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# Developing competency-based training and assessment of cabin crew in an airline

Opinnäytetyö

Matkailualan kehittäminen  
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## **Abstract**

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The aim of this thesis was to develop competency-based training and assessment for cabin crew to ensure they possess the necessary knowledge, skills, and attitudes to perform their duties effectively and safely. The study focused on identifying the most suitable assessment methods to comprehensively evaluate cabin crew competence, cooperation, and adaptability across various operational contexts. The development process was guided by international regulatory requirements, including the International Civil Aviation Organisation (ICAO) recommendations, and informed by current research and best practices in the aviation industry.

A further objective was to provide the airline with a concrete, evidence-based action plan to enhance training quality, which is vital not only for safety and crew performance but also for improving the overall passenger experience. The action research project involved stakeholders throughout the process and utilized diverse data collection methods such as questionnaire, observations, and co-development to assess current practices and explore opportunities for improvement.

The findings revealed general satisfaction with the existing training programme but also highlighted several areas requiring development. Key concerns included the structure and content of the training, a lack of practical and personalized instruction, and insufficient constructive feedback from instructors. The study emphasized the critical importance of instructors possessing up to date industry knowledge, strong pedagogical competence, and a supportive approach to teaching. Addressing these areas can create a more engaging, effective, and safety-focused training programme for cabin crew.

Furthermore, the results underlined the importance of strengthening practical learning, improving instructor competence, promoting active participation, and reinforcing essential skills such as managing disruptive passengers and delivering high quality customer service. Personalized feedback discussions, consistency in the training language, and the recognition of prior learning are essential for fostering professional growth and supporting internal career mobility. Competency-based training ensures that cabin crew are well prepared to handle real life situations with confidence, thereby improving both service quality and customer satisfaction.

In addition, integrating service design principles, such as empathy mapping, co-development, iterative feedback, and customer journey mapping, further supports the creation of a customer centric and innovative training culture. By implementing a comprehensive, inclusive, and forward-looking training strategy that leverages individual skills and emphasizes continuous improvement, the airline can develop a highly skilled and motivated cabin crew, enhance operational safety, and strengthen its reputation as a reliable and customer focused airline.

## **Tiivistelmä**

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Tämän opinnäytetyön tavoitteena oli kehittää ja parantaa matkustamohenkilökunnan osaamisperusteista koulutusta ja arviointia, jotta heillä olisi tarvittavat tiedot, taidot ja asenteet tehtäviensä suorittamiseksi tehokkaasti ja turvallisesti. Tutkimuksessa keskityttiin tunnistamaan sopivimmat arviointimenetelmät, joilla voidaan kattavasti arvioida matkustamomiehistön osaamista, yhteistyökykyä ja sopeutumiskykyä erilaisissa toimintaympäristöissä. Kehitystyötä ohjasivat kansainväliset sääntelyvaatimukset, kuten Kansainvälisen siviili-ilmailujärjestön (ICAO) suositukset, sekä ilmailualan nykyinen tutkimus ja parhaat käytännöt.

Opinnäytetyön tarkoituksena oli tarjota lentoyhtiölle konkreettinen, näyttöön perustuva toimintasuunnitelma koulutuksen laadun parantamiseksi, mikä on tärkeää paitsi turvallisuuden ja miehistön suorituskyvyn kannalta myös matkustajien yleisen kokemuksen parantamiseksi. Toimintatutkimusprojektiin osallistuivat sidosryhmät koko prosessin ajan, ja siinä hyödynnettiin erilaisia tiedonkeruumenetelmiä, kuten kyselylomaketta, havainnointia ja yhteiskehittämistä, nykyisten käytäntöjen arvioimiseksi ja parannusmahdollisuuksien kartoittamiseksi.

Tutkimuksen tulokset osoittivat yleisen tyytyväisyyden nykyiseen koulutusohjelmaan, mutta toivat esiin myös useita kehitettäviksi todettuja alueita. Keskeisiä huolenaiheita olivat koulutuksen rakenne ja sisältö, käytännölläheisen ja yksilöllisen opetuksen puute sekä kouluttajien antaman rakentavan palautteen riittämättömyys. Tuloksissa korostui, että kouluttajilla on oltava ajantasainen alan tuntemus, vahva pedagoginen osaaminen ja tukeva opetustyyli. Näiden alueiden parantaminen voi luoda entistä kiinnostavamman, tehokkaamman ja turvallisuuteen keskittyvän koulutusohjelman.

Lisäksi tulokset korostivat käytännön oppimisen vahvistamisen, kouluttajien osaamisen parantamisen, aktiivisen osallistumisen edistämisen ja keskeisten taitojen, kuten häiritsevien matkustajien hallinnan ja korkealaatuisen asiakaspalvelun, vahvistamisen tärkeyttä. Yksilölliset palautekeskustelut, koulutuksen kielikäytön yhdenmukaisuus ja aiemmin hankitun osaamisen tunnustaminen ovat olennaisia ammatillisen kasvun edistämiseksi ja sisäisen urakehityksen tukemiseksi. Osaamisperusteinen koulutuksen avulla voidaan varmistaa, että matkustamomiehistö on hyvin valmistautunut käsittelemään todellisia tilanteita luottavaisesti, mikä parantaa sekä palvelun laatua että asiakastyytyväisyyttä. Myös palvelun suunnitteluperiaatteiden, kuten empatian kartoittamisen, yhteiskehittämisen, toistuvan palautteen ja asiakaskokemuksen kartoittamisen, integroiminen tukee entisestään asiakaslähtöisen ja innovatiivisen koulutuskulttuurin luomista.

Ottamalla käyttöön kattavan, osallistavan ja tulevaisuuteen suuntautuvan koulutusstrategian, joka hyödyntää yksilöllisiä taitoja ja korostaa jatkuvaa parantamista, lentoyhtiö voi kehittää erittäin ammattitaitoisen ja motivoituneen matkustamohenkilökunnan, parantaa toimintansa turvallisuutta ja vahvistaa mainettaan luotettavana ja asiakaslähtöisenä lentoyhtiönä.

## Foreword

This thesis is the result of a rewarding and insightful journey in developing competency-based training and assessment for cabin crew. I would like to express my deepest gratitude to Jettime for providing me with the opportunity to undertake this development work. I am especially thankful for the support I have received from my employer throughout this process, including the flexibility of part-time work that has allowed me to focus on my studies.

I extend my sincere appreciation to my thesis supervisor for his invaluable guidance, encouragement, and expertise, which have been instrumental in shaping this research. His insights and feedback have significantly contributed to the quality and depth of this study.

Additionally, I would like to express my heartfelt thanks to my family and friends for their unwavering support, patience, and encouragement. Their willingness to listen, motivate, and stand by me throughout this journey has been truly invaluable. Their support has been a source of strength and inspiration, making this process not only possible but also deeply meaningful.

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## 1 Introduction

The aviation industry operates in a highly regulated and safety-critical environment where cabin crew competence is essential for ensuring passenger safety, service quality, and operational efficiency. As front line personnel, cabin crew must possess a wide range of skills covering safety procedures, emergency response, customer service, and cultural awareness. Competency-based training and assessment (CBTA) has become a crucial approach to equipping cabin crew with the necessary knowledge, skills, and attitudes to perform their duties effectively.

Despite the structured nature of CBTA, continuous improvement is required to ensure that training programs align with industry requirements, evolving safety regulations, and best practices. The aviation industry has continually evolved with a strong focus on safety and security. As technology advances, new challenges and risks in operations must be addressed (Baldwin, 2017, 33–36). Given the dynamic nature of the industry and its operating environment, aviation education must evolve to provide more effective training that enhances the knowledge and skills of professionals (Sheehan, 2013, 220–223). Moreover, the aviation sector is a leading example of highly developed crew resource management (CRM) practices, supported by advanced simulators and a robust competency assessment framework. CRM is increasingly integrated into training to address human behavioral aspects, foster skill development, and maintain competence (Alavosius, Houmanfar, Anbro, Burleigh & Hebein, 2017, 142–144).

This thesis examines how the current competency-based training and assessment of cabin crew can be improved to better meet the unique requirements of the aviation industry. Additionally, it explores how the professional competence of cabin crew members can be further enhanced to support their career development and overall effectiveness in their roles.

Adopting an action research strategy, this study emphasizes practical problem solving and continuous improvement through iterative cycles of data collection, reflection, and implementation. Research methods include survey, observation, and co-development techniques to gather insights from cabin crew and instructors. By involving key stakeholders, this study aims to identify shortcomings in current training and assessment processes and propose workable solutions for improvement.

The research question guiding this study is: How can the current competency-based training and assessment of cabin crew be improved to take into account the specificities of the aviation industry, safety requirements, and regulations, and how can the professional competence of cabin crew be promoted? Addressing this question will contribute to the development of more effective training methods that enhance cabin crew performance, ensure compliance with industry standards, and promote overall safety and service excellence in airlines.

### 1.1 Introduction of the airline

Jettime, a Danish-owned airline founded in 2020, traces its roots back to 2006. A subsidiary called Jettime Oy operates in Finland, catering to Finnish guests, and in 2024, Jettime expanded by establishing another subsidiary, Jettime AB, in Sweden. The airline operates strictly in a business-to-business model, providing tailored air transport solutions for charter companies, other airlines, and various ad hoc customers requiring air transport. These services are delivered from home bases in the Nordic region, including Copenhagen, Billund, Helsinki and Arlanda to destinations across the Europe. In the financial year 2023/2024, Jettime reported a revenue of 2.0 billion DKK and a PBT of 44 million DKK, with positive equity. (Jettime, 2024.)

Around 500 employees, known as Jettimers, are based in Denmark, Finland, and Sweden, most of whom serve as cabin crew and pilots. The company also operates its own technical department and employs mechanics to maintain its fleet. A strong sense of social bonding defines the work culture, with employees viewing each other as a professional "family" built on values such as accountability, courage, trust, and relationships. The motto, "More than just a flight," reflects the company's commitment to delivering exceptional service every day, supported by competitive terms through seven different collective agreements. (Jettime, n.d.)

The primary business focus is charter production for major Nordic tour operators (Tui, Ving, Spies, Apollo, Bravo Tour, Club La Santa), transporting their guests to popular holiday destinations across the Europe, especially sun and beach locations. During the winter months, the Canary Islands are a top destination, while the summer season sees flights to the Greek Islands and destinations in Spain. Charter flights are typically booked 12 months in advance for durations ranging from 10 to 26 weeks. In addition to charter flights, the airline operates ad hoc services for clients such as football clubs, private companies, and armed forces. (Jettime, n.d.)

An integral part of Jettime's business model involves flying on behalf of other airlines. As an experienced outsourcing partner, the airline engages in long term strategic partnerships and handles urgent aircraft capacity needs for short and medium term contracts. This type of operation is called ACMI which stands for aircraft, crew, maintenance, and insurance. It is a type of wet lease agreement in the aviation industry, where an airline provides an aircraft along with its crew, maintenance, and insurance to another airline or operator. Jettime is known for its agility and its ability to adopt the service concepts of its clients. In summer 2024, ACMI operations were conducted for SAS from the Copenhagen base, and flights to Greenland were operated six days a week for Air Greenland. For summer 2025, further expansion in ACMI services is planned, with increased capacity for SAS and new flights for Finnair from Helsinki. The cooperation with Air Greenland will also expand, with operations planned to the new airport in Nuuk. (Jettime, 2025.)

The fleet of Jettime consists of 11 Boeing NG 737-800 aircraft, each with 189 seats, and one Boeing NG 737-700 with 148 seats. The average age of the fleet is 15 years. To reduce the environmental impact, all aircraft are equipped with winglets, resulting in a 1.8 % reduction in CO2 emissions, while seven aircraft feature split scimitar winglets, further reducing emissions by 3.6 %. (Jettime, 2025.)

## 1.2 Background of the thesis

I have been working in the aviation industry since 2015 as a cabin crew member, spending most of my career with Jettime, a Danish airline. Over the past decade, training in the industry has increasingly shifted towards a competency-based approach, a trend that is expected to continue. This shift is driven by the need for more effective training methods that enhance safety and efficiency. Recognizing the significance of this change, I was motivated to explore the topic further. Moreover, Jettime itself expressed a strong interest in researching and developing competency-based training and assessment methods for cabin crew, reinforcing the relevance of this study. Notably, no such research has previously been conducted within the organization, which makes this study a valuable source of internal insight for designing future training programs.

Currently, in my role as head of cabin as a cabin chief, I am responsible for in-flight safety and ensuring that cabin crew members are proficient in their duties. Part of this responsibility involves ensuring that crew members can effectively apply their knowledge and skills acquired during training. Throughout my years of participating in and observing training sessions, I have witnessed

the transition from traditional classroom-based, lecture style training, where theoretical knowledge was delivered with minimal practical application, to more dynamic and interactive training methods. This evolution has introduced greater engagement and hands-on experience, which are crucial in preparing crew members for real world scenarios.

### 1.3 Objective and purpose of the thesis

The objective of the thesis is to develop the existing competency-based training and assessment of cabin crew to ensure that they are equipped with the necessary knowledge, skills and attitudes to perform their duties effectively and safely (EASA, 2023). The objective is also to develop assessment methods that comprehensively measure the competences, cooperation skills and adaptability of cabin crew to different working environments and situations (ICAO, 2019).

The development project will also seek to take into account international regulatory requirements and standards, such as the recommendations of the International Civil Aviation Organisation (ICAO), as well as the latest research and best practices in the field (ICAO, 2019). This will ensure that training and assessment are in line with industry requirements, safety standards and best practices (EASA, 2023).

The purpose of the thesis is to provide an airline with a concrete action plan for the development of competency-based training and assessment of cabin crew. By promoting the quality of training and assessment of cabin crew, the safety, efficiency, and passenger satisfaction of aviation can also be improved (Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2010). The study will help identify gaps in current competence requirements and any shortcomings or areas for improvement in the training and assessment of cabin crew (ICAO, 2019).

Developing the training and assessment of cabin crew is important for several reasons. The role of cabin crew is to ensure the safety of passengers during a flight. Effective and up to date training and regular assessment will ensure that they are able to deal with different situations, such as accidents or emergencies. (FAA, 2022.) High quality training and assessment improve the professionalism and service level of cabin crew. This can increase passenger satisfaction and improve the airline's reputation. (Wu, Law & Jiang, 2022.) Aviation and passenger needs are constantly changing, for example, with the introduction of new technologies and aircraft. It is therefore important to regularly update training materials and methods (EASA, 2023). Well designed and implemented training and fair evaluation can improve the well being and motivation of cabin crew.

This, in turn, can reduce staff turnover and sickness absence (Salas, Wilson, Burke & Wightman, 2010, 392–412). In addition, the aviation industry has strict regulations and standards for the training and qualification of cabin crew. Continued development of training and assessment will help airlines comply with these regulations and ensure that they operate safely and legally. (ICAO, 2019.)

