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Competence model of an aviation specialist

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Abstract. This article examines the competence model of an aviation specialist, consisting of several key components: technical knowledge, practical experience, communication and analytical skills, managerial expertise and an emphasis on continuous learning. Technical knowledge includes an understanding of aviation systems, aerodynamics, flight mechanics and relevant safety standards. Practical experience covers working with equipment, participating in maintenance and repair, as well as working with databases and software. Communication skills are necessary for effective interaction with the team and clients, presentation of technical information and writing reports. Analytical skills are important for data analysis and problem solving, while management expertise includes the organization of work processes and project management. Educational programs must meet international standards and requirements, providing students with up-to-date knowledge and skills for a successful career in the aviation industry. It is important to take into account current technological trends and the changing needs of the industry in order to maintain a high level of professional training. Students must also be able to adapt to new challenges and requirements in order to be competitive in the global aviation job market. Constant self-development helps specialists stay relevant.

Keywords: aviation, competence model, technical knowledge, practical experience, training, standards, professional skills.

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Introduction

The competence model of an aviation specialist usually consists of several components (Figure 1) [1].

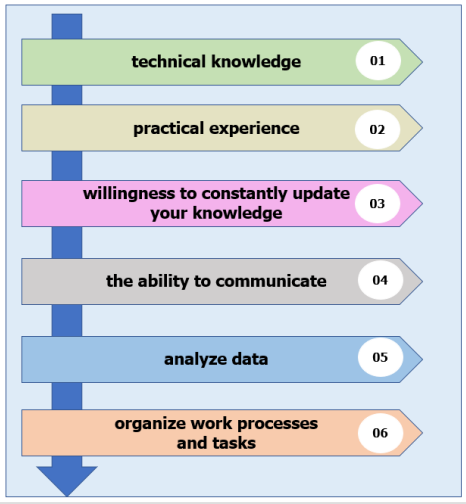

Figure 1. Competence model of an aviation specialist [1]

The first of these is technical knowledge – an understanding of the principles of operation of aviation systems, components and equipment. In-depth knowledge is required in the field of aerodynamics, flight mechanics and principles of aircraft construction, as well as knowledge of technical documentation and standards in the aviation industry. An understanding of basic procedures and regulatory requirements in the field of flight safety. The second is practical experience working with aviation systems, tools and equipment is essential, as is participation in the maintenance and repair of aviation components and systems. Experience working with aviation databases, software and control systems is also necessary. The ability to communicate effectively with the team and clients, the ability to present technical information in an understandable and accessible way, the skills of writing reports and documentation related to technical tasks and processes. The ability to analyze data and situations to identify problems and find solutions, the ability to make decisions based on a logical and systematic approach, the skills to diagnose and eliminate technical malfunctions. The ability to effectively organize work processes and tasks, the ability to coordinate team work and manage projects, an understanding of the principles of quality management and safety in aviation. Willingness to constantly update their knowledge and skills in accordance with changes in the aviation industry, the ability to independently study new technologies and procedures, participate in trainings, seminars and courses to improve professional competencies [1].

The methodology

The competence model of an aviation specialist is a system of knowledge, skills and experience necessary for successful work in this field (Figure 2) [2].

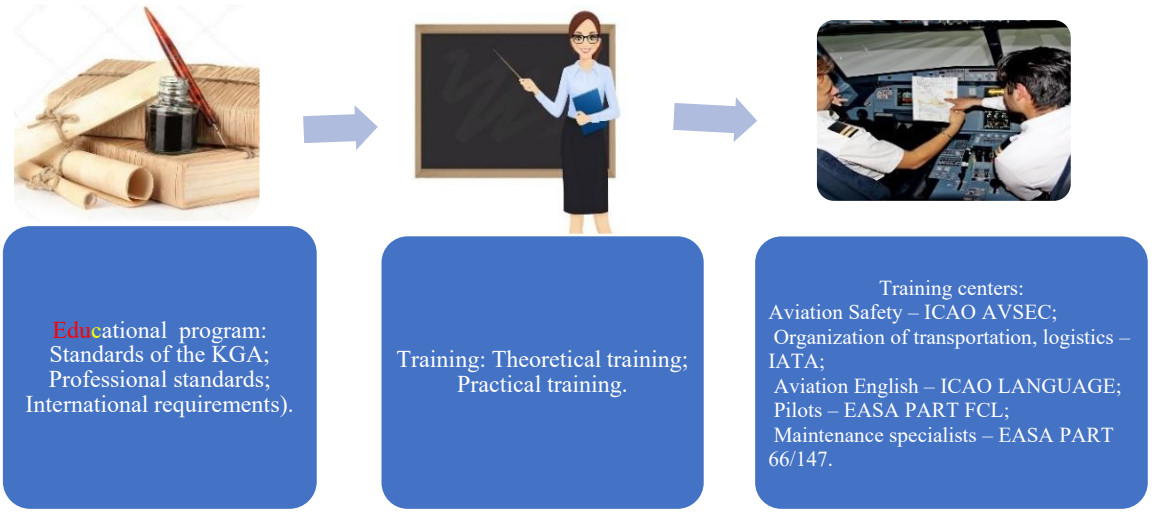

Figure 2. A system of knowledge, skills and experience for successful work in the field of civil aviation [2]

It covers technical expertise, communication, analytical and management skills, and emphasizes the importance of continuous learning and self-development to stay on trend in the rapidly developing aviation industry.

