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The Effect of Self-Efficacy and Problem-Solving Skills on Social Skills Through on-the-Job Training in Indonesian Aviation Cadets

Parjan[1], Ekohariadi[2], Ratna Suhartini[3], Yeni Anistyasari[4]

Abstract

Cadets of the Airport Electrical Engineering Study Program at Aviation Polytechnic face challenges in maximizing On-the-Job Training (OJT). Self-efficacy and problem-solving skills are believed to influence OJT success and also support the development of social skills which are crucial in the dynamic airport work environment. This study aims to analyze the influence of self-efficacy and problem-solving skills on the social skills of cadets in the Airport Electrical Engineering study program, with OJT as a mediating variable. Self-efficacy and problem-solving skills are believed to be important in influencing cadets' performance when facing complex practical tasks at airports. The method used was Structural Equation Modeling (SEM) to evaluate the direct and indirect relationships between these variables. Data were collected through questionnaires from cadets who had undergone OJT. The results showed that self-efficacy and problem-solving skills had a positive significant effect on OJT performance, which in turn significantly affected social skills achievement. Strong self-efficacy increases cadets' confidence in communicating and collaborating with colleagues, while problem-solving skills help them overcome challenges and conflicts more effectively. The conclusion of this study suggests that increased self-efficacy and problem-solving skills can strengthen social skills through practical experience gained during OJT, which is critical for success in an aviation work environment.

Keywords: *Self-Efficacy, Problem-Solving Skills, On-The-Job Training (OJT), Social Skills.*

Introduction

Flight schools play an important role in preparing a reliable and competent generation of aviation professionals. The education organized by flight schools aims to equip cadets with the theoretical knowledge and practical skills needed in the world of work, especially in the aviation industry which is very strict in terms of safety standards, technical skills, and interpersonal abilities. Flight schools operate under strict guidelines from civil aviation authorities that regulate the curriculum, training methods, and certification to ensure graduates are prepared for the professional demands of flight operations. Flight school training consists of two main components: classroom learning and on-the-job training (OJT). Classroom learning covers the mastery of basic aviation sciences such as aerodynamics, navigation, meteorology, and aircraft engineering principles. In addition, flight schools also emphasize the development of soft skills such as communication skills, teamwork, and crisis management, which are needed in an industry that prioritizes safety and efficient operations.

After completing classroom learning, cadets are required to undergo OJT at various aviation facilities, such as airports, airline companies, or technical training facilities. During OJT, cadets are exposed to real work situations that allow them to put the theories they have learned into practice. This is an important stage in shaping practical skills that include not only technical skills but also relevant social skills. Team collaboration, communication with various parties in the work environment, and decision-making in stressful situations are some of the aspects that cadets face during OJT (Smith et al., 2022).

Research shows that self-efficacy has a direct impact on how individuals complete tasks and adapt to new environments. Individuals with high levels of self-efficacy tend to be more confident in facing challenges and are better able to adapt to dynamic work environments (Bandura & Locke, 2021). Cadets with high self-efficacy are better able to cope with this pressure by staying focused on the task and finding effective

[1] Universitas Negeri Surabaya, UNESA Indonesia
[2] Universitas Negeri Surabaya, UNESA Indonesia
[3] Universitas Negeri Surabaya, UNESA Indonesia.
[4] Universitas Negeri Surabaya, UNESA Indonesia

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solutions when facing problems, while cadets with low self-efficacy tend to have difficulty managing this pressure (Johnson et al., 2020). Therefore, a better understanding of the influence of self-efficacy on OJT can help in designing a more effective training program.

Several recent studies have explored the role of self-efficacy in the context of training in various sectors, including aviation. For example, research by García-González et al. (2021) found that self-efficacy contributed significantly to the success of practical training in the aviation industry, especially in terms of independence and decision-making skills. This suggests that cadets with higher self-efficacy are not only more confident in undergoing training but also better equipped to deal with challenges that arise during OJT. Improving self-efficacy can be one strategy to maximize OJT effectiveness. Good problem-solving skills enable cadets to deal with unexpected situations, find appropriate solutions, and improve their performance during OJT (Zhu & Thurlow, 2021).

Problem-solving skills are defined as the ability to analyze situations, identify problems, and design and implement effective solutions. In an aviation context, these skills include the ability to respond quickly to emergencies, make sound decisions under pressure, and navigate operational issues that may arise on the ground (Santos et al., 2023). Previous research has shown that problem-solving skills are closely related to individual performance in various work environments, including aviation. For example, a study by Lee and Park (2020) found that problem-solving skills significantly improved employee performance in the aviation industry, especially in terms of decision-making and emergency management. In addition, problem-solving skills also play a role in the development of critical skills required in the aviation workforce, such as the ability to analyze data, make informed decisions, and manage resources effectively (Huang & Wu, 2022). Strong problem-solving skills help them adapt to these changes more easily, as they can evaluate situations quickly, adjust their strategies, and find solutions that fit the conditions (González et al., 2023).