## 2 Civil aviation

Civil aviation encompasses all non-military aviation operations, including commercial air transport, such as passenger and cargo flights, as well as general aviation, which covers private, business, and recreational flying. To maintain safety, efficiency, and environmental sustainability, civil aviation is regulated by both international and national aviation authorities. (ICAO, 2022.)

The key regulatory bodies overseeing civil aviation include the ICAO, a United Nations Agency (UNA) responsible for setting global aviation standards, the European Union Aviation Safety Agency (EASA), which regulates aviation safety in Europe, and the Federal Aviation Administration (FAA), which governs civil aviation in the United States (EASA, 2023; FAA, 2022). Additionally, each country has its own national civil aviation authority, such as Finland's Traficom (Traficom, 2023).

Commercial air transport consists of passenger airlines, including full service carriers such as Finnair, Lufthansa, KLM, SAS as well as Jetttime, along with cargo airlines such as FedEx, DHL, and UPS (ICAO, 2022). General aviation encompasses private flying, corporate jets, flight training, medical evacuation, and recreational flying (FAA, 2022). Airport operations play a crucial role in civil aviation, involving ground handling, air traffic control, security, and passenger services (EASA, 2023).

Ensuring safety in aviation requires rigorous training for pilots, cabin crew, air traffic controllers, and maintenance personnel, following strict competency-based standards, while airlines and regulatory authorities conduct assessments, inspections, and recurrent training to maintain safety levels (ICAO, 2022). Sustainability is also a key focus, with efforts to reduce carbon emissions through sustainable aviation fuel (SAF), the development of electric and hydrogen powered aircraft, and improvements in air traffic management to enhance fuel efficiency (ICAO, 2022; EASA, 2023).

In global employment, general aviation supports approximately 65.5 million jobs, positioning it as one of the largest sectors in terms of workforce size. Within civil aviation, there are directly 10.2 million jobs, with 3.5 million attributed to activities such as airport operations, air traffic control, and other services essential for commercial air travel. (ICAO, 2024.) The remaining jobs are associated with tourism, manufacturing, and infrastructure development within the aviation sector. (Gourdin 2015, 56). Civil aviation plays a significant economic role both directly and indirectly. It directly serves consumers by offering global travel, freight, and mail services. Additionally, it indi-

rectly supports businesses by facilitating the utilization of manufacturing, navigation services, carrier operations, and other essential resources that enable them to function efficiently. (Doganis, 2006, 54.)

The Chicago Convention on International Civil Aviation, first established in 1944, mandates that its signatory states collaborate to standardize and regulate airspace usage, ensuring the safety, efficiency, and consistency of air traffic. Each member countries has a designated civil aviation authority responsible for overseeing key aspects of civil aviation. These include personnel licensing, which governs basic training and the issuance of licenses and certificates; air operations, which ensure the safety of commercial flight operators; airworthiness, which involves issuing aircraft registration and airworthiness certificates while supervising aircraft maintenance organizations; aerodromes, which focus on the planning and construction of airports; and air traffic services, which manage air traffic within national airspace. (ICAO, 2024.)

## 2.1 Compliance with the regulations

Aviation is a highly regulated industry with strict standards and regulations to ensure safety, environmental protection and the smooth flow of air traffic. Many regulatory frameworks and standards in the aviation sector are based on international agreements and organisations such as the International Civil Aviation Organisation (ICAO) and the European Aviation Safety Agency (EASA). (ICAO, 2024; EASA, 2024.)

Regulations are primarily derived from the international standards and recommended practices outlined in the annexes to the Convention on International Civil Aviation, commonly known as the Chicago Convention (ICAO, 2024). Within Europe, the European Aviation Safety Agency (EASA) oversees and enforces aviation regulations with binding authority (EASA 2018). Airlines that are members of the International Air Transport Association (IATA) must adhere to the standards outlined in the IATA Operational Safety Audit (IOSA) standards manual. The IOSA program is a globally recognized evaluation system designed to assess an operator's operational management and control systems. All IATA members undergo regular audits and must remain compliant with the IOSA requirements to retain their membership. Specific regulations also exist concerning cabin crew training and qualifications. (IATA, 2024.)

Ensuring adherence to regulatory standards in cabin crew training is crucial for maintaining the safety and operational efficiency of airlines. While each airline is responsible for designing and

conducting its training programs, these programs must meet specific standards and regulations established by aviation authorities. (ICAO, 2024.) According to EASA's annex IV to regulation (EC) 216/2008, cabin crew members assigned or expected to operate on certain aircraft types must fulfill specific requirements and comply with established standards. The responsibility for assessing and ensuring the competency and effectiveness of cabin crew training primarily lies with the airline operators. (EASA, 2011.)

Regulations provide guidance on the conduct of training and assessment procedures, outlining the areas that should be covered in various training modules (EASA, 2011). Regular audits are conducted to verify that the training content is relevant, comprehensive, and aligned with the objectives of the training program. These audits play a crucial role in ensuring that the training and assessment processes are in accordance with regulatory requirements and industry best practices. (Jettime, n.d.)

The regulatory authority mandates that the tests and evaluation methods used should be suitable and directly related to the practical management and safe execution of cabin crew responsibilities. Skill assessments should closely emulate the actual work environment and target the specific competencies required for the job. (EASA, 2011.) It's crucial that the expertise areas, learning objectives, and assessment criteria for each task are clearly and precisely defined. These guidelines should be easily comprehensible for both the instructor and the student. Maintaining consistency and uniformity in assessments, regardless of the instructor, is vital for effective testing and evaluation. While the primary responsibility for oversight rests with the airline operator, the administration of examinations and practical exercises is monitored through training inspections. Additionally, corporate audits may sporadically review the outcomes achieved in various training programs. (Jettime, n.d.)

## 2.2 Cabin crew training

According to EASA's commission regulation (EU) No 1178/2011 aircrew, article 2, cabin crew (CC) is defined as a qualified crew member, distinct from the flight crew or mechanical/technical crew, designated by an operator to carry out safety related duties during flight. The term aircrew encompasses both cabin crew and flight crew roles. (EASA, 2011.) Cabin crew involved in aircraft operations must meet specific requirements outlined in annex IV and possess attestation as per annex III, established in regulation (EC) 1899/2006 of the European parliament, which amends

the previous regulation (ECC) 3922/91 according to each member state. Training entities and operators certified by EASA are authorized to provide this attestation. (EASA, 2008.)

EASA regulation 965/2012 ORO.FC.130 mandates that flight crew members undergo recurrent training annually, while a similar requirement is stipulated for cabin crew in ORO.CC.140. These regulations also detail the training content, covering areas such as crew resource management, emergency drills and procedures, door operations, evacuation protocols, etc. (EASA, 2012.)

Cabin crew training encompasses a comprehensive program designed to equip individuals with the necessary knowledge, skills, and competencies to fulfill their duties effectively and ensure passenger safety and comfort during flights (EASA, 2022; IATA, n.d.). This training typically covers a wide range of topics, including emergency procedures, evacuation protocols, first aid and medical emergencies, fire safety, aircraft equipment operation, crew resource management, security procedures, customer service techniques, cultural sensitivity, and aviation regulations and procedures (ICAO, 2020).

Training is conducted by airlines and consists of both theoretical classroom instruction and practical hands-on exercises, including simulated emergency scenarios (ICAO, 2020). Cabin crew members are required to undergo recurrent training at regular intervals to maintain their proficiency and stay updated on industry best practices, regulatory changes, and new technologies (EASA, 2022). Overall, cabin crew training plays a crucial role in preparing individuals for the dynamic and demanding environment of commercial aviation, ensuring that they are well prepared to handle any situation that may arise during flight and provide passengers with a safe and enjoyable travel experience (IATA, n.d.).

### 3 Training, competences and evaluation of cabin crew

Cabin crew training, competencies, and evaluations are critical to ensuring safety, security, and exceptional service in the airline industry. A well structured training program, a competency-based approach, and a continuous assessment framework contribute to maintaining high industry standards and regulatory compliance. Competency-based training and assessment (CBTA) align with the principles set by the International Civil Aviation Organization (ICAO), emphasizing the development of skills, knowledge, and attitudes essential for effective performance. (ICAO, 2023.)

Research indicates that CBTA enhances operational efficiency and safety by focusing on real world scenarios and performance-based evaluations (Salas, Wilson, Burke & Wightman, 2010). Effective training programs incorporate scenario-based learning, crew resource management (CRM), and psychological preparedness to ensure cabin crew can respond to emergencies and deliver high quality customer service (Fornette, Héloïse, Lefrançois, Fradin, El Massioui, Darses & Roumes, 2013, 171–179). Moreover, continuous assessment through recurrent training programs is essential for skill retention and regulatory compliance (Ford & Schmidt, 2000).

Adopting an evidence-based approach to competency assessment ensures that training remains dynamic and adaptable to industry developments. Digital learning tools, simulation-based training, and virtual reality applications have been increasingly integrated into cabin crew training programs, improving knowledge retention and engagement (Tse & Yu, 2021). By integrating CBTA with modern technological advancements and continuous evaluation, airlines can enhance both safety standards and passenger experience while meeting regulatory requirements set by organizations such as the European Union Aviation Safety Agency (EASA) and the International Civil Aviation Organization (ICAO) (EASA, 2023).

#### 3.1 Learning theories and their practical application in cabin crew training

Cabin crew training requires the development of both technical and interpersonal skills. Different learning theories provide a valuable framework for designing and implementing effective training strategies. In the following, I will review the four main learning theories, behavioural, cognitive, constructivist and socio-constructivist, and explain how they are applied in practice in cabin crew training, particularly in simulation-based training environments.

According to B.F Skinner's behavioural learning theory, learning is a change in observable behaviour, shaped by stimulation and reinforcement. The model of operant conditioning, behaviour followed by positive consequences is more likely to be repeated, while behaviour followed by negative consequences is less likely to be repeated. (Skinner, 1953, 59, 91, 297.) In cabin crew training, this theory is reflected in simulation exercises such as safety demonstrations, evacuation drills and first aid training. These repetitive tasks are designed to reinforce desired behaviour through immediate feedback, increasing the likelihood that correct responses will become automatic under pressure. Behavioural strategies are also central to the teaching of standard operating procedures (SOPs), where consistent repetition ensures that responses are internalised and implemented accurately in real emergency situations. (Erath, Aeschbacher, Würgler & Züger, 2022.)

Cognitive learning theory shifts the focus from external behaviours to internal mental processes such as memory, perception and problem solving. Jerome Bruner emphasized that learners actively construct knowledge and that effective teaching can support learners of all ages. (Bruner, 1960, 33, 55, 69). This theory is put into practice in cabin crew training through case studies and scenario-based simulations in which trainees are required to analyse complex situations involving regulations, emergency protocols and passenger interactions. Cognitive strategies also support debriefing sessions where learners reflect on their experiences to understand the reasoning behind their decisions, deepening understanding and supporting long term memory retention (Mayer, 2020, 397).

Constructivist learning theory is based on cognitive approaches and argues that learners actively construct knowledge based on their prior experiences and understanding. Jean Piaget emphasized the importance of exploration and contextual learning and argued that individuals learn best when they can interact with their environment. (Piaget, 1977, 132–136). In aviation education, constructivist methods are applied through experiential learning activities such as customer service role-plays and interactive simulations. These experiences allow trainees to relate new knowledge to prior learning and encourage them to problem solving and reflect on their performance. Such active engagement promotes adaptability and critical thinking, which are essential qualities for cabin crew working in dynamic environments. (Khalaf & Zin, 2018, 12–25.)

Socioconstructivist theory extends constructivism by emphasizing the social and cultural contexts of learning. Lev Vygotsky's concept of the zone of optimal development describes how learners can achieve more by interacting with others than independently. (Vygotsky, 1978, 79–91.) This can be seen in cabin crew training in collaborative exercises such as team based simulations

where crew members respond together to emergency situations. Social learning is also an integral part of crew resource management (CRM) training, which focuses on communication, leadership and teamwork. CRM, based on socio-constructivist principles, uses facilitated discussions and scenario analysis to develop interpersonal skills and improve team performance. (Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2012, 74–110.)

In summary, effective cabin crew training uses a variety of learning theories to address the diverse cognitive, behavioural and social needs of trainees. Behavioural approaches are particularly effective for procedural learning and practice, while cognitive and constructivist strategies support decision making and experiential engagement. Socio-constructivist methods promote collaboration and communication through interactive group work. An integrated pedagogical approach, combining elements from each theory, provides a solid foundation for competency-based training and ensures that cabin crew are well prepared to handle both routine tasks and high pressure situations in an aviation environment.

### 3.2 The influence of organizational culture, motivation and commitment on learning among cabin crew

Organizational culture, motivation, and commitment are key factors that shape the learning environment within airline companies, particularly among cabin crew. These elements play a crucial role in determining how effectively employees engage in training and continuous professional development. (Sacks, 2006, 600–619.)

Organizational culture provides the context in which learning takes place. A culture that values learning, open communication, and safety encourages cabin crew members to actively engage in training programs. Organizational culture consists of shared values, beliefs, and assumptions that guide behavior within the workplace. (Schein, 2010, 23, 143, 219.) In the airline industry, a strong safety culture, which emphasizes continuous learning and adherence to procedures, is essential for both performance and compliance. When the culture supports innovation and professional growth, employees are more likely to embrace learning as part of their work identity (Cameron & Quinn, 2011, 139–142).

Motivation is another critical determinant of learning. Internal motivation, such as the desire to improve one's skills or contribute to team performance, often leads to deeper engagement with

learning content. Self-determination theory by Deci and Ryan emphasizes that autonomy, competence, and relatedness are essential for fostering internal motivation. (Ryan & Deci, 2000, 63–81.) For cabin crew, feeling competent in emergency procedures, customer service, and teamwork contributes to a sense of professional pride, which can enhance learning outcomes. External motivation, such as promotions or recognition, can also support learning but may be less sustainable if not reinforced by intrinsic factors (Ryan & Deci, 2000, 122–132).

Commitment to the organization influences the extent to which cabin crew are willing to invest in learning and development. There are three types of organizational commitment: affective, continuance, and normative. Affective commitment, emotional attachment to the organization, has the strongest positive correlation with learning engagement. Cabin crew members who feel connected to their company's mission and values are more likely to take initiative in learning activities and support organizational goals. Conversely, low commitment may result in resistance to training, poor retention of knowledge, and limited application of skills. (Meyer, Stanley, Herscovitch & Topolnytsky, 2002, 20–52.)

In conclusion, the interplay of organizational culture, motivation, and commitment significantly affects learning among cabin crew. Airline companies that foster a learning oriented culture, support both intrinsic and extrinsic motivation, and build strong employee commitment are better positioned to enhance training outcomes and ensure high standards of safety and service. (Deci & Ryan, 2000, 262–263.)

