

CURRICULUM DEVELOPMENT IN AIR TRANSPORT MANAGEMENT

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Abstract. One of the most important tasks for universities of applied sciences is to create curricula and organize the study process in a way that guarantees the employer's recognition. The speciality of air transport management is popular among student candidates and, as an additional (minor) speciality, useful for students of other specialities, forming a solid basis for their career in modern civil aviation.

The concept of the air transport management speciality consists of a number of specializations. That is why the structure of the curriculum and the learning outcomes vary depending on the educational institution.

This paper discusses and presents the results of a study trying to establish the balance between the employers' expectations, the opinions of academic staff and students' presumptions, as well as between the academic traditions and specialization through professional practice for the air transport management curriculum development. The application of the quality system and effective use of academic staff involved in the teaching process to achieve the learning outcomes are also in the focus.

Introduction

Thanks to the growth of air transportation industry the speciality of air transportation management (management in civil aviation) became very popular in Europe, being at the same time an acceptable article of income for aviation educational institutions at the end of the 20th century. For education institutions which already had some aviation study specialities like aircraft maintenance, air traffic service, aircraft piloting etc, it was an easy and cheap solution to add to the basic aviation subjects some courses of economics to create a new curriculum. It is often seen as a body of knowledge, the content of education to which the students need to be exposed. [1]. Additionally, it is useful to hold some management related curriculum for the educational institution to have competence of management or successful participating in R&D projects. But often learning outcomes of the created management curricula were not in accordance with the air transportation industry needs. Specialization of

the curriculum mainly based on the opinion of the academic staff and relations with some enterprises from civil aviation.

Background

Estonian Aviation Academy (EAVA) is an experienced educational organisation in the field of training specialists of aviation management.

EAVA, (former Tartu Aviation College), was founded in 1993 with the purpose of training aviation specialists for the needs of Estonia. The study process is based on cooperation with universities and aviation companies. The specialities offered at EAVA are listed below: Air Traffic Service; Management of Communication and Navigation Systems, Aeroplane Piloting, Helicopter Piloting, Aircraft Maintenance and *Aviation Company Management*. [2] Up to the present time 119 specialists of aviation company management have been prepared.

Today graduates of the academy are working at airlines, airports, the Ministry of Economic Affairs and Communications, the Estonian Civil Aviation Administration, Estonian Air Navigation Services (ANS) and other aviation related enterprises.

Air Transportation Industry Demand – Who is Aviation Manager?

Educated aviation managers have to compete at the job market with candidates without aviation education. For being employed, for example in an airlines office, there may be no strong requirements for the education profile or work experience in civil aviation. As a rule, successful candidates are training on the job attending some speciality course from IATA or other aviation training organisation. Sometimes, if the student has passed enough subjects it is possible to achieve a degree in aviation management. But as usual, a specialist with confined specialisation is sitting in the first row of the candidates for redundancy. However, if the specialist is educated and trained for a wider sphere of professional activity, it will give him/her an opportunity to acquire quickly some near specialities [3]. As the result, the employee would continue the career in aviation in the new speciality and at the same time the employer can use his/her earlier competence if needed.

The situation has been dramatically changed during the last years when airlines began to search for possibilities of cutting costs and adding personnel effectiveness. It is required that aviation specialists are more multifunctional and able to competently cooperate with other structural units at aviation enterprises.

In 2010 – 2011 Estonian Aviation Academy carried out a comprehensive survey of the needs of Estonian aviation enterprises and organisations for finding out the enterprise's needs.

The results indicate that the following characteristics are expected from a good specialist:

- good general scope and knowledge based on aviation
- holistic view on aviation and speciality
- systemic approach, analytical thinking
- good knowledge of aviation safety management systems
- high sense of responsibility and readiness to work independently (if needed as a leader)
- basic knowledge of economics
- knowledge reinforced by substantial practice [4].

Student's behavior based approach

Without higher education basic education cannot progress. They are interdependent and both should receive priority for sustainable achievement of education for all [5]. On the higher education level, students are interested in receiving the diploma of higher education as quickly as possible with the opportunity of continuing their education in master's studies.

