing the recommendations of the European Higher Education Area in the degree in Pharmacy. The process of transferring and exchanging knowledge contributes to the region’s social and economic development. The presence of the Faculty of Pharmacy in pharmaceutical companies has increased and several agreements have been signed. Future goals include increasing the mobility of students by searching for placements in companies based elsewhere in Europe.

### 12. INVOLVED STAKEHOLDERS AND BENEFICIARIES

**Faculty of Pharmacy-Student Advisory Service-University of Barcelona**

For a non-profit organization like the Faculty of Pharmacy, one of the main benefits of the new programme is being more connected to the “real world”, which includes an improved preparation of students for the labour market. The most important target of academia is to educate students to meet the necessities of society and to contribute to the development of the region and the world. The only way to carry out this important task is to provide the students with knowledge that can improve the quality of life of the general population as well as equip them with the tools to succeed in the professional world. The main benefit for the academic and administrative staff is an enhanced reputation and the personal satisfaction of being able to contribute to the success of the students.

**Students**

Undergraduate students are provided with an education that helps them gain access to the professional world. The university interactions with industry benefits students primarily by providing them with an educational program that is better aligned with the needs of the pharmaceutical companies, thus producing graduates well-equipped to pursue successful careers. The programme activities give students direct experience of leading companies where they can learn about the real needs of industry and establish contacts that might lead...
to future projects or employment. The students also receive inspiration and ideas that increase the quality of their education.

Companies
By having the opportunity to meet undergraduate students from the Faculty of Pharmacy, pharmaceutical companies gain access to students with a high level of education. The training period is sufficiently long for the tutors to evaluate the potential of the students and identify those that can be employed in the future. On the other hand, by contributing to the training of the students in specific areas, the companies can benefit from the availability of better-prepared graduates when they are recruiting new personnel in the future. In some cases, a training period in the company can be avoided if the employee has already received it during their degree.

Society
The impact of this project on society is not easy to measure, although a higher degree of integration of academia and industry is occurring. Companies generally benefit from students who are better prepared for the market environment.

LESSONS LEARNED

13. PRIMARY CHALLENGES
The foremost challenge was to find enough companies willing to accept undergraduate students for a training period. The number of collaborative companies already in contact with the Faculty was not enough to host all the potentially interested students. The most time-consuming aspect of the project was to inform companies of the project and to secure their collaboration. A pharmacist can develop a career in a wide range of positions. As part of the degree it was already compulsory to spend six months working in a hospital or community pharmacy, so to avoid a duplication of training it was necessary to find placements not related with the work carried out in these places. In this sense, we were very strict in the acceptance of placements. The tutors of proposed training periods had to previously submit a brief definition of the work the student was expected to do, and after acceptance by the coordinators in the Faculty of Pharmacy the company was accepted as a collaborative pharmaceutical company and students could be sent for the training period. Obviously, the same company can offer different positions at different times in the year. Another critical point was to prepare easily filled-in documents to facilitate and speed up the whole recruiting process. Then, reports were modified from the beginning until we were happy with the information we collected in each case.

The next challenge was that students should understand that a training position in a company cannot be guaranteed, since it depends on available offers. Also, once they obtain a placement, the students have to modify their syllabus. At the beginning, this created some conflicts, since some of the students would need an extra semester to complete their degree, depending on their existing timetable. However, others were able to fit their training period...
into their timetables simply by moving some theoretical classes. The final decision was ultimately up to the student, which was a new responsibility previously not part of the degree syllabus.

Finally, the project has been marked by the general economic downturn, which has resulted in the loss of tutors no longer employed by a company. However, in difficult economic times it is crucial that occupational training in higher education receives more attention.

Currently, there is no specific reward for the staff involved in the programme.

14. SUCCESS FACTORS
A number of important factors have fostered the success of the Training in Companies programme and the Passport to a Profession activity for undergraduate Pharmacy students.

A high level of partnering between the Faculty and industry has proved key to the success of the program. We have built up an extensive list of collaborative companies that are willing to accept students depending on their necessities. Moreover, the attendance of company representatives at informative meetings for students in the Faculty has increased the university's contact with the real professional world. Worthy of note, Galenicum an outstanding pharmaceutical company set in Spain, has granted a whole formative programme related to the tasks that a graduate in pharmacy could develop in each department of a company, of 20 h for students.

The second crucial factor has been the willingness of the students to engage in the programme. They were quick to understand that spending a period of their degree in a pharmaceutical company would not only enhance their education but also greatly increase their chance of successfully finding work in a company after their studies. The students were very participative and interested in attending the Passport to a Profession sessions.

An extremely dedicated and enthusiastic team was willing to take on the challenge of integrating a training period in the syllabus of the Pharmacy degree. The team was aware that in a tough economic environment companies could be more reluctant to accept students. Another key point was making the administrative changes in the syllabus to incorporate the training period and adjust the timetable of the theoretical classes accordingly. In this sense, the academic commission and the administration staff gave invaluable support to the project. The team held regularly scheduled meetings to build a solid structure for the project, taking into account all the different points of view (administrative, companies, Faculty and students).

15. TRANSFERABILITY
The general transferability of the presented approach may be considered as high in all science faculties that follow the recommendation of the European Higher Education Area by including a period of external training in companies. Many aspects of the programme and networking are transferable. The case of the Faculty of Pharmacy provides key learning points specifically for science faculties in Catalonia.
16. PUBLICATIONS / ARTICLES

- El grado de farmacia de la universidad de Barcelona oferta la asignatura optativa prácticas en empresas presented by García, E.; Escolano, C.; Pallas, M.; Miñarro, M. at the IV Congreso Internacional de Educación Superior en Ciencias Farmacéuticas in La Laguna, Spain

- Passaport a la professió: Nova activitat del grau de Farmàcia presented by Miñarro, M.; Pallas, M.; García, E.; Lluch, A.; Escolano, C. at the Setena Trobada de Professors de Ciències de la Salut in Barcelona, Spain. Published in Revista de la Fundación Educación Médica 2013, 16 (S1)


17. LINKS

- http://www.ub.edu/farmacia/atencio_est/practiquesfarmacia.htm
- http://www.ub.edu/farmacia/atencio_est/practiquesfarmaciaprocediment.htm

18. KEYWORDS
Passport to a profession, training, syllabus of the Degree of Pharmacy, pharmaceutical companies, evaluation, employability, coaching, career education.

19. PUBLIC CONTACT DETAILS
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