### 3.3 Training of cabin crew

Cabin crew training is designed to ensure that airline staff are equipped with the necessary skills and knowledge to handle safety, security, and service related responsibilities effectively. Training is typically divided into three main categories: Initial training, recurrent training and specialised training. (ICAO, 2023.)

#### 3.3.1 Initial training

Initial training provides new cabin crew members with fundamental knowledge of aviation safety, emergency procedures, customer service, and regulatory requirements. It ensures that crew

members understand their roles and responsibilities in normal and emergency situations. (EASA, 2022.) Studies suggest that scenario-based training and simulation exercises enhance learning outcomes by improving decision making and crisis management skills (Salas et al., 2010).

Before the first flight, newly recruited cabin crew members complete an extensive training program. This program covers various critical areas, including safety and emergency procedures such as firefighting, evacuations, the use of emergency equipment, and water survival training. Additionally, they receive first aid and medical training, which includes CPR, managing medical emergencies, and using onboard medical equipment. Security training is also a key component, focusing on identifying and responding to security threats and dealing with unruly passengers. Furthermore, service training emphasizes customer service excellence, cultural awareness, and proper meal and beverage service procedures. Lastly, aircraft specific training ensures crew members are familiar with different aircraft types, exit locations, emergency systems, and cabin layouts. (Jettime, n.d.)

### 3.3.2 Recurrent training

Recurrent training forms a vital part of cabin crew training programs, ensuring that crew members consistently maintain their competencies and stay up to date with safety procedures, emergency protocols, and evolving regulatory standards. As outlined by the EASA, all cabin crew members are required to undergo recurrent training on an annual basis. This includes both theoretical instruction and hands-on practice in critical areas such as firefighting, emergency evacuation, first aid, and the use of safety equipment (EASA, 2020). The purpose of this ongoing education is not only to reinforce skills acquired during initial training, but also to prevent skill degradation, a common risk due to the routine nature of many in-flight duties (Salas et al., 2010). Furthermore, recurrent training provides an opportunity for operators to incorporate lessons learned from recent incidents or best practices across the industry, thereby fostering a proactive safety culture within the organization.

In addition to its regulatory role, recurrent training is closely tied to the principles of competency-based training and assessment (CBTA), which emphasizes the development and evaluation of specific behavioral competencies, decision making abilities, and performance under pressure. This approach reflects the guidelines of ICAO, which advocate for performance-based training frameworks designed to prepare crew for dynamic and complex real world situations (ICAO, 2014).

Regularly scheduled training sessions focus on key operational areas such as emergency procedures, medical response, security threat management, and crew resource management (CRM), all of which are critical for effective teamwork and crisis resolution (Fornette, Héloïse, Lefrançois, Fradin, El Massioui, Darses & Roumes, 2013, 171–179). Studies have shown that such continuous training and assessment significantly enhance skill retention and operational performance, particularly in high stress environments (Ford & Schmidt, 2000). Ultimately, recurrent training supports not only regulatory compliance but also the continuous professional development of cabin crew, contributing to the overall safety, efficiency, and resilience of airline operations.

### 3.3.3 Specialized training

Specialized training within cabin crew education encompasses additional instruction that goes beyond basic and recurrent training, focusing on the specific demands of certain aircraft types, operational environments, or service models. This type of training equips crew members with the knowledge and skills required to manage unique and often complex situations, for example, operating in polar or remote regions, handling flights with a large number of unaccompanied minors, or serving on VIP and charter flights. A key component of this is type specific training, which is mandatory when transitioning to a new aircraft model. As specified by EASA, this training addresses aircraft configuration, location and use of emergency equipment, and aircraft specific evacuation procedures. (EASA, 2020.) Such targeted preparation not only enhances safety and efficiency in operations but also ensures compliance with both national and international aviation regulations (CAA UK, 2021).

In addition to technical competencies, specialized training often includes modules in soft skills and situational awareness, such as assisting passengers with reduced mobility, managing disruptive passengers, and fostering cultural sensitivity. According to ICAO, this type of focused instruction significantly improves crew readiness and contributes to a safer, more inclusive travel experience. (ICAO, 2019.) As the global aviation industry becomes increasingly diverse and complex, airlines are placing greater emphasis on specialized training to uphold service quality and operational resilience. This aligns with modern competency-based training and assessment (CBTA) frameworks, which prioritize adaptability, critical thinking, and performance under pressure. (Salas et al., 2010, 392–412.)

Furthermore, specialized training may be designed for specific roles within the crew, such as leadership development for senior cabin crew or training in the handling of dangerous goods (Tse & Yu, 2021). The integration of advanced digital learning tools and virtual reality simulations has further enhanced the impact of such training, offering immersive and interactive environments where cabin crew can safely practice complex scenarios (Almeida & Duarte, 2020). As a result, specialized training not only strengthens individual performance but also contributes to the overall safety culture and service excellence within the aviation sector.

### 3.4 Competency-based training (CBT)

Kearns, Mavin & Hodge (2016, 9–20) described competency-based education as a teaching method in which training and assessment are systematically aligned with established competencies. These competencies serve as benchmarks and assumptions about an individual's abilities. Competences in this context refer to an individual's ability to participate effectively in complex social practices and to fulfil a professional role independently and competently. To be competent, an individual must possess the knowledge, skills and attitudes relevant to the job.

The concept of competence is not a recent development. It originated in the 1960 s within the realm of social sciences and was integrated into education and training. During the 1970 s and 1980 s, there was an increasing emphasis on defining the competencies required for specific roles, primarily at managerial levels. Competency training and assessment then evolved towards a more practical and job specific direction. Here, individuals' skills, knowledge, and attitudes were evaluated not merely based on the correctness of their answers but on their overall performance and ability to execute assigned tasks. (Boahin, Eggink & Hoffman, 2014, 839–858.) Competency-based training prioritizes outcomes over inputs. Its goal is to pinpoint individual performance and developmental gaps, assisting individuals in bridging these gaps through targeted learning and development. (Dubois & Rothwell, 2004.)

The ICAO cabin safety training manual was released in 2014 to offer direction on competency-based cabin crew safety training. To support this initiative, the ICAO cabin safety group was established to explore the integration of the competency-based approach into training and to ensure cabin crew are adequately trained to fulfill their roles and comprehend their responsibilities. The objective was to emphasize the training of competent cabin crew and to establish a global standard for cabin crew competencies. (ICAO, 2014, 27–43.)

Aviation training programs have traditionally been designed to comply with qualifications and standards set by regulatory requirements. However, a significant trend in the industry is moving away from traditional training towards a more competency-based approach. This new approach not only teaches specific topics but also evaluates and enhances individuals' competencies using diverse methods. (Kearns et al., 2016, 3–14.) In the past, airlines and regulators often increased training hours in areas deemed lacking or risky in terms of knowledge and skills. Now, there's a growing preference for competency-based training, which emphasizes both the development and assessment of knowledge and skills. This approach offers organizations the advantage of not necessarily having to extend training hours, leading to cost savings. (Rothwell & Graber, 2010, 14–27.)

CBT can be used in aviation as a tool to increase the employee's knowledge, skills, and attitudes that correlate with performance on the job and consequently improve employee service performance, passenger satisfaction and ultimately the organization's performance (Wu, 2013). Airlines that have adopted competency-based training have observed sustained motivation levels throughout the training. While this method is gaining traction in cabin crew safety training, there remain several challenges in its efficient implementation due to its complexity. Regulators also need to play an active role in its development and be receptive to innovative training and assessment methods. (Kearns, 2017, 5–9.) Airlines must demonstrate that their revised training approach still imparts a high level of knowledge and skills, possibly with fewer traditional classroom hours, which are now regulated. However, the industry is evolving towards favoring competency-based training, as it is perceived to enhance transparency and accountability among stakeholders. (Rothwell & Graber, 2010, 14–50.) The most important principle for competitiveness in civil aviation is delivering high quality service along with safety and security to passengers (Appelbaum & Fewster, 2004).

### 3.5 CRM in cabin crew training

Crew resource management (CRM) is a training system that focuses on improving communication, teamwork, and decision making within a team, especially in high stakes environments like aviation. The primary goal of CRM is to enhance safety and operational efficiency by optimizing the use of all available resources, including human, material, and information resources. (SkyBrary, 2024.)

An important catalyst for emphasizing human factors in aviation safety training was the 1977 accident at Tenerife Los Rodeos airport. Following this incident, increased research was directed towards understanding and preventing such avoidable accidents. Over the years, crew resource management (CRM) has been developed and integrated into cabin crew training programs. The goal of CRM is to foster improved teamwork, enhance situational awareness, bolster communication, sharpen decision making skills, and cultivate a positive attitude towards safety and safety protocols among crew members. (Flin, O'Connor & Mearns, 2002, 68–69.) CRM focuses on the reduction of human errors through training and behavioral change (Alavosious et al., 2017, 162).

All cabin crew members are required to complete CRM training at various stages of their careers, including initial, recurrent training and on appointment of promotion. Training must be carried out by approved instructors and must follow approved syllabus, which must be detailed in the company's flight operational manual. (EASA, 2018; Jettime, n.d.) Cabin crew training programs must align with regulatory frameworks set by organizations such as the International Civil Aviation Organization (ICAO) and the European Union Aviation Safety Agency (EASA) to ensure safety, security, and service excellence. By integrating evidence-based training methods and leveraging modern technology, airlines can optimize their training programs and enhance overall operational efficiency. (EASA, 2022; ICAO 2023.)

### 3.6 Competences, evaluation and assessment of cabin crew

Competency-based training and assessment (CBTA) is a framework established by the International Civil Aviation Organization (ICAO) to enhance aviation training by focusing on measurable competencies rather than traditional time based methods (ICAO, 2022). In the context of cabin crew training, CBTA aims to ensure that personnel develop the necessary skills, knowledge, and attitudes to handle normal and emergency situations effectively (ICAO, 2023). This approach aligns with safety management principles, allowing training programs to be tailored based on risk assessments and operational needs rather than rigid curricula (EASA, 2023). The CBTA methodology includes defining core competencies, developing training scenarios that simulate real world challenges, and using performance-based assessments to evaluate trainees (FAA, 2022). By implementing CBTA, airlines can improve training efficiency and enhance safety outcomes while ensuring that cabin crew meet international competency standards (ICAO, 2022). The integration of CBTA in civil aviation training is supported by various regulatory bodies, including EASA and the

FAA, which encourage competency driven learning approaches to enhance operational safety and efficiency (EASA, 2023; FAA, 2022).

When designing competency-based training, it is advisable to tailor it to best meet the needs of the participants. It is crucial to identify the gaps between the knowledge, skills and attitudes that are the subject of the training. Training should therefore not be identical for newcomers and experienced workers, as competency-based training also aims at continuous improvement and development. (Rothwell & Graber, 2010, 51–67.) It is also important to assess the extent to which training can address performance gaps. This means that the design phase of training should determine what learners should understand, know and be able to do at the end of the training. The competences that participants are expected to demonstrate should be expressed in terms of competences, outlining the desired level of performance and the expectations of participants. (Kearns et al., 2016, 127–139.)

Authorities and airlines will provide proposed performance standards to ensure that performance requirements are met. They will also provide guidance on the knowledge and skills that trainees should possess to support these competency requirements. (ICAO, 2014, 34–39.) It is essential to consider the circumstances in which learners will be required to demonstrate the competencies they have acquired. Manuals contains recommendations for training environments, covering a range of training methods such as classroom teaching, computer-based learning or practical exercises. (Kearns, 2017, 5–9.) Training materials should be provided to support the objectives of the training and to guide participants in understanding what is expected of them during the training. This may include relevant reference materials such as manuals, company policies and other relevant resources that provide information on the topics covered in the training. (Rothwell & Graber, 2010, 54–67.)

It is also important to define how the desired learning outcomes and competences will be assessed both during and at the end of the training. Whether it is a question of ensuring that new recruits have the basic skills or of verifying the competence development of existing staff, a plan must be drawn up for how knowledge, skills and attitudes will be assessed and what assessment methods will be used. (ICAO, 2014, 39–44.) Assessment should improve learning, not create a barrier or put labels on trainees. Therefore, the training provider should try to reach optimal levels of alignment with the training course. (Hailikari, Virtanen, Vesalainen & Postareff, 2022, 15–17.)

Assessment should be consistent and, where criterion referenced assessment is used, learners should provide evidence that they are able to carry out tasks or have the necessary knowledge. Performance criteria should normally describe tasks in behavioural terms, allowing assessors to compare actual performance with the behaviours set out in the performance standards or criteria. (Rothwell & Graber, 2010, 51–67.) One method of assessing competence involves the application of knowledge and skills in practical demonstrations where performance evidence is collected through observation. Other methods of collecting evidence of knowledge and understanding may include tests, work related tasks and case studies. (Kearns et al., 2016, 140–148.)

### 3.6.1 Cabin crew competences

A competency-based training approach ensures that cabin crew members not only acquire knowledge but also demonstrate the required skills (ICAO, 2023). Among the key competencies, safety and security play a crucial role. Cabin crew members must be capable of handling emergency evacuations, administering first aid, responding to medical emergencies, and identifying and mitigating security threats. Proper use of emergency equipment such as oxygen masks, fire extinguishers, and life vests is essential (EASA, 2022). Research suggests that scenario-based training and simulation exercises significantly improve preparedness for emergency situations. Additionally, CRM training enhances situational awareness, risk assessment, and decision-making under pressure. (Salas et al., 2010.)

Customer service competencies are equally vital in ensuring a high quality passenger experience. Providing excellent in-flight service, ensuring passenger comfort, handling special requests and complaints professionally, and demonstrating cultural awareness and emotional intelligence are essential aspects of cabin crew training. (Wong & Chung, 2022.) Studies highlight that service-oriented behavior and emotional intelligence positively impact passenger satisfaction and airline reputation (Gabbott & Hogg, 2001). Training programs increasingly incorporate psychological and interpersonal skill development to enhance crew performance in customer interactions (Tse & Yu, 2021).

Effective communication and teamwork are fundamental to ensuring smooth flight operations. Cabin crew must communicate clearly with passengers and fellow crew members, maintain composure and professionalism under pressure, and collaborate seamlessly with pilots and other team members (Ford & Schmidt, 2000). CRM training plays a crucial role in enhancing teamwork,

reducing communication errors, and fostering a cooperative working environment (Kanki, Helmreich & Anca, 2019). Research indicates that strong teamwork and leadership skills are associated with improved safety outcomes and operational efficiency (Salas et al., 2010).

Decision making and problem solving skills enable cabin crew to respond effectively to unexpected situations such as medical emergencies, technical failures, or security incidents while applying company policies and aviation regulations in their decision making. Decision making under pressure is a critical skill that can be strengthened through scenario-based training, simulation exercises, and real time problem solving assessments (Flin, O'Connor & Crichton, 2008, 65–68). Evidence suggests that structured decision making frameworks improve response times and the effectiveness of crisis management strategies (Taneja, Fuchs & Taneja, 2014).