Social skills are particularly important in the aviation context as the industry demands effective teamwork, clear communication, and the ability to manage conflict well. Aviation cadets are expected to work in often stressful environments, where good social interactions can help reduce errors and improve team coordination (Smith & Jones, 2021). Research suggests that self-efficacy plays a role in improving social skills by influencing how one responds to challenging social situations. Individuals with high self-efficacy are more likely to be proactive in social interactions, demonstrate the ability to take initiative, and strive to build positive relationships with colleagues (Zhao & He, 2022). In the context of flight training, self-efficacy not only affects technical performance but is also closely related to the social skills needed to succeed in the demanding aviation work environment. For example, research by García et al. (2020) found that cadets who had higher self-efficacy tended to exhibit better social skills during their training. Self-efficacy also plays an important role in helping cadets cope with social pressure in highly dynamic work environments such as aviation. The aviation environment is often full of situations that require strong interpersonal skills, such as managing communication under pressure or working in teams that must complete critical tasks in a short period (Wang & Zhang, 2023).

Problem-solving skills have long been regarded as an important ability in various professions, including aviation. Aviation cadets, who often face emergencies and dynamic working conditions, are expected to have the ability to quickly analyze problems, make sound decisions, and implement effective solutions (Chen & Zhao, 2021). Aviation cadets often have to collaborate in teams to complete tasks or overcome challenges, where good problem-solving skills can help them play a more productive role in such social environments (Gonzalez et al., 2022). Cadets who are good problem solvers are better able to contribute positively in cooperative situations, reduce interpersonal tensions, and ensure that the team can work more efficiently.

Studies show that problem-solving skills have a direct impact on an individual's ability to function in teams and influence social dynamics in the work environment (Zhao & Chen, 2020). Furthermore, problem-solving skills also influence how cadets manage social conflict. In a dynamic workplace such as aviation, conflicts between individuals or between team members are inevitable, especially when pressure increases or there are differences of opinion regarding the best solution (Wang & Zhang, 2021).

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In aviation, self-efficacy plays an important role in shaping aviation cadets' belief in their ability to succeed during On-the-Job Training (OJT). High self-efficacy not only allows cadets to be more confident in facing technical tasks but also assists them in developing essential social skills through OJT experiences (Zhao & He, 2021). Therefore, the indirect influence of self-efficacy on social skills through OJT is an important aspect to understand to enhance the learning and development of aviation cadets. OJT is a key component in the training of aviation cadets, where they are placed in a real work environment to apply the knowledge acquired in the classroom and develop the skills needed in the aviation world (Chen et al., 2023).

Research shows that self-efficacy has a significant indirect influence on social skill development through practical work experience. For example, Zhao and He (2021) found that cadets with high levels of self-efficacy were better able to navigate challenges that arose during OJT, including social situations that required interpersonal skills. This ability is particularly important as social conflicts often arise in the stressful and dynamic aviation environment (Wang & Zhang, 2022).

In detail, the purpose of this research is to analyze: (1) the effect of Self-Efficacy on the OJT, (2) the effect of Problem-Solving Skills on the OJT, (3) the effect of Self- Efficacy on Social Skills, (4) the effect of Problem Solving Skills on Social Skills, (5) the effect of Self-Efficacy indirectly on Social Skills through On The Job Training, (6) the effect of Problem Solving Skills indirectly on Social Skills through On The Job Training in aviation cadets. This research is expected to provide a deeper understanding of how to design a more effective aviation training program so that cadets are not only skilled in technical aspects but also able to face social challenges in the dynamic and complex world of aviation work.

Materials and Methods

Self-efficacy

Self-efficacy (ED) has been an area of research of interest to psychologists, and sociologists in cognitive and noncognitive aspects of education. ED is generally defined as an individual's perception of self and perceptions are said to be formed through experiences with the environment, interactions with significant others, and attributes of his or her behavior (Ogbuanya & Chukwuedo, 2017). Joyce & Yates (2007) concluded that ED is a multidimensional construct, which has one general and several specific facets, one of which is academic Self-Efficacy. Another definition states ED is the core of human personality which refers to the totality of people's perceptions of their physical, social, and academic competence (Ebrahim Abd El Aziz Rady, 2016). This definition is referred to as a person's perception of self about school achievement. Learners' self-perceptions of academic ability or achievement will affect their academic achievement (Ebrahim Abd El Aziz Rady, 2016). Important people who build ED are parents, adults, peers, and self (Gilbert et al., 2022). ED can be classified into two main types namely positive ED and negative ED (Matovu, 2014). A positive ED means that the person is confident and sure of themselves, has good interests, is objective, and is not overly sensitive. This individual can accept criticism from others and may be able to express their views and opinions. On a different point, individuals who have negative ED are overly subjective. ED affects not only learners' academic performance but also their effort, engagement, and persistence in class activities; intrinsic motivation; help-seeking behavior, and course selection.