Educational programs in higher education institutions offering aviation education is developed taking into account the requirements and needs of the aviation industry. It must comply with regulations and requirements established by competent aviation organizations and government authorities. This may include state educational standards, safety standards, as well as specific aviation requirements related to training and certification. Professional standards are widely used in aviation, which define the requirements for the skills, knowledge and competencies of specialists. Professional standards are usually developed in collaboration with industry associations and organizations and define the necessary competencies for various professional roles in aviation [3].

And also in aviation, there are international standards and requirements developed by the International Civil Aviation Organization (ICAO), the European Aviation Safety Agency (EASA) and the International Air Transport Association (IATA) [4]. If the ICAO defines international standards and practices related to flight safety, navigation, environmental protection and other aspects of aviation, then EASA is the regulatory body of the European Union (EU) in the field of civil aviation [5]. It develops and regulates standards and regulations related to flight safety, aircraft certification, personnel training and licensing, technical requirements and other aspects of aviation in EU member States. IATA represents the interests of airlines and works to develop standards and recommendations related to the operation of aviation companies and to improve the quality and safety of air transport [7]. It develops standards and guidelines on baggage, ticketing, cargo transportation, security and other aspects that affect the operation of airlines.

These organizations play an important role in setting international standards and requirements in aviation. Educational programs in aviation should take into account these requirements and focus on ensuring that students meet high international standards and quality in order to prepare them for work in the global aviation industry [8].

The educational program should take into account modern technological and industrial requirements in aviation. This includes new developments in the field of aviation systems, components and equipment, as well as current procedures and working methods in the industry. It should be designed to meet the needs and expectations of employers and provide students with the necessary knowledge, skills and competencies for a successful career in aviation. Such programs typically provide students with a wide range of knowledge and skills needed to work in aviation. They include both theoretical training and practical training so that students gain a complete understanding of the work and requirements in the field.

Findings/Discussion

In theoretical training, students study:

– basic principles of aerodynamics, flight mechanics, navigation, electronics and other technical aspects of aviation;

– Lectures and seminars conducted by experienced teachers who share their knowledge and experience with students;

– Using modern educational technologies such as computer programs, visualizations and modeling to help students better understand complex concepts.

In practical training, students can gain practical experience in specialized aviation laboratories, simulation centers, aviation workshops or in practical classes within the framework of coperation with aviation companies (Figure 3) [9].

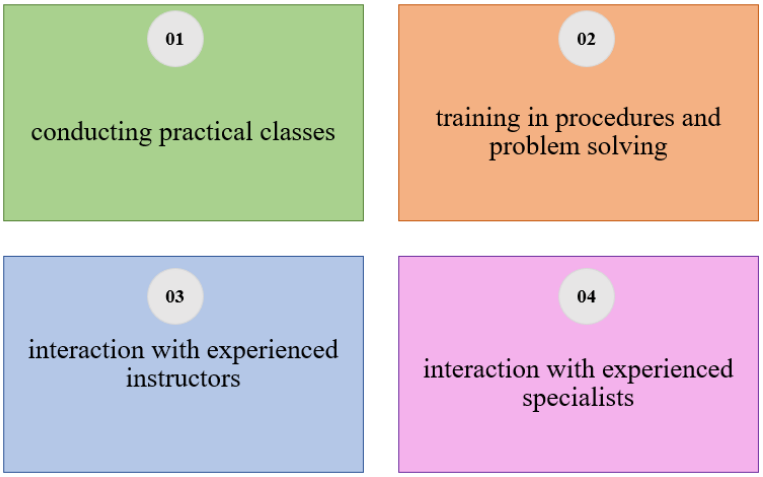

Figure 3. Advantages in practical training of students [9]

Practical training is the experience of working with real aviation systems, components and equipment:

– conducting practical classes, training and simulations where students can put their knowledge into practice;

– training in the implementation of procedures and solving problems faced by aviation professionals;

– interaction with experienced instructors and specialists who can provide feedback and guidance during practical training [10].

The training programs include the development of communication skills, such as the ability to communicate effectively in a team, compile technical reports and documentation, and interact with customers and other stakeholders. Students develop analytical skills for problem solving, data analysis, troubleshooting, and decision-making in the aviation field. Educational programs may include managerial skills such as the ability to organize work processes, coordinate team work, manage projects, and comply with regulatory requirements.

The Civil Aviation Academy supports students in their learning and development by providing access to a range of additional resources, updated knowledge, and professional development opportunities. These are officially accredited and certified centers that offer students the opportunity to gain practical experience and assess their skills. They use modern aviation equipment, simulators and software to provide realistic practical conditions, modeling real-world scenarios and situations so that students can apply their knowledge and skills in a controlled environment. In the end, certificates are issued confirming the students' qualifications in accordance with industry standards and requirements [8].