### 3.6.2 Evaluation and assessment of cabin crew

To ensure the effectiveness of training and competency development, cabin crew members are regularly assessed using various evaluation methods. Theoretical assessments include written exams on safety, security, first aid, and company policies, as well as aircraft specific knowledge tests (EASA, 2022). Research suggests that written assessments play a key role in reinforcing regulatory compliance and ensuring that crew members retain essential theoretical knowledge (Flin et al., 2008, 262–265).

Practical assessments involve emergency drills such as firefighting, evacuations, and water landings, along with first aid scenario simulations and customer service role play exercises (Salas et al., 2010). Studies highlight that hands-on training and simulation exercises significantly improve the crew's ability to respond effectively to emergencies by enhancing situational awareness and decision-making under pressure (Prayitno, Ekohariadi, Cholik, Suprianto & Qiram, 2023). Training simulations based on real world aviation incidents have been shown to enhance retention and improve crew response times in critical situations (Taneja, Fuchs & Taneja, 2014).

On the job evaluations consist of line checks, where supervisors or instructors observe performance during actual flights, ensuring that crew members apply their training in a real operational environment (Kanki, Helmreich & Anca, 2019). Passenger feedback analysis through surveys and mystery passenger reports provides valuable insights into service quality and customer satisfaction, supporting continuous improvement in service delivery (Wong & Chung, 2022). Self and peer

assessments further encourage reflection and professional development by allowing crew members to identify areas for improvement and refine their skills (Ford & Schmidt, 2000).

Competency-Based Assessment (CBA) focuses on performance evaluations based on real life scenarios rather than memorization, assessing crew members' ability to apply their skills in operational settings and ensuring they meet regulatory and airline specific standards (ICAO, 2023). Research suggests that CBA enhances learning outcomes by prioritizing practical application over rote learning, fostering a more adaptive and competent workforce (Tse & Yu, 2021). By integrating multiple assessment methods and aligning them with industry best practices, airlines can maintain high training standards and ensure that cabin crew members remain proficient and prepared for the dynamic demands of their roles (Almeida & Duarte, 2020).

### 3.7 Competency-based training and assessment of cabin crew at Jetttime: a comparison with general aviation industry practises

Competency-based training and assessment (CBTA) has emerged as a global standard in aviation, emphasizing the development and demonstration of job specific competencies rather than simply completing hours of instruction. Jetttime, a Danish charter airline, implements CBTA in its cabin crew training programs to ensure that crew members meet both regulatory requirements and internal performance standards.

Jetttime's training framework aligns with the EASA regulations, particularly EASA Part-CC, which outlines the minimum training and assessment standards for cabin crew. These standards emphasize practical skills, decision making, communication, and teamwork. (EASA, 2022.) Jetttime incorporates scenario-based training modules, including realistic emergency simulations, to help crew develop these core competencies.

In practice, Jetttime follows a blended training model, combining classroom instruction with hands-on exercises and recurrent training cycles. Assessment methods include direct observation, role-playing, and structured feedback sessions. Trainees must demonstrate proficiency in safety procedures, customer service, and crisis management to pass evaluations. These methods align with ICAO's guidelines on CBTA, which advocate for performance-based assessments that focus on real world tasks. (ICAO, 2019, 17, 23–29.)

Compared to general industry practices, Jetttime's approach is largely consistent with international standards. Major airlines such as Lufthansa and KLM also employ CBTA frameworks, emphasizing behavioral markers such as leadership, situational awareness, and workload management (Salas et al., 2010, 392–412). However, larger carriers may have access to more advanced simulation technologies and broader data analytics for performance tracking, while regional carriers like Jetttime tend to rely more on instructor led evaluations.

One notable feature of Jetttime's system is its emphasis on feedback and self assessment, which encourages a culture of reflective practice (Jetttime, n.d.). This mirrors best practices recommended by the IATA, which stress the importance of formative assessment and continuous improvement (IATA, 2020, 71–76).

In conclusion, Jetttime's competency-based training and assessment approach is in line with general aviation industry standards, though it may differ in scale and technological resources. Its strong focus on practical competencies, structured evaluations, and feedback driven learning supports the development of highly capable cabin crew professionals.

### 3.8 Integrating service design principles into cabin crew training development, customer experience, and service quality

Cabin crew play a key role in shaping the airline's service experience, as they are the primary contact point between the airline and its customers. Integrating service design principles into cabin crew training can significantly improve both the customer experience and overall service quality.

Service design emphasizes a comprehensive, customer centric approach to creating and improving services. Key principles such as empathy, co-development, iteration, and a comprehensive perspective are highly applicable to the development of cabin crew training programs. (Stickdorn, Hormess, Lawrence & Schneider, 2018.) By incorporating empathy into training, airlines can better prepare crew members to understand and anticipate passenger needs, improving their emotional intelligence and responsiveness during flights. Training that focuses on real life situations and passenger perspectives ensures that service delivery is not only efficient but also emotionally resonant. (Kimbell, 2011, 1–13.)

Co-development, another key principle of service design, involves actively engaging different stakeholders, such as cabin crew members, in the design and continuous improvement of training programs. Involving crew members in identifying problems and opportunities in service delivery increases their sense of ownership and ensures that training content remains relevant and based on real service challenges. (Meroni & Sangiorgi, 2011, 50–56.) This approach strengthens the connection between employees and the organization's values and ensures that training is not merely theoretical, but based on practical, everyday customer service situations.

Furthermore, the iterative nature of service design supports the continuous improvement of training programs. By regularly collecting feedback from both passengers and employees, training programs can be developed to respond to new trends, safety considerations, and customer expectations. This adaptability is crucial in the rapidly changing aviation industry, where passenger demographics, expectations, and technologies are constantly evolving. (Ostrom, Parasuraman, Bowen, Patrício & Voss, 2015, 127–159.) Continuous feedback cycles help improve the training process and ensure that it remains aligned with both internal objectives and external customer needs.

The service design approach also ensures that training takes into account the entire customer experience, rather than just individual service touchpoints. Cabin crew must receive training not only on in-flight procedures but also on pre-flight and post-flight interactions so that they understand their contribution to the overall travel experience. A comprehensive view of service delivery promotes seamless and consistent customer experiences that are strongly linked to service quality and brand loyalty. (Lemon & Verhoef, 2016, 69–96.) This approach helps cabin crew see their role within the broader context of the airline's service ecosystem, which enhances their ability to deliver a consistent and cohesive experience for passengers. Including service design in training development directly improves service quality, as it aligns employees' skills with customer expectations and service standards. Employees who are trained to think from a service designer's perspective are better prepared to provide personalized, empathetic, and memorable service, which strengthens the airline's competitive advantage. (Grönroos, 2007, 71, 209, 329, 453.)

In summary, applying service design principles to the development of cabin crew training promotes more personalized, adaptable, and high quality service. It narrows the gap between employee training and actual customer expectations, ultimately leading to a better customer experience and continuous improvement in service quality.

## 4 Research strategy and development methods

The study of this thesis adopts an action research approach to explore and develop competency-based training and assessment methods for cabin crew. Action research is a suitable methodology for this study as it focuses on solving practical problems through iterative cycles of planning, acting, observing, and reflecting (Reason & Bradbury, 2008, 1–10). It allows for active collaboration between researchers and practitioners, making it particularly valuable in an applied setting such as aviation training.

To develop effective competency-based training, this study employs a combination of development methods, including survey, observation, and co-development sessions. Surveys are used to gather insights from cabin crew members regarding their training experiences, challenges, and perceptions of competency-based learning (Creswell, 2014, 157–160). Observation allows for an in-depth understanding of how training is conducted and how cabin crew members apply their knowledge and skills in real life scenarios (Patton, 2015, 217–220). Co-development, which involves collaboration between instructors, industry professionals, and trainees, ensures that training methods are refined based on real world needs and feedback (Engeström, 2016, 25–30). This participatory approach aligns with action research principles, facilitating meaningful and sustainable improvements in training practices.

By employing these research methods, the study aims to generate practical recommendations for enhancing competency-based training and assessment, ultimately contributing to improved aviation safety and operational efficiency.

### 4.1 Action research

Action research is a cyclical process of identifying, analysing and defining a problem in order to find different solutions. Each cycle of action research involves planning, implementation, observation and reflection. The next cycle picks up where the previous cycle left off. (Kananen, 2014, 12, 34–36.) Action research focuses on the study of theories, the systematic collection of experiences, their analysis and reporting (Heikkinen, Rovio & Syrjälä, 2008, 78–79). Simply identifying the problem is not enough, it is also important to understand the underlying causes. Once the causes have been identified, efforts can be made to address them. Once the problem has been identified, an action plan is drawn up to solve the problem. Once the plan is in place, the situation is monitored,

the effectiveness of the plan is assessed and changes are made if necessary. It is important to define the evaluation criteria for the study in order to assess the success in solving the problem. Based on the results of the evaluation, a new plan will be developed, which will be monitored, evaluated and modified as necessary until the problem has been solved and the results are satisfactory. (Kananen 2014, 36.)

Action research is characterized by its practice-based approach, which relies on critical reflection of current practices (Koshy, 2005, 12–13). Action research is also reflective in nature, and reflection allows us to look at things in a new way, which promotes learning and understanding (Suojanen, 2014). The aim of action research is to promote change in the work community. To achieve change, active interaction between the researcher and the subjects is needed. (Kuula, 2001, 204–208.)

Action research is a qualitative research approach that seeks to gain an in-depth understanding of the phenomenon under study without the use of numbers and statistics. Qualitative research focuses on words and phrases and does not rely on a precise quantitative framework. It is cyclical, alternating between data collection and analysis. Qualitative research focuses on understanding the subject under study, its processes, and meanings, and focuses on a single case, while quantitative research looks at multiple cases. In qualitative research, the research questions are open-ended, and the answers are presented in textual form. (Kananen, 2014, 21–22, 24.) In action research, data collection methods are chosen based on the problem to be studied. These methods are the same as in qualitative research and include observation, interviews, written sources, and questionnaires. Observation can take different forms, such as covert observation, direct observation, participant observation and participatory observation. One of the observation tools is the research diary, which records the progress of the research and schedules the different phases of the activity. It is advisable to record the various comments and observations. (Kananen, 2014, 14, 78.)

Action research can be presented in diagrammatic form in various ways. One simple way to illustrate action research is by focusing on the actions included in each stage of the process. Such a diagram provides a simplified representation of the research process, but its emphasis on action makes it illustrative. (McNiff & Whitehead, 2011, 7–14.) The action research process can be divided into several stages. First, a problem or area for development is identified. Next, potential interventions are considered, followed by the planning of the chosen intervention. Once the plan is in place, the intervention is implemented. The implementation is then observed, and its effects are evaluated. After the evaluation, the results are reflected upon. Finally, the outcomes of the

intervention are shared. (Stringer, 2014, 40, 73–75, 101, 135, 166.) These stages can be examined cyclically, allowing for continuous development through ongoing evaluation and reflective learning. This approach supports a participatory and practical research orientation, in which the dialogue between practical action and theoretical reflection is emphasized. (Coghlan & Brydon-Miller, 2014, 15–18.) See Figure 1. below.



Figure 1. The cyclical process of action research based on the theories of Coghlan & Byron-Miller, McNiff & Whitehead and Stringer (Coghlan & Byron-Miller, 2014; McNiff & Whitehead, 2011; Stringer, 2014).

Action research differs from traditional research in that the researcher is actively involved in the activity and it is hoped that he or she has a deep understanding of the subject being studied. Unlike traditional research, in action research the researcher actively influences the action and seeks to promote change. (Heikkinen et al., 2008, 19–20.) Action research continues from where qualitative research ends and requires qualitative research to gain a deeper understanding of the phenomenon being studied. If the phenomenon and its effects are not understood, problems cannot be solved. Qualitative research does not address the phenomenon under study, while ac-

tion research aims to solve problems and bring about change. (Kananen 2014, 16, 27–28.) Although qualitative research is a common approach in action research, quantitative data collection methods can also be used in action research (Heikkinen et al., 2008, 37).

#### 4.1.1 Defining the research problem and designing the research plan

Action research typically begins by identifying the problem and analyzing the current situation. Once the key problem is identified, it is transformed into a research question. Without a clearly defined problem, a research question cannot be created. In action research, the research question should also reflect action. However, it is characteristic of action research that the research question is refined throughout the process, as data is collected and analyzed. A well formulated research question must be one that can be answered. Research questions that are either too general or too limited cannot be answered definitively and should not be framed in a way that only allows for a simple yes or no answer. (Kananen, 2014, 38, 44–46.) It is also valuable for the researcher to reflect on their own preconceptions about the topic. Acknowledging one's preconceptions helps to approach the research in an objective manner (Heikkinen et al., 2008, 97).

After defining the problem and the research question, the next step involves developing a research plan. This plan will guide the research process and answer key questions, including where and how data will be collected, what data sources will be used, and how the data will be analyzed. (Kananen, 2014, 47.) Designing action research can be challenging because the research process is dynamic, and the researcher's understanding of the topic and methods will evolve over time. Often, what initially seems like a minor detail can turn out to be crucial to the research. (Heikkinen et al., 2008, 86–87.)

The first cycle of this research began with the design phase, which was primarily planned for spring 2024. This cycle aimed to establish an initial understanding of existing knowledge related to competency-based training and assessment for cabin crew. On this basis, the research design and research question were developed. This involved exploring theoretical knowledge on competency-based training and assessment to determine whether the development of training and assessment impacted the professional development of cabin crew competencies. This understanding helped further define the research problem.

During the operational phase, theoretical information was gathered from various literary sources, dissertations, and studies to better understand what was already known about the topic. This

information helped refine the research problem and research questions. The starting premise was that the development of cabin crew training and assessment could contribute to the professionalism and competence of cabin crew members.

The information collected highlighted how competency-based training (CBT) can be used in aviation as a tool to improve employees' knowledge, skills, and attitudes. These improvements ultimately correlate with on the job performance and enhance employee service, passenger satisfaction, and organizational performance (Wu, 2013). By developing competency-based training and assessment for cabin crew, airlines can promote safety, standardization, personalized learning, accountability, regulatory compliance, and adaptability, all contributing to the success and reputation of the airline industry (EASA, 2023).

The reflection phase of the first cycle concluded that developing competency-based training and assessment for cabin crew can positively impact their competence and professionalism. In the next cycle, these theories has been explored further to identify ways to improve the training and assessment processes with the research question: How can the current competency-based training and assessment of cabin crew be improved to account for the specificities of the aviation industry, safety requirements, and regulations, and how can the professional competence of cabin crew be promoted?