A curriculum is much more than just a list of subjects. Aviation knowledge, especially from the point of view of aviation safety, has to be known and be measured and independent from both teacher and learner [1]. In social sciences, like management studies are, it will not always work. Some subjects **require** discussions, offering different ways of solutions. This uncertainty may disorientate the students. In subjects requiring exact answers, the students may expect discussion and accepting their personal opinion. In subjects which enhance critical thinking, they may expect multiple choice tests as forms of control. From this point of view, the key element of the curriculum should be raising the student's awareness of the subject's learning outcomes and a careful choice of the forms of learning and control.

According to the social learning theory, while we may learn from receiving rewards and punishments, we also learn from examples of the others. During studies, as a rule, the students are very motivated to have practice in aviation enterprises where they want to receive work experience and understand their preferences for the future career development. Often the main aim of the practice - the confirmation of the theoretical knowledge fades into the background. From the point of view of the humanist orientation, the goals of learning are not always the technical learning, skill acquisition or information based, but often quite vague or broad, for example, personal growth [abid]. As a result, students who are oriented to the career and practical skills wrongly accept inside information as the main knowledge. For ensuring the link between theoretical knowledge and practice, additionally to the strong and well-thought-out theoretical studies practical specialists have to be involved with a single lecture in some theoretical subjects or with their own special subjects. Often the content of practice is different for different cases, but it should have logical timing and clear learning outcomes which are based on the previously acquired theoretical knowledge.

Future challenges

Curriculum development is a continuous process in the course of which it is necessary to observe that the introduced amendments influence the results [5]. For the curriculum of air transport management the main indicators are successful employment of graduates in aviation and the satisfaction of their employers. To guarantee the quality of training, in addition to the regular feedback questionnaires from students and employers, it is necessary to involve in the study process managing professionals of the aviation companies with special subjects or in the basic courses for keeping a strong link between theory and practice. An important indicator to measure the quality of the curriculum is the ability to offer some courses from curricula for the employees of aviation companies.

Management in aviation means a very broad spectrum of specializations. Jobs where during the two past years graduates of the Estonian Aviation Academy speciality of Aviation Management successfully competed are Business Analyst, Route Analyst, Revenue Manager, Ground Handling Manager, Operations Manager in Catering Services, Specialist of Resource Management and Development Unit, AIS Specialist, Meteorology Specialist, Airline Safety Specialist, Crew Planner, Sales Manager.

The need to meet all demands, an educational institution has to offer lots of elective subjects or create a margin for optional subjects in the curriculum. An important limiting factor for creating a number of elective subjects is cost-effectiveness. Often the solution is to offer electives to the students of other specialities. But some subjects are too specific to find enough participants and a reasonable solution could be cooperation with other educational institutions or using the opportunities of students' mobility.

It is impossible to forecast exactly the specific job need. Aviation companies cannot predict the specific job creation for more than a year. As usual, this time is shorter. That is why the specialization time for students shall be planned as short as possible within the study process.

The new International Civil Aviation Organization (ICAO) initiatives for the Next Generation Aviation Professionals (NGAP) were launched to ensure that enough qualified and competent aviation professionals were available to operate, manage and maintain the future international air transport system [6]. The initiative is closely related to Safety Management.

The objectives of the ICAO SMS (Safety Management System) course are to develop the participants' knowledge of safety management concepts and the ICAO safety management requirements in guidance material, as well as knowledge and skills to certify and oversee the implementation of the SMS by operators and service providers, in compliance with the ICAO requirements [7]. It means that before studying aviation safety, the student has had enough aviation theoretical and practical background. Basic knowledge of recognizing of hazards and risk assessment are also applicable for commercial activities in air transportation.

CONCLUSION

The content of the curricula of air transport management (aviation management) varies in different states and educational institutions. Nowadays, in the highly competitive environment, aviation enterprises are looking for effectiveness and ways of cutting costs employing multifunctional personnel.

A successful curriculum of air transport management has to provide:

- basic aviation knowledge with safety management included in social subjects as an integral and relevant part
- wide range of opportunities for specialization in air transportation industry management (airport, airline, ATC, aircraft maintenance providers etc) based on a holistic view on civil aviation

- involving successful operational specialists possessing competence in theoretical issues of the subjects
- well-timed, consistent and reasonable balance between theoretical and practical learning
- opportunities for students acquiring specific subjects in other universities, at the same time maintaining quality control by the basic institution
- opportunities for students from other specialities and universities for participating in the air transport management study module
- reasonable duration of study with high level of flexibility and innovation to ensure state-of-the-art education.

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