This structure of practice-oriented training at the Academy allows students to gain fundamental knowledge and apply it in practice using modern equipment and tools. The training is conducted in close cooperation with experienced teachers and specialists, providing students with the necessary support and feedback.

Conclusion

The competence model of an aviation specialist is a comprehensive approach to the education and training of professionals, including technical knowledge, practical experience, communication, analytical and managerial skills. Modern educational programs focused on the aviation industry must comply with international standards and requirements established by organizations such as ICAO, EASA and IATA in order to ensure high quality training of specialists. Training programs should include both theoretical and practical training, use modern technologies and provide access to relevant resources for continuous professional development. As a result of this approach, specialists will have the necessary competencies for a successful career in the rapidly developing aviation industry, able to effectively adapt to changes and new challenges in the industry.

Contribution of the authors

Kalekeyeva M.E. – made a significant contribution to the collection and analysis of literature on continuous robotic manipulators inspired by biological models. His work focuses on the study of the current state of this technology, its application and management issues, which contributes to the development of more flexible and adaptive robotic systems.

Muratbekova G.V. – participated in the development of the concept of work and writing the text of the article with the presentation of analytical data, ensuring the integrity of all parts of the article.

Garmash O.V. – participated in the critical revision of the content of the article and in the approval of the final version for publication

Assilbekova I.ZH., M.Amanova – participated in the development of the concept of work and writing the text of the article with the presentation of analytical data, ensuring the integrity of all parts of the article. References

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Компетентностная модель специалиста в сфере авиации

Аннотация. В данной статье рассматривается компетентностная модель специалиста в авиационной сфере, состоящая из нескольких ключевых компонентов: технических знаний, практического опыта, коммуникативных и аналитических навыков, управленческой экспертизы и

акцента на постоянное обучение. Технические знания включают понимание авиационных систем, аэродинамики, механики полета и соответствующих нормативов безопасности. Практический опыт охватывает работу с оборудованием, участие в обслуживании и ремонте, а также работу с базами данных и программным обеспечением. Коммуникативные навыки необходимы для эффективного взаимодействия с командой и клиентами, представления технической информации и написания отчетов. Аналитические способности важны для анализа данных и решения проблем. Управленческая экспертиза включает организацию рабочих процессов и управление проектами. Образовательные программы должны соответствовать международным стандартам и требованиям, обеспечивая студентам современные знания и навыки для успешной карьеры в авиационной индустрии. Важно учитывать современные технологические тренды и изменяющиеся потребности отрасли, чтобы поддерживать высокий уровень подготовки специалистов. Студенты также должны уметь адаптироваться к новым вызовам и требованиям, чтобы быть конкурентоспособными на мировом авиационном рынке труда. Постоянное саморазвитие помогает специалистам оставаться актуальными.

Ключевые слова: авиация, компетентностная модель, технические знания, практический опыт, обучение, стандарты, профессиональные навыки.

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Авиация саласындағы маманның құзыреттілік моделі

Аңдатпа. Бұл мақалада бірнеше негізгі компоненттерден тұратын авиация саласындағы маманның құзыреттілік моделі қарастырылады: техникалық білім, практикалық тәжірибе, коммуникативті және аналитикалық дағдылар, басқарушылық сараптама және тұрақты оқытуға баса назар аудару. Техникалық білім авиациялық жүйелерді, аэродинамиканы, ұшу механикасын және тиісті қауіпсіздік ережелерін түсінуді қамтиды. Практикалық тәжірибе жабдықпен жұмыс істеуді, техникалық қызмет көрсету мен жөндеуге қатысуды, сондай-ақ мәліметтер базасы мен бағдарламалық жасақтаманы қамтиды. Қарым-қатынас дағдылары топпен және клиенттермен тиімді қарым-қатынас жасау, техникалық ақпаратты ұсыну және есептер жазу үшін өте маңызды. Аналитикалық қабілеттер деректерді талдау және мәселелерді шешу үшін маңызды. Басқарушылық сараптама жұмыс процестерін ұйымдастыруды және жобаларды басқаруды қамтиды. Білім беру бағдарламалары халықаралық стандарттар мен талаптарға сай болуы керек, студенттерге авиация саласындағы табысты мансап үшін заманауи білім мен дағдыларды қамтамасыз етуі керек. Мамандарды даярлаудың жоғары деңгейін ұстап тұру үшін заманауи технологиялық трендтер мен саланың өзгеріп отыратын қажеттіліктерін ескеру маңызды. Студенттер сонымен қатар әлемдік авиациялық еңбек нарығында бәсекеге қабілетті болу үшін жаңа сынақтар мен талаптарға бейімделе білуі керек. Үнемі өзін-өзі дамыту мамандарға өзекті болып қалуға көмектеседі.

Түйін сөздер: авиация, құзыреттілік моделі, техникалық білім, практикалық тәжірибе, оқыту, стандарттар, кәсіби дағдылар.

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