#### 4.1.2 Theoretical knowledge acquisition

The second cycle of this research focused on a more in-depth review of research evidence related to competency-based training and assessment of cabin crew. The objective was to identify ways to improve existing training and assessment by considering the specific requirements of the aviation industry, including safety regulations. Additionally, the study examined training and assessment methods that could be used to enhance the learning and competence of cabin crew.

Theoretical information was gathered from relevant literature, publications, and online sources. Emphasis was placed on reliable research data, particularly peer reviewed publications and studies by experts in the field. Sources with uncertain credibility were avoided. In the theoretical section, proper citation of sources and identification of original references were ensured. Information was retrieved through various database searches. Searches were conducted using keywords such as competency-based training, training assessment, aviation, and cabin crew, as well as different combinations of these terms. Dissertations, theses, scientific journal articles, and

aviation related laws, regulations, and guidelines formed the primary sources of information. Data collection aimed to provide a comprehensive overview of competency-based training and assessment. Subsequently, the focus was narrowed to key aspects that contributed to flight safety, customer service quality, and the professional competence of cabin crew.

Comprehensive and systematic safety training enhances the ability of cabin crew to manage various safety situations and emergencies. Competency-based assessment, in turn, helps identify and address gaps and areas requiring improvement in safety training. High quality customer service training and continuous evaluation are essential for passenger satisfaction and the airline's reputation. Improving customer service training enables cabin crew to better meet passenger needs and expectations. (Appelbaum & Fewster, 2004.) Furthermore, communication skills play a crucial role in cabin crew collaboration, customer service interactions, and emergency management. Competency-based training and assessment support the development of effective communication and teamwork skills. (Kanki, Helmreich & Anca, 2010.) Continuous learning and professional development are also key factors in maintaining and enhancing cabin crew competencies. Competency-based training and assessment encourage ongoing learning and career development among cabin crew members. (SkyBrary, 2024.)

As airline operations and passenger expectations evolve, cabin crew training must also adapt to new challenges, including technological advancements and changing safety protocols (EASA, 2021). Implementing competency-based training and assessment requires a structured approach, integrating feedback mechanisms to continuously improve training content and effectiveness. While competency-based training provides a structured framework for skill development, its successful implementation depends on the commitment of both training institutions and airlines. Collaboration between regulators, training providers, and industry professionals is essential to enhance training quality and ensure its relevance to real world cabin crew responsibilities (ICAO, 2018).

#### 4.1.3 Survey and observation as data collection methods

The third cycle of this research consisted of designing the survey and observations. Survey and observation design were essential parts of the research process, contributing to the quality, validity, reliability, ethics, and efficiency of the research, as well as facilitating the analysis, interpretation, and reporting of results. Observations were made during the spring and summer of 2024

and the winter of 2025, when the author participated in the recurrent training of cabin crew as both a participant and an observer. The design of the survey was carried out during winter 2025.

Surveys are one of the most commonly used data collection methods. In a survey, the questions are standardised, so all respondents are asked the same questions in the same order and in the same way. (Ojasalo et al. 2009, 121.) A questionnaire makes it possible to collect extensive research data, because a large number of people can be asked many different questions at the same time (Vilkka, 2007, 28).

Survey research focuses mainly on quantitative research, using statistical methods. However, survey research has its own limitations, as it is challenging to assess how seriously respondents take the research or how well the response options reflect their views. (Ojasalo et al., 2009, 121.) It is generally believed that quantitative methods produce superficial but reliable data, while qualitative methods provide in-depth but less generalisable information. However it is noted that statistical methods can also be used to get at the details. It is essential to know how to choose appropriate approaches to study the phenomenon you are interested in. (Vehkalahti, 2019, 11–13.) In quantitative research, it is essential to know exactly what is being studied so that measurements are carried out correctly. Prior to the quantitative measurement process, concepts must be defined so that they are measurable. It is important that respondents understand the questions and concepts in the same way so that the survey results are reliable and can be generalised. (Vilkka, 2007, 36–37.)

In a survey, the researcher asks the respondent questions using a questionnaire. The questionnaire serves as a measure and is used in a variety of contexts, such as social and behavioural science research, opinion polls, street interviews, aptitude tests and feedback surveys. (Vehkalahti, 2019, 11.) Electronic surveys have recently become very popular due to their speed, efficiency and cost effectiveness. Many different applications are available on the Internet to create questionnaires, collect responses and present the results. However, the main challenge of e-surveys is the high number of surveys, which has led to response fatigue and thus lower response rates for surveys. (Ojasalo et al., 2009, 128–129.)

Observation offers a way of finding out whether people are actually doing what they say they are doing. It has the advantage of providing a direct and immediate insight into the activities and behaviour of individuals, groups and organisations in their natural environment. It is well suited to qualitative research. (Hirsjärvi, Remes & Sajavaara, 2004, 201–203.) Observation is a qualita-

tive research method that is suitable for exploring topics that need to be better understood. Observation is a key part of action research, as it allows the researcher to participate and observe the different stages of the activity being studied. In action research, observation helps to understand how the practice is carried out and how it can be improved or developed. Observation allows the researcher to observe and document various operational processes, interaction situations and decision making processes. This gives the researcher in-depth knowledge of how different factors and variables affect the phenomenon or problem under study. (Ojasalo et al., 2009, 105, 114.)

Planning and scheduling are essential before conducting observations as part of the research process. The researcher must decide beforehand whether they will be a participant or a non-participant observer. (Ojasalo et al., 2009, 114–116.) Observation can be active or passive. In active observation, the researcher is actively involved in the activities of the research subject, for example by participating in projects or development work. In passive observation, the researcher observes the situation without influencing it. In both cases, however, it is important for the researcher to understand his or her own role and its potential impact on the research situation. (Kawulich, 2005) Observation is subjective and based on the researcher's preconceptions, experiences, mood and state of activation. However, observations must be meaningful if the data are to be manageable and analysable. The objectives and precision of the observation must be defined in advance, whether participant or non-participant observation is used. The observation technique can be either systematic and standardised or non-systematic. In systematic observation, the researcher prepares and structures the problem before the observation, while in non-systematic observation, the researcher uses the theory of the research problem and makes preconceived assumptions about the phenomenon. (Marques, Carim, Campbell & Lohmann, 2024, 89–97.)

When the group being observed consists of colleagues, it's important to discuss what will be observed, how the observations will be conducted, and how the findings will be used. This can help build trust between the researcher and the participants. (Ojasalo et al., 2009, 114–116.) Observations can be documented, filmed, or recorded, but ethical considerations and honesty must be maintained. Whether documented or not, observations should be validated when used as data in the research. (Suojanen, 2014.)

The goal of observations is to gain insight into the interactions, conversations, and behaviors occurring within the observed setting. Observations can yield valuable data to answer practical research questions. (Ojasalo et al., 2009, 114.) Observation at different stages of the development

process is essential for data collection, final reflection, and analysis of the results. Recording observations in writing improves the credibility of the research. (Stringer, 2014, 115–116.) In action research, a common way of documenting observations is through a research diary. This diary records the different stages of the development work, observations, the researcher's reactions, and reflections (Kemmis, McTaggart & Nixon, 2014, 105–107). A research diary is a tool for the researcher to help structure, analyze, and understand the phenomenon under study in greater depth. The research diary allows immediate and detailed documentation of observations during the research. The diary also provides a space for the researcher's own thoughts, feelings, and reflections, which helps to reflect and analyze the findings in depth. (McNiff, 2016, 87–92.) The diary helps to monitor the progress of the research process, identify potential challenges and changes, and maintain compliance with the research design and objectives. The research diary encourages critical thinking and, through informed reflection, a deeper understanding of the phenomenon under study. (Bryman, 2012, 557–562.) It also helps to increase the transparency and reliability of the research by providing a visible and understandable picture of the research process and decisions. (Hirsjärvi et al., 2004, 52–53.) A research diary should be kept regularly and systematically. Observations, ideas and reflections should be recorded as soon as possible after they are made in order to keep them fresh and honest. The information recorded in the diary should be organised in a clear and structured way so that it is easy to use and analyse at different stages of the research. (Suojanen, 2014.)

Reflection is essential throughout the development process and is essential at every stage of the research. The research diary helps to accumulate material for analysis (Kananen, 2014, 150). Reflection brings together the different stages of the development work in the reflection section. Reflection is key in action research, and it promotes the development of activities, change and taking things forward. (Suojanen, 2014.)

#### 4.2 Co-development as a development method

Co-development is an interactive and participatory development method often utilized in action research. It emphasizes collaboration between different stakeholders, enabling shared knowledge creation and practical problem solving (Reason & Bradbury, 2008). In action research, co-development fosters an iterative process where participants actively engage in defining challenges, generating solutions, and implementing improvements in real world settings (Kemmis & McTaggart, 2005).

One of the key strengths of co-development is its ability to integrate multiple perspectives. Stakeholders, such as employees, managers, and external experts, contribute their experiences and expertise to the research process. This participatory approach not only enhances the relevance of the research but also increases stakeholder commitment to the outcomes. Furthermore, co-development encourages reflective practice, where participants continuously evaluate and refine their actions based on feedback and emerging insights. (Chevalier & Buckles, 2019.) In the context of competency-based training and assessment of cabin crew, co-development allows industry professionals, instructors, and regulatory bodies to collaborate on improving training programs. By engaging in co-development, the research process ensures that training and assessment methods align with industry needs, regulatory requirements, and best practices in aviation (IATA, 2024.)

Co-development also enhances the validity and reliability of action research. The active participation of stakeholders ensures that the research findings are not only theoretically sound but also practically applicable. (Brydon-Miller, Greenwood, & Maguire, 2003.) Moreover, involving multiple actors in the development process helps identify challenges early, allowing for timely adjustments and improvements. Co-development is a valuable method in action research as it promotes collaboration, shared knowledge creation, and iterative problem solving. It is particularly useful in applied research contexts, such as competency-based training and assessment in the aviation industry, where stakeholder involvement is crucial for meaningful and effective development.

In this thesis, co-development has been utilized by engaging stakeholders and using survey and observation as co-development methods. The survey was used to gather information on the effectiveness of the training and areas for development. It was targeted at cabin crew members, instructors who also act as training designers. Experienced and newly hired employees provide valuable practical insights into the strengths and areas for improvement in the training (Sanders & Stappers, 2008). Instructors, on the other hand, are responsible for the pedagogical quality of the training and can use the feedback to develop new training methods. Through co-development, cabin crew training and assessment can be designed to be truly responsive to needs and flexible, ultimately supporting both employee development and the airline's success. (Pralhad & Ramaswamy, 2004.)

#### 4.3 Integrating survey, observation, and co-development in the participatory development of competency-based training and assessment for cabin crew

In the development of competency-based training and assessment for cabin crew, the use of mixed research methods, specifically survey, observation, and co-development, offers a comprehensive and complementary approach that enhances both the validity and applicability of the research outcomes.

Survey serve as an effective tool for collecting quantitative and qualitative data from a broad sample of cabin crew members and instructors. This method helps to identify current competencies, perceived gaps in training, and stakeholder expectations across the organization. Surveys provide a structured overview of existing practices and perceptions, which is critical in establishing a baseline for development. (Creswell & Creswell, 2018, 118–126.)

Observation, on the other hand, allows for a more contextual and nuanced understanding of cabin crew performance in real life operational settings. Through direct observation, it becomes possible to assess how competencies are demonstrated during actual in-flight service, safety procedures, and interactions with passengers. This method uncovers discrepancies between documented training standards and actual behavior, revealing tacit knowledge and informal practices that may not surface through self reported data. (Angrosino, 2007, 53–67.)

Co-development complements both survey and observation methods by involving stakeholders such as instructors and cabin crew in the collaboration process. This provide a forum for joint reflection, feedback and iterative redesign of training modules and assessment criteria. Co-development not only improves the relevance and feasibility of the training content, but also fosters participant engagement and commitment, which is essential for successful implementation. (Bovill, 2020, 1023–1037.)

The integration of these methods follows a sequential and iterative logic within the research process. Initially, survey inform the general direction and focus areas for development. Observations are then conducted to validate and deepen the findings. Finally, insights from both survey and observations are brought into co-development process, where practical solutions and revisions are collaboratively designed. This integration supports a participatory action research framework that emphasizes continuous learning, stakeholder involvement, and context specific innovation. (Stringer, 2014, 113, 118, 127.)

By combining these methods, the research ensures methodological triangulation, enhances data credibility, and facilitates the development of a competency-based training model that is both evidence informed and practice oriented.

#### 4.4 Data collection and analysis methods

Qualitative research aims to understand and deepen people's experiences and perceptions of certain phenomena. To achieve this, common data collection methods include interviews, surveys, observation, and the use of documents (Tuomi & Sarajärvi, 2018). The purpose of qualitative research is to enhance understanding of the phenomenon through individuals' personal experiences (Elo, Kajula, Tohmola, & Kääriäinen, 2022, 215).

In this study, the aim was to collect feedback from cabin crew members and instructors regarding the current competency-based training and assessment. Respondents were encouraged to share ideas and suggestions for improvement. Data were gathered through an electronic questionnaire during the winter of 2025 (Annex 1).

##### 4.4.1 Conducting the survey and analysing the data

Qualitative data can be analysed either inductively, by deriving findings from the data itself, or deductively, by analysing data through a theoretical framework. This study employed inductive content analysis, a data-driven method that involves three key phases: preparation, organisation, and reporting (Elo et al., 2022, 215–217). Content analysis is a systematic and objective method for summarising and interpreting textual material. Its goal is to construct models, concepts, and hierarchies to better understand the relationships between the studied phenomena. (Tuomi & Sarajärvi, 2018.)

The content analysis process begins with the researcher deciding whether to focus on manifest content or seek latent meanings in the data. The research questions guide which elements of the data are selected for analysis. (Tuomi & Sarajärvi, 2018.) Inductive analysis involves summarising, organising, and generalising the data. In the summarisation phase, expressions relevant to the research questions are identified and coded. These expressions are collected and organised into lists, forming the basis for categorisation. Similar expressions are grouped into subcategories. (Elo

& Kyngäs, 2008, 107–115.) In the generalisation stage, the goal is to describe the studied phenomenon using general concepts. Categories are merged and described with unifying terms. (Vaismoradi, Turunen, & Bondas, 2013, 398–405.)

In this thesis, a structured questionnaire was used to collect responses concerning cabin crew training and assessment (Annex 1). The questionnaire was distributed via a Webropol link sent to respondents' work emails in February 2025. Respondents had two weeks to complete the survey, and a reminder email was sent after one week. The target sample size was 100.

The qualitative data comprised open-ended written responses. While open-ended responses can be analysed using either statistical or qualitative methods, this study employed a qualitative approach. Content analysis aims to compress data into a concise format while preserving essential information (Elo & Kyngäs, 2008). The process begins with breaking the data into smaller parts through coding and then reassembling it into a new, meaningful whole (Schreier, 2012, 20–22).

Inductive content analysis follows three main steps: reduction, grouping, and conceptualisation. In the reduction phase, relevant expressions are extracted and irrelevant information is removed. (Graneheim & Lundman, 2004, 105–112.) Grouping involves identifying similarities among coded expressions to form subcategories. These subcategories are then merged into broader categories and, ultimately, main categories. The final stage, conceptualisation, connects empirical data with the theoretical framework of the study. (Schreier, 2012, 107–110.)

The data analysis began with reviewing all responses in Webropol. Responses were exported to Excel, where each question was assigned a column and individual responses were entered in rows. In the reduction phase, the researcher read each response multiple times, highlighting key expressions. These were then summarised and listed in a table, with the original response in one column and the simplified version in another. During the grouping phase, these expressions were categorised into subcategories and subsequently into broader categories, leading to the formation of main categories.

In addition to qualitative data, the questionnaire included a set of closed questions designed to collect quantitative information on participants' perceptions of current training and assessment practices (Annex 1). The questions used scales and multiple-choice forms to measure respondents' agreement or satisfaction with different aspects of competency-based training and assessment. The analysis of quantitative data focused on identifying patterns and trends in responses,

which allowed for objective comparisons between different groups of respondents, such as instructors and cabin crew members. The statistical results provided valuable information on the areas that were considered positive as well as those that required improvement.

The analysis was carried out using Webropol's integrated platform, which combines data collection, reporting, and analytics tools. This facilitated efficient and streamlined data handling. (Webropol, 2023.) Descriptive statistical methods, such as calculating frequencies, percentages, means, and standard deviations, were used to summarise the data. These summaries provided an overview of general attitudes and experiences among respondents. For example, mean values revealed overall satisfaction levels, while distribution patterns highlighted the spread of opinions across different items. The comprehensive reports generated by Webropol supported the interpretation of the data and provided a foundation for identifying both strengths and areas for development in the current training and assessment process. By combining these quantitative findings with the qualitative data, the study was able to produce a more holistic and reliable understanding of the effectiveness of competency-based training for cabin crew.

#### 4.4.2 Conducting the observation and analysing the data

In this study, observation was carried out using both participant and non-participant methods. The researcher participated as an active observer during her own annual recurrent training sessions and also conducted non-participant observations by monitoring colleagues' training from an external standpoint. Both systematic and non-systematic observation approaches were used. (Angrosino, 2007, 53–55.) The choice of methods was influenced by the researcher's prior knowledge of the phenomenon, which allowed for structured observation as well as the application of existing experiential understanding through non-systematic observation (Kawulich, 2005, 5–7).

Observations were documented in a research diary and supported by photographs taken during the observation sessions. These sessions took place on March 5–6, 2024; April 23, 2024; and February 18–20, 2025. On the first and last observation occasions, the researcher acted as a participant observer during her own recurrent training. On the second occasion, observation was conducted as a non-participant, where the researcher followed the training passively, taking notes and capturing photographs.

During the first and last sessions, the observations included traditional classroom-based instruction and various simulation exercises. These comprised activities conducted in the classroom as

well as simulations held in an official aircraft simulator mandated by aviation authorities, covering both normal procedures and emergency procedures. The second observation session focused on training scenarios involving emergency equipment usage and classroom-based emergency situation simulations.

The writing of the research diary began immediately after the first observation session. It included the researcher's personal reflections, feedback, summaries, and questions. Feedback and inquiries from colleagues were also noted, either written directly into the diary or on sticky notes later affixed to it. Evening entries offered space for deeper reflection on the day's experiences. A research diary should always be readily accessible. Therefore, the diary accompanied the researcher during each observation session and was sometimes even kept at the bedside. Particular care was taken to protect the privacy of individuals involved in the study. The research diary was kept in physical (paper) format.

The analysis began by carefully examining the contents of the research diary. In practice, this involved reviewing handwritten notes with a pen in hand, identifying recurring themes and observations that could advance the study. The research diary is highlighted as a valuable tool for data preservation and conceptual reflection (Etherington, 2004, 127). Identifying meaningful core themes from the material forms the basis for analysis (Braun & Clarke, 2006, 7).

During the analysis, two different perspectives emerged: the researcher's perspective and the practitioner's perspective. As a developer, the researcher focused in particular on analysing the competency-based training model and her own role as part of the development process. From the researcher's perspective, emphasis was placed on the interpretation and evaluation of the research process itself, including self-evaluation in the context of action research. Attention was paid to recorded experiences, emotional reactions and elements perceived to be relevant to the research. In this way, the analysis not only served the research objectives but also contributed to the development process.

## 5 Results of the survey

The survey was sent to 209 Jetttime cabin crew members via their work email (Annex 1). A total of 66 responses were received. The response rate of the survey is 31.5 %. The response rate indicates several potential insights. It suggests a moderate level of engagement with the survey, but not an exceptionally high one, meaning that many cabin crew members either didn't have the time or interest to respond. This response rate could reflect a moderate level of interest in the survey topic, with those more engaged or affected by the subject matter more likely to participate, while others may have felt less compelled. Additionally, the response rate might also indicate survey fatigue or accessibility issues, particularly in an industry with irregular hours and heavy workloads, making it harder for some to access or complete the survey amidst their duties.

### 5.1 Demographic information

The majority of survey participants, 69.7 % (46 respondents), work as cabin attendants (CA or CA+), while 28.8 % (19 respondents) are cabin chiefs (CC). One respondent (1.5 %) holds both the cabin chief and instructor roles. No participants work solely as an instructor or in a combined cabin attendant and instructor role. This suggests that most respondents are in core cabin crew roles, with fewer involved in training or supervisory positions.

In terms of industry experience, 39.4 % (26 respondents) have 1–5 years of experience, followed by 21.2 % (14 respondents) with 6–10 years. A total of 19.7 % (13 respondents) have more than 15 years of experience, while 13.6 % (9 respondents) have less than a year, and 6.1 % (4 respondents) have 11–15 years.

At Jetttime, most respondents (56.9 %, 37 respondents) have worked for 1–5 years, with 20.0 % (13 respondents) having less than a year of experience. Fewer have been with the company for 6–10 years (15.4 %, 10 respondents), and even fewer have been with Jetttime for 11–15 years (6.2 %, 4 respondents), or more than 15 years (1.5 %, 1 respondent). This shows that most respondents are relatively new to Jetttime, although there are some more experienced employees.

## 5.2 Training content

The responses regarding the most beneficial areas of training show that aviation regulations (4.1) were considered the most important, followed by emergency procedures (2.0), first aid (2.6), normal procedures (3.0), and safety and security (3.0). Aviation regulations were rated the highest, with a median score of 5, indicating its critical importance. Emergency procedures were also highly valued, with a low average score of 2.0 and a median of 1.0, reflecting their importance to the crew. First aid was seen as beneficial, but not as crucial as emergency procedures. Normal procedures and safety and security had similar average scores (3.0), suggesting they were considered useful but less critical. See Table 1. below.

Table 1. Which areas of the training do you find most beneficial? Please place in order when number 1 is the most beneficial and number 5 least beneficial area.

	Min value	Max value	Average	Median	Sum	Standard Deviation
Normal procedures	1,0	21,0	3,0	3,0	197,0	2,5
Emergency procedures	1,0	5,0	2,0	1,0	131,0	1,3
First Aid	1,0	5,0	2,6	2,0	167,0	1,2
Safety and Security	1,0	5,0	3,0	3,0	194,0	1,1
Aviation regulations	1,0	5,0	4,1	5,0	269,0	1,3

Regarding areas for improvement, respondents highlighted a need for more practical training in first aid, particularly with hands-on use of medical equipment. Some also noted that recurrent first aid training feels rushed and suggested instruction with real life emergency medical professionals. Emergency procedures were seen as needing more thorough training, with requests for better simulation exercises and clearer instructions on handling multiple emergencies. There were also suggestions to address work related fatigue and stress, improve training on handling unruly passengers, and provide more service related training, such as grooming, alcohol knowledge, and customer service. Some respondents felt the training should be more practical, with less emphasis on theory and more focus on real world scenarios.

*“More hands-on training with first aid equipment, e.g. not just showing “here is SAM Splint” but training on how to use it and other bandages, heat blanket, blood pressure monitor, pulse oximeter etc. How to cover and clean different types/sizes of wounds etc.”*

*“There should be a person with the knowledge of medical health care to teach first aid. It would be beneficial for everyone to have the chance to ask questions from a person who is qualified as professional medical care personnel.”*

*“Unruly (how to deal with an unruly/violent pax, handcuffing, procedure?)”*

*“Evacuation in the simulator is relatively sloppy and not fully understood: the chain of different emergencies, what to do if the events are happening one after another, what to prioritize to deal with.”*

*“Emergency and normal procedures not covered in a way to create an understanding the consequences.”*

*“Service and product info: crew should be taught basic knowledge of the alcohol we sell onboard, what different cocktails contains, why whiskey is offered with ice but cognac not etc.”*

*“Grooming (importance of being the face and a brand ambassador of a company to keep up a high prestige). I see the importance of grooming as high as it has a great impact of how you look. If you’re not properly groomed, customer might assume the company and the crew as tired, less prestigious and not motivated enough to have a pleasant and welcoming appearance for the passengers.”*

In summary, while respondents found the training program valuable, they called for more depth and hands-on practice in key areas like first aid, emergency procedures, and conflict management. They also requested more realistic simulations and a focus on practical skills directly applicable to flights.

### 5.3 Effectiveness of training

The responses to the question about whether the training program adequately prepares cabin crew for real life scenarios show a mixed level of confidence in the program's effectiveness. A significant portion of respondents, 45.5 % (30 respondents), felt neutral, suggesting that they neither strongly agree nor disagree with the statement, possibly indicating uncertainty or a lack of clarity regarding how well the training translates into real world preparedness. Meanwhile, 40.9 % (27 respondents) agreed that the training program prepares them adequately, which indicates a moderate level of confidence in the training's effectiveness. Only 4.5 % (3 respondents)

strongly agreed, showing that a smaller group feels completely confident in the program's ability to prepare them. On the other hand, 9.1 % (6 respondents) disagreed with the statement, suggesting that a small number of respondents feel the training is insufficient for preparing them for real life situations. No respondents strongly disagreed, indicating that, although there is some skepticism, there are no extreme concerns about the adequacy of the training program. See Figure 2. below.

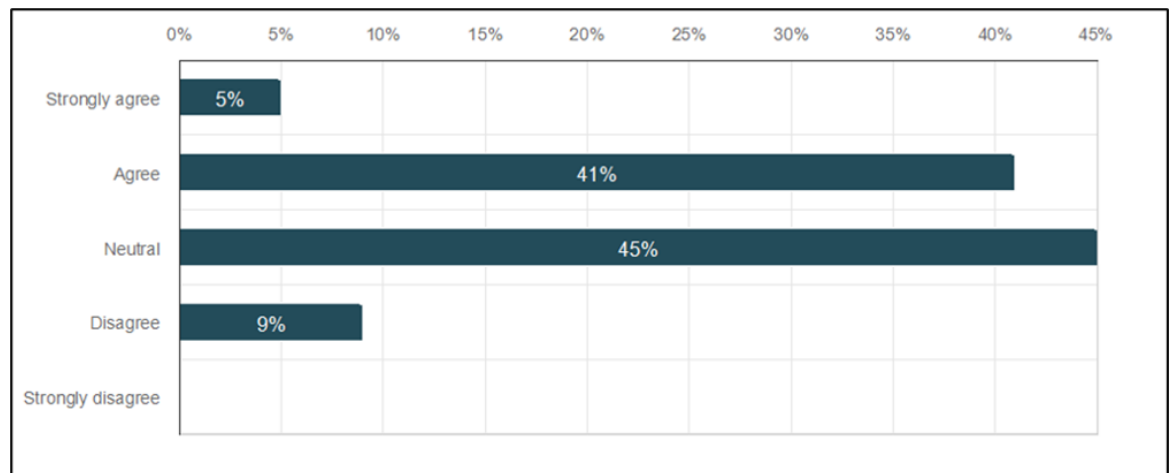


Figure 2. Do you feel the training program adequately prepares you for real life scenarios?

In summary, while the majority of respondents seem to either agree or remain neutral on the effectiveness of the training program, there is a noticeable proportion of respondents who believe it could be improved to better prepare them for real life scenarios.

#### 5.4 Assessment methods, effectiveness of assessments and feedback

The assessment methods used in cabin crew training, such as practical exams, simulations, and written tests, received a mixed response from participants. The majority of respondents found the methods to be either well suited or neutral, while a smaller proportion found them somewhat suited. A total of 24 respondents (36.4 %) rated the assessment methods positively, with 7.6 % (5 respondents) considering them "very well suited" and 28.8 % (19 respondents) finding them "well suited." This indicates that over one-third of the respondents believe the current assessment methods effectively evaluate cabin crew competencies. These results suggest that practical evaluations, simulations, and written tests generally align with training objectives and industry requirements.

The largest number of respondents, 28 individuals (42.4 %), expressed a neutral stance, indicating that while the assessment methods are neither problematic nor particularly effective, there may be room for improvement. This neutrality could stem from factors such as the perceived difficulty of assessments, lack of engagement, or a preference for alternative evaluation methods. While no respondents rated the methods as "not suited at all," 14 individuals (21.2 %) found them "somewhat suited." This suggests that although the assessments are functional, certain aspects might not fully align with learners' needs or expectations. Possible concerns could include the balance between theoretical and practical evaluation, the realism of simulations, or the clarity of assessment criteria. See Figure 3. below.

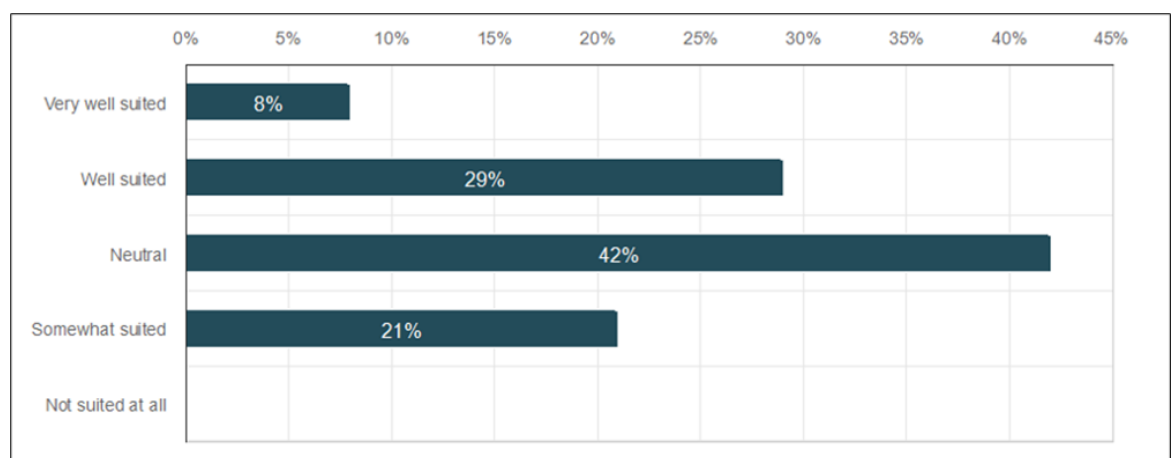


Figure 3. How do you find the assessment methods used during the cabin crew training? (e.g., practical exams, simulations, written tests)?

Overall, the assessment methods used in cabin crew training appear to be generally effective, with a significant number of responders viewing them as suitable. However, the high percentage of neutral responses (42.4 %) and those who rated the methods as only "somewhat suited" (21.2 %) highlight potential areas for refinement.

The responses to questions about the effectiveness of assessments and feedback reveal mixed opinions. A large a large proportion of respondents (43.1 %) remained neutral regarding the effectiveness of assessments, indicating uncertainty about whether they accurately measure competencies. However, 36.9 % of respondents agreed that the assessments are effective, though only a small group of respondents (4.6 %) strongly agreed. A smaller percentage of respondents (12.3 %) disagreed with the assessments' effectiveness, suggesting room for improvement in the evaluation process.

Regarding feedback, 33.3 % of respondents reported receiving feedback sometimes, while 27.3 % rarely and 15.1 % never received it, indicating an inconsistent feedback process. Only 7.6 % of respondents always received feedback, highlighting the need for more regular and reliable evaluation. When asked if receiving feedback would improve their attitude toward training, 47.0 % agreed, with 13.6 % strongly agreeing, reflecting a strong belief in the value of feedback for enhancing engagement and motivation. Despite some neutral responses (33.3 %), most respondents believe feedback would positively influence their training experience. See Figure 4. below.

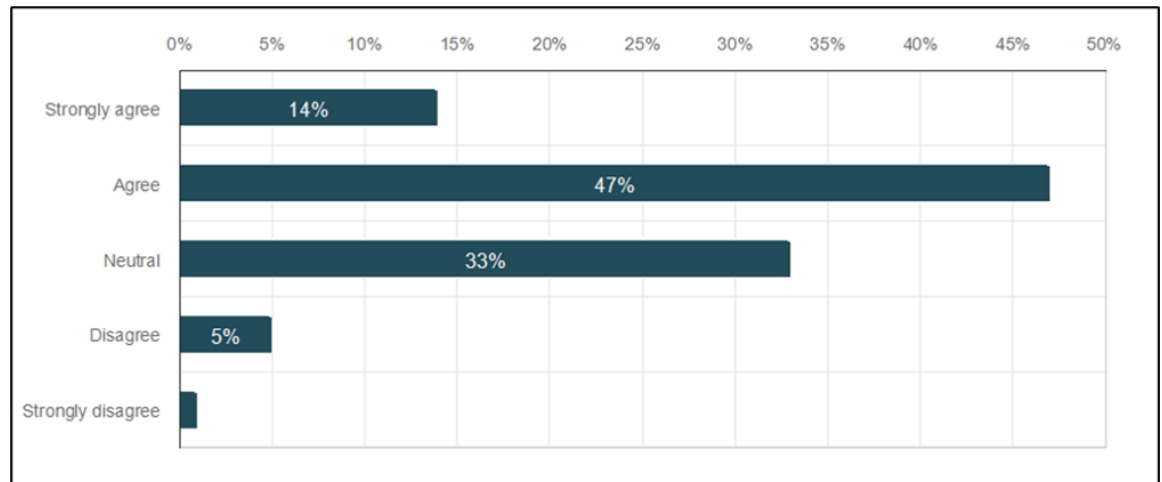


Figure 4. Would receiving feedback after assessments improve your attitude towards the training?

In summary, while many respondents feel that assessments and feedback could be improved, there is a strong desire for more consistent feedback to enhance training effectiveness and motivation.

### 5.5 Overall satisfaction of the training program

The responses regarding overall satisfaction with the competency-based training program indicate that most participants have a generally positive perception of the program. A total of 44.0 % (29 respondents) reported being satisfied, while 9.1 % (6 respondents) were very satisfied. This suggests that a majority of the respondents find the training program effective and beneficial.

However, a significant portion, 33.3 % (22 respondents), expressed a neutral stance, indicating that while they do not have strong negative opinions, they also do not feel particularly satisfied

with the program. This neutrality may suggest areas where improvements could enhance engagement and effectiveness.

Meanwhile, 13.6 % (9 respondents) reported dissatisfaction with the training program, though none of the respondents selected "very dissatisfied," indicating that while there are concerns, they are not extreme.

*"I would focus on the content of the training. Personally I felt that there was a lot of playing and gameing, which made me question the severity of the topic. By looking in to the content of the training, my strong belief is that time, resources and money could be saved."*

*"Structuring lessons better time wise, a lot of times we either run out of time or finish very early and have long brakes in-between."*

*"More individual training. Or at least smaller groups with more communication and discussion opportunities. Not so much being watched by all other people while doing different scenarios. Many feel uncomfortable by it and it affects the training. Better to divide into smaller groups who can do different training at the same time, and then switch. Especially at HQ."*

*"The training should be arranged also in Finland and it would be fair that there would be instructors from all bases. English is our common language therefore it should be fluently spoken by the instructors. Verbal feedback from the training session is not always taken constructively."*

*"Instructors should have proper up to date knowledge, competency and pedagogical skills to act as an instructor."*

*"More supportive attitude during the simulations from instructors, it was a very rushed environment and negative setting. Ccomments like "how haven't you learned this" or "how can you not know this". I would have prefered, group discussions and helpful reminders instead."*

*"Focus more the hands-on training in the simulator (in real life there is no one to tell you what to do) for example after every evacuation or emergency event discussion of what went right and what would be better to do differently next time. I would also like more "real life examples" - what happened and how was the (evacuation) process, what things to consider if you're ever in similar situation. How long does it take until you might hear certain commands (how long the pilots need for reading checklists etc) - sort of putting different puzzle pieces together to get the big picture."*

*"The new fire mock up was good. Usually mock ups are total mess and a waste of time, not very beneficial to anyone. They should be more structured even though the real life situations usually aren't. People should have an opportunity to practise all possible situations separately before having fire, unruly, childbirth or heart attack all at the same."*

The overall satisfaction with the competency-based training program is generally positive, with a majority of respondents finding it effective. However, the significant percentage of neutral and dissatisfied responses highlights areas for improvement. Key concerns include the structure and content of training sessions, the need for more hands-on and individualized training, and the importance of constructive feedback from instructors. Additionally, ensuring instructors have up to date knowledge, strong pedagogical skills, and a supportive attitude during simulations could enhance the learning experience.

This study brings new perspectives to the topic by giving voice to the cabin crew's lived experiences, which have often been underrepresented in training design processes. The findings emphasize the importance of aligning training methods with adult learning principles, emotional safety, and role realism, elements that are crucial for effective learning in high stakes environments. The results underscore the practical value of crew feedback and demonstrate how competency-based training can be refined to better meet the needs of a diverse and evolving workforce.

Moreover, the study highlights the significance of new knowledge in developing more inclusive and context sensitive training practices. By identifying previously overlooked challenges, such as language barriers, the emotional impact of performance evaluation, and the discomfort of being observed during assessments, the research provides a more nuanced understanding of the learner experience. This new insight is essential not only for improving current training at Jettime, but also for informing industry wide development of more human centered and responsive training models.

## 6 Conclusions

Since no previous research on this topic has been conducted within the organization, this study has generated critically important internal insights that can be utilized in planning future training programs. The findings have practical implications for improving training delivery, fostering inclusivity, and supporting professional development. For example, the results can inform the design of more interactive and tailored training sessions, guide the recruitment and development of instructors, and help prioritize key competencies such as communication and customer service. Additionally, the study highlights opportunities to adopt more modern tools like learning analytics, digital learning platforms, and simulation-based training to improve knowledge retention and enhance realism. These tools could, for instance, track individual learning progress, identify development areas, and personalize learning paths, making training more efficient and data driven.

Furthermore, the study contributes new perspectives by connecting theoretical frameworks such as self-determination theory, competency-based education, and inclusive pedagogy with practical training design and delivery. These theories can be applied by integrating self-assessment, goal setting, and differentiated instruction into the curriculum, which would enhance crew motivation and performance.

Although the study is useful, it also has limitations. It is based on feedback collected from a specific group of employees within a single airline, which may limit generalizability. The insights are context-specific and reflect the views of current Jetttime cabin crew members, meaning further studies would be valuable to explore perspectives from different bases, departments, and cultural contexts. Additionally, future research could focus on developing measurable indicators of competency progression, evaluating the long term impact of training interventions, and exploring the role of artificial intelligence in training personalization.

The findings also offer a strong foundation for future development projects within Jetttime. These could include piloting a digital learning environment with built in learning analytics to track crew engagement and performance, developing more advanced simulator scenarios to prepare for high stress or emergency situations, or creating more hybrid training models that combine e-learning with in person simulations. As the industry continues to evolve, integrating these innovations will be key to ensuring that training remains relevant, inclusive, and aligned with operational demands.

Based on respondent feedback, several key areas for enhancing future cabin crew training at Jet-time have been identified. These include improvements in assessment methods, instructional quality, language inclusivity, and the integration of additional competencies.

**Enhancing training methods and assessments:**

- Introduce more verbal assessments and feedback sessions both during and after training, as many crew members feel they receive too little follow-up evaluation after course.
- Increase practical exercises and simulator training to reinforce learning and provide hands-on experience.
- Implement daily tests or recap sessions to improve knowledge retention.
- Conduct training in smaller groups to enhance engagement and learning effectiveness.

**Instructor development and training quality:**

- Ensure instructors stay updated with current training content and industry standards to maintain credibility.
- Recruit qualified and experienced instructors with a strong background in airline procedures and effective training communication.
- Recruit qualified first aid instructors (preferably an emergency medical professional) with knowledge of the airline industry and work of cabin crew.
- Adapt more training methods to accommodate different learning styles (visual, auditory, text-based).
- Encourage instructors to be open to feedback and discussions, rather than perceiving questions as personal challenges.

**Language and inclusivity considerations:**

- Conduct training primarily in English to maintain consistency, as it is the company's official language.
- Employ more multilingual instructors (e.g., Danish, Swedish, Finnish) to support diverse crew members and minimize communication barriers.
- Increase recognition and inclusion of non-Danish crew members in training locations and course structures.

**Expanding competencies and skills:**

- Provide training on handling unruly passengers, including de-escalation techniques and self defense.
- Expand first aid training with more hands-on practice.
- Improve communication training for interactions with special category passengers (e.g., visually or hearing-impaired passengers, individuals with disabilities).
- Strengthen customer service training to enhance the passenger experience.
- Reinforce grooming standards to uphold professional appearance expectations.
- Incorporate more real life case studies on safety procedures and in-flight challenges to enhance problem solving skills.

**Structural and cultural improvements:**

- Foster an open feedback culture through structured face to face feedback sessions and performance evaluations.
- Diversify instructor selection by incorporating external perspectives to prevent training from becoming insular.
- Improve transparency regarding procedural updates, ensuring all crew members are consistently informed of operational changes.

Future trainings at Jetttime should place a strong emphasis on enhancing practical learning, improving instructor quality, ensuring inclusivity, and strengthening essential competencies such as unruly passenger management and customer service. A well structured feedback system is critical to supporting continuous improvement. Personalized feedback discussions following recurrent training can provide valuable insights into individual performance, helping crew members reflect on their strengths and areas for development, thus fostering motivation and professional growth. (Andersson, 2020, 78–92.)

A number of demographic and organisational factors influence cabin crew satisfaction with current training and assessment practices. Age, years of service and crew location can have a significant impact on how training is perceived. Older and longer serving employees often value stability and may be more resistant to changes in training methods, especially if they perceive new approaches as undermining their existing expertise. (Maurer, 2001, 123–140.) In contrast, younger or newly hired employees may be more open to digital learning solutions and expect more interactive and personalized training (Noe, Clarke, & Klein, 2014, 245–275). In addition, underlying factors such as differences in local management styles, resource availability, and consistency of training delivery can create differences in learning experiences, affecting both satisfaction and perceived equity (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012, 74–101).

To address these variations, a more flexible and individualized approach to education development should be adopted. Blended learning solutions, can meet the needs of both experienced and less experienced employees (Kirkpatrick & Kirkpatrick, 2016, 116). Regularly collecting feedback from different crew bases and experience levels can support local adaptations while maintaining basic standards. Competency-based training (CBT) ensures consistency of expected outcomes across different learner groups, while still allowing flexibility in teaching methods (ICAO, 2013).

Optimizing training to better leverage individual competencies and support career advancement will also allow employees to progress within the company based on their skills and interests (Brown, 2022, 45–58). Recognizing the diverse educational backgrounds of cabin crew, such as nursing, teaching, security and safety, or ongoing academic studies, can offer strategic opportunities for internal mobility. Tailored career pathways, additional training, and role diversification based on existing skills can lead to more engaged employees and better resource allocation. (Billett, 2011, 41–56; Eraut, 2004, 247–273.) Providing systematic opportunities for advancement also increases job satisfaction and extends employee retention (Ryan & Deci, 2017, 13–19).

Language inclusivity remains a critical element in ensuring effective communication and equitable learning. Establishing English as the consistent training language guarantees that safety procedures and service standards are clearly understood across all crew bases, minimizing operational risks and fostering cohesive teamwork. (Miller, Thompson, & Garcia, 2018, 12–27.) Equally important is the diversification and continuous development of instructor competence. A broader instructor base, representing different cultural and operational backgrounds, enhances inclusivity and relevance in training delivery. Instructors must possess strong pedagogical skills, up to date industry knowledge, and professional teaching qualifications to ensure effective learning outcomes. (White & Black, 2023, 29–45.) According to Green (2021, 67–80), the quality of instruction directly influences knowledge retention and crew confidence, factors that significantly affect both safety and customer service standards onboard.

Competency-based training (CBT) plays a key role in shaping the performance and professionalism of cabin crew. Unlike traditional training approaches focused solely on theoretical knowledge, CBT emphasizes the practical application of essential skills, attitudes, and behaviors in real life scenarios. This ensures that cabin crew are fully prepared to manage a wide range of in-flight situations, from safety protocols to high level customer interactions (ICAO, 2013). As a result, CBT leads to improved service delivery and higher passenger satisfaction. Cabin crew trained through this method are better equipped to address diverse customer needs, manage challenging situations calmly, and provide personalized, attentive service. These capabilities contribute to a more seamless and enjoyable travel experience, increasing customer loyalty and enhancing the airline's competitive advantage. (Choi & Choi, 2019, 65–72.)

From a branding perspective, the professionalism and consistency demonstrated by well trained cabin crew directly influence passengers' perceptions of the airline. Cabin crew serve as frontline brand ambassadors, and their behavior often reflects the core values of the organization. Investing in CBT allows an airline to build a reputation for quality, safety, and customer centric service, key differentiators in the aviation industry. (Wirtz, Heracleous, & Pangarkar, 2007, 14–19.)

In addition to CBT, incorporating service design principles into cabin crew training offers Jettime the opportunity to build a more customer centric and innovative training culture. Service design focuses on understanding the service experience from the user's perspective and can be a powerful tool in improving both internal operations and external customer satisfaction (Stickdorn, Hormess, Lawrence, & Schneider, 2018). For example, empathy mapping could be used in training needs assessments to explore both passenger and crew experiences. Mapping out common pas-

senger frustrations, such as poor communication during delays or service inconsistencies, can inform the development of training modules that foster emotional intelligence and problem solving. (Polaine, Løvlie, & Reason, 2013.)

Co-development is another valuable method. Jettime could engage cabin crew in the design of service procedures through collaborative workshops, encouraging the sharing of frontline experiences to improve customer touchpoints. These sessions could lead to the co-development of tailored customer service strategies or streamlined communication protocols, enhancing crew ownership and commitment (Stickdorn et al., 2018). Iterative feedback cycles also help ensure continuous improvement in training. Jettime could organize regular debriefing and peer review sessions after simulations or actual flights, where the crew reflects on their performance and suggests improvements to training or service processes. (Ostrom et al., 2015, 127–159.)

Additionally, customer journey mapping would help identify emotionally significant moments across the passenger experience, such as boarding, cruising, or disembarkation, ensuring that training prepares crew to deliver outstanding service at those key points. (Lemon & Verhoef, 2016, 69–96.) Jettime can also benefit from prototyping new service ideas before implementing them across the entire organization. For example, a small group could test a new personal greeting protocol or improved safety instructions, and the results could be used to fine tune the service before wider implementation. Creating prototypes enables iterative development and minimizes risks by identifying problems at an early stage (Stickdorn et al., 2018). Finally, creating multisensory learning environments using tools such as virtual reality can prepare crews for high stress scenarios by simulating real life conditions. This practical approach improves emotional resilience and decision making under pressure, resulting in more confident and capable flight crews. (Duruaku, Nguyen, Green, Sonnenfeld & Jentsch, 2023, 45–56.)

In summary, the future of Jettime training should be based on a comprehensive and inclusive CBT approach that combines employee development and operational skills. By strengthening practical skills, improving the quality of instructors, promoting linguistic inclusivity and recognizing prior skills, training or education, Jettime can train a highly competent and motivated cabin crew. This, in turn, will improve the passenger experience and strengthen the airline's brand as a reliable and customer focused airline. Furthermore, by integrating service design principles such as empathy, co-development, iterative feedback, and customer experience mapping, Jettime can build a training program that meets future requirements and emphasizes readiness to act in real life situations.

ons, engagement, and customer centric thinking. This comprehensive approach not only improves the performance and motivation of cabin crew, but also enriches the travel experience and strengthens Jetttime's reputation as a reliable, innovative, and service oriented airline.

## 7 Reflection

This thesis aimed to develop the competency-based training and assessment of cabin crew through a combination of survey research and observations. The findings provide valuable insights into the strengths and areas for development in the current training program, offering practical recommendations for enhancing both the training content and evaluation methods.

### 7.1 Research reliability and ethics

As with all research involving human participants, ethical considerations are essential to ensuring the reliability and credibility of the study. The foundation of scientific research lies in honesty, accuracy, and diligence throughout the research process. Researchers must use scientifically valid and ethically sound methods in data collection, analysis, and evaluation. When publishing research findings, transparency and significance should be emphasized while respecting the contributions of other scholars. (TENK, 2023, 11–14.)

The survey was conducted among Jetttime airline's cabin crew, and participant consent was implied through their voluntary response. Ethical principles were followed by ensuring participant anonymity and data confidentiality while emphasizing that non-participation would not have negative consequences. All data were anonymized and handled with care to protect the identities and responses of participants. OpenAI contributed to the research by brainstorming key themes, structuring the study, planning information retrieval, and refining the language of the written text.

The goal of scientific research is to produce the most reliable information possible about the subject under investigation. The credibility of research is assessed based on how truthful and accurate the knowledge it generates is. (Kylmä & Juvakka, 2007, 127.) Typically, the reliability of research is evaluated using the concepts of validity and reliability. Validity refers to the accuracy and relevance of the study, ensuring that it measures exactly what it is intended to measure. Reliability, on the other hand, pertains to the consistency and reproducibility of the study's results. These concepts originate from quantitative research and may not always be directly applicable to development research, which often involves qualitative methods. (Tuomi & Sarajärvi, 2009, 136–139.)

In qualitative research, the execution of the study and its reliability are inseparable. The most crucial criterion for reliability is the researcher's professionalism and ethical integrity, as the various stages, choices, and decisions made during the research process are subject to scrutiny. (Vilkka, 2005, 158–159.) Researchers must clearly justify their methodological choices and evaluate their suitability and effectiveness in relation to the research objectives. (Vilkka, 2021.) Qualitative research reliability is sometimes criticized due to factors such as small sample sizes, subjectivity, and the lack of randomization and generalizability. (Kylmä & Juvakka, 2007, 133.)

Several factors influence the reliability of this study. The response rate was 31.5 % (66 respondents out of 209 invited participants), which provides valuable insights but may limit the generalizability of the findings. While this response rate is acceptable for survey-based research, a higher number of participants would have increased the reliability of the results. Additionally, response bias is possible, individuals with strong opinions about the training program may have been more motivated to respond, which could impact the balance of the findings.

Based on the results, cabin crew generally view the training program positively but have identified areas for improvement. A key issue raised by participants was the need for more practical training, particularly in first aid, emergency procedures, and conflict management. These findings contribute directly to the development of more effective training strategies while also enhancing the expertise gained through the research process. By analyzing the feedback, I have improved my skills in data analysis, survey design, and understanding competency-based training in the aviation industry.

The reliability of the study was further strengthened by maintaining a research diary, in which different stages of the research process were documented and reflected upon. These diary entries were particularly useful in the evaluation section of the development work. Additionally, the stages of action research were described in distinct cycles, and direct quotes from the questionnaire were used to support the analysis. Reflection was utilized to assess the action research cycles, identify developmental challenges, and evaluate the researcher's role and impact on the research process. Maintaining a reflective research diary and applying cyclical action research stages are recognized practices for enhancing transparency and trustworthiness in qualitative studies. (Suojanen, 2014.)

## 7.2 Development of personal expertise

This study has significantly contributed to the development of my personal expertise in the field of tourism leadership and development, particularly within the domain of training and development in the aviation industry. I have gained valuable experience in designing and conducting surveys, analyzing quantitative data, and interpreting results in a way that can lead to actionable recommendations. The insights provided by the survey responses have expanded my understanding of how cabin crew training can be structured to meet both the regulatory requirements and practical needs of the crew members. This project has allowed me to develop a deeper understanding of how competency-based training can be enhanced by integrating practical, hands-on learning experiences and improving feedback mechanisms.

## 7.3 Opportunities for further research

There are several possibilities for further research that could build upon this study. One area of research could be a long term study to see how changes to the training program affect crew performance over time. It would be interesting to explore how the incorporation of hands-on training and more regular feedback sessions influences both job satisfaction and competency levels in cabin crew members. Another potential area for further research could be investigating the role of cultural diversity in training programs, particularly in multinational companies like Jettime, where crew members come from various cultural backgrounds. This could help identify if cultural factors affect the effectiveness of training programs and how they can be better tailored to diverse crews.

Additionally, a comparative study between Jettime's training program and those of other similar airlines could provide insights into best practices and highlight areas where Jettime could learn from others in the industry. Such research could provide benchmarking data that would be invaluable in improving training content, delivery methods, and assessment processes.

Overall, this study increases understanding of cabin crew training and provides concrete recommendations for improving the training experience of Jettime employees. It also provides a basis for further research to develop training methods for the aviation industry and create a more engaging and effective training environment for cabin crew.

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Dear colleague,

Your insights are vital to enhancing the way we train our cabin crew at Jetttime. By participating in this survey, you'll be contributing to a plan that ensures our crew is well-equipped with the knowledge, skills, and mindset required for safe and efficient performance. Your feedback will directly support the improvement of our training practices, resulting in better outcomes for both our team and the passengers we serve.

As professionals, it is our shared responsibility to ensure that our crew meets the highest standards of safety and service. By sharing your thoughts, you are helping us refine our training programs and strengthening the overall safety and performance of the airline. Together, we can make a real difference in the development of our team and the success of our operations. Your opinion truly matters.

I am currently pursuing a Master's Degree in Tourism Leadership and Development at Kaajaani University of Applied Sciences in Finland. For my thesis, I am focusing on improving competency-based training and assessment of cabin crew at Jetttime. My goal is to provide our airline with a concrete action plan to enhance our crew's effectiveness and safety through better training and assessment.

I would greatly appreciate it if you could take 5–10 minutes to complete the questionnaire. All responses will remain confidential, and the results will be presented anonymously as part of my thesis.

**Please answer the survey by 23.2.2025.**

**Link to the survey: <https://link.webpolsurveys.com/S/A79455FCCA068CE1>**

Should you have any questions, please don't hesitate to contact me at [JJJ@jetttime.com](mailto:JJJ@jetttime.com)

Thank you for your time and valuable input!

Best Regards,

Jenni Jauria  
Cabin Chief

**Demographic information**

1. What is your current position?
  - a. Cabin Attendant (CA or CA+)
  - b. Cabin Chief (CC)
  - c. Instructor
  - d. Cabin Chief and Instructor
  
2. How long have you been working as cabin crew?
  - a. Less than a year
  - b. 1–5 years
  - c. 6–10 years
  - d. 11–15 years
  - e. More than 15 years
  
3. How long have you been working as cabin crew at Jetttime?
  - a. Less than a year
  - b. 1–5 years
  - c. 6–10 years
  - d. 11–15 years
  - e. More than 15 years
  
4. Which base you work in?
  - a. CPH
  - b. BLL
  - c. HEL
  - d. ARN
  
5. Have you received any previous training in a different field? If yes, please specify.
  - a. Yes
  - b. No

**Training content and structure**

6. How would you rate the overall structure of the competency-based training program?
  - a. Excellent
  - b. Good
  - c. Average
  - d. Poor
  - e. Very poor
  
7. How would you rate the clarity and comprehensiveness of the training materials?
  - a. Excellent
  - b. Good
  - c. Average
  - d. Poor
  - e. Very poor

8. Which areas of the training do you find most beneficial? Please place in order when number 1 is the most beneficial and number 5 least beneficial area.
- a. Normal procedures
  - b. Emergency procedures
  - c. First Aid
  - d. Safety and Security
  - e. Aviation regulations
9. Are there any topics you feel were not adequately covered? If yes, please specify.
- a. Yes
  - b. No

**Effectiveness of training**

10. How confident do you feel in performing your duties after completing the training?
- a. Very confident
  - b. Confident
  - c. Not very confident but not very uncertain either
  - d. Uncertain
  - e. Very uncertain
11. Do you feel the training program adequately prepares you for real-life scenarios?
- a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly disagree
12. Have you experienced situations where the training helped you perform effectively?
- a. Many times
  - b. Often
  - c. Sometimes
  - d. Rarely
  - e. Never
13. Does the annual recurrent training provide benefits for your daily work as a cabin crew member?
- a. Very beneficial
  - b. Beneficial
  - c. Somewhat beneficial
  - d. Not very beneficial
  - e. Not beneficial at all

**Assessment methods**

14. How do you find the assessment methods used during the cabin crew training?  
(e.g., practical exams, simulations, written tests)?
  - a. Very well suited
  - b. Well suited
  - c. Neutral
  - d. Somewhat suited
  - e. Not suited at all
  
15. Do you believe the assessments effectively measure your competencies?
  - a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly disagree
  
16. Were the assessment criteria clear and fair?
  - a. Very clear and fair
  - b. Clear and fair
  - c. Neutral
  - d. Somewhat clear and fair
  - e. Not clear and fair at all
  
17. Have you received feedback after your assessments?
  - a. Always
  - b. Usually
  - c. Sometimes
  - d. Rarely
  - e. Never
  
18. Would receiving feedback after assessments improve your attitude towards the training?
  - a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly disagree
  
19. How would you prefer to receive feedback after assessments?
  - a. Written feedback
  - b. Verbal feedback
  - c. Both written and verbal feedback
  - d. Through a follow-up meeting
  - e. No preference

**Training environment and resources**

20. How would you rate the training facilities (e.g., classrooms, equipment, simulators)?
- Very good and varied
  - Good and varied
  - Neither good nor bad
  - Poor and impractical
  - Very poor and impractical
21. Was the duration of the training program sufficient?
- More than sufficient
  - Sufficient
  - Neutral
  - Insufficient
  - Completely insufficient
22. Did you have access to all necessary resources (manuals, online tools) during your training?
- Always
  - Most of the time
  - Sometimes
  - Rarely
  - Never

**Instructor quality**

23. How would you rate the knowledge and expertise of the instructors?
- Very good
  - Good
  - Neither good nor bad
  - Poor
  - Very poor
24. Were the instructors approachable and supportive?
- Very approachable and supportive
  - Approachable and supportive
  - Neutral
  - Not very approachable or supportive
  - Not at all approachable or supportive

25. Did the instructors effectively address your questions and concerns?

- a. Always
- b. Usually
- c. Sometimes
- d. Rarely
- e. Never

**Personal and professional development**

26. How has the training impacted your personal growth and professional skills?

- a. Very positively
- b. Positively
- c. Neutral
- d. Negatively
- e. Very negatively

27. Do you feel more motivated and engaged in your role after the training?

- a. Very much so
- b. Somewhat
- c. Neutral
- d. Not really
- e. Not at all

28. Have you received any recognition or advancement opportunities as a result of your training?

- a. Yes, many opportunities
- b. Yes, some opportunities
- c. Neutral
- d. No, few opportunities
- e. No, none at all

**Overall satisfaction and future training needs**

29. Overall, how satisfied are you with the competency-based training program?
  - a. Very satisfied
  - b. Satisfied
  - c. Neither satisfied nor dissatisfied
  - d. Dissatisfied
  - e. Very dissatisfied
  
30. What improvements would you suggest for future training programs?
  
  
31. Do you have any additional comments or suggestions to improve the training and assessment process?
  
  
  
32. Are there any additional competencies or skills you would like to be included in future training?