Most studies investigating the structure of ED have used Self-Description Questionnaires (SDQ). This questionnaire has good psychometric properties and has been cross-linguistically validated. As the SDQII (designed for adolescents) was considered too long (102 items), a shorter format was developed and named the Self-Description Questionnaires II - Short (SDQII-S) (Marsh et al., 2005)

Problem-Solving Skills

Khomokhoana & Nel (2021) identified four basic principles of problem-solving which include: (1) Understanding the problem. (2) Designing problem solving. (3) Carrying out problem planning. (4) Rechecking. Checking whether the results obtained follow the provisions and there is no contradiction with what is asked. Researchers agree that problem-solving is a goal-driven process that requires recognition of the nature of the problem, identification of an end state that implies success, creation of a strategy to get

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from the current state to the end state, execution of the strategy, and adaptation of strategy changes based on the difficulties encountered (Shanta & Wells, 2022). This implies that two different real-world problems cannot be solved using the same knowledge or the same process (Albay, 2019; Peteranetz et al., 2017; Wang, 2019). Developing an effective assessment of students' problem-solving skills requires knowledge of the processes involved in solving such problems (Aliu & Aigbavboa, 2021; Blázquez et al., 2018; Chigbu & Nekhwevha, 2022; Sokhanvar et al., 2021)

Social Skills

The development of social skills is essential for a future in community life and for reducing the risk of behavioral and emotional problems (Junge et al., 2020). The construct of social skills is a developmental construct: it emerges from meaningful interactions with a range of others in a variety of contexts. The construct of social skills has been debated and changed over time, but a unified model of how social skills emerge from infancy to adolescence still does not exist (van den Bedem et al., 2019). There are several reasons why a better understanding of social skills is needed. Firstly, indices of social skills from early childhood have been shown to predict later social skills. The Matthew effect influences social skills: for example, those who are competent at making friends early in life become more competent at forming friendships, while the less competent become increasingly incompetent at forming friendships (van der Wilt et al., 2019). To understand the complexity of the development of social skills, understanding how and when social skills become self-reinforcing throughout development is required. Therefore, researchers should begin to build and test more elaborate models of social skills that account for the interactions between development, the complexity of different foundational skills, and the diversity of social contexts that together shape social skills (Santos-Jaén et al., 2022)

The second reason why it is so important to develop a clearer picture of how social skills are is that social skills are malleable and open to intervention. However, optimizing interventions in childhood requires not only identifying which social skills are suitable targets, but also selecting the optimal period for administering those interventions, and should be tailored to the child's social skills stage (Matson, 2017). The third and final reason why it is important to develop a better picture of how social skills unfold is that children's social context ('where') has changed dramatically in the last two decades. One of the key changes is that most infants and toddlers in the West now have extensive experience with peers and other adults before entering school. In fact, unlike previous generations, most infants today are in some form of care away from their primary carers (Devine & Apperly, 2022). These difficulties are a direct effect of communication problems, but friendships and problems with empathy can also interact, causing children with developmental language disorder to gain less social understanding through their friendships (Blázquez et al., 2018).

On The Job Training (OJT)

The effectiveness of labor market policies has been widely debated in recent literature. However, there is no consensus on the impact of some types of policies, such as policies that support the implementation of training programs, as the effectiveness of this program is highly dependent on the time horizon over which the employment effects are measured. As summarized by (Ghirelli et al., 2019) in their meta-analysis, training programs show larger average effects in the medium and long term. This is also true for private sector incentive programs, and the reason lies behind the so-called lock-in effect.

OJT helps in shaping students to acquire professional work ethics (Na, 2021). The OJT program involves three parties; the OJT participants, the institution, and the reputable OJT organizing institution. OJT participants are expected to follow the OJT program guidelines, such as undergoing orientation before placement, meeting the number of hours to be completed, wearing uniforms, and following agency policies. Institutions are expected to ensure that host institutions fulfill the qualifications for reputable OJT host institutions to ensure the safety of students and the quality of OJT provided to them. The administrative efforts and functions of the host institution are critical in the OJT program (Ghirelli et al., 2019).

By adopting a negotiated interest approach in program planning, institutions can play several active roles in the planning of industrial activities and organizations (Daylamani-Zad et al., 2022; Thom & Wardhono,

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2018). HEIs can enhance their function in organizing and managing on-the-job training programs by strengthening partnerships with OJT providers. Students who participated in OJT in the workplace have shown improvement in their communication skills and demonstrated personal growth. In addition, learners experiencing real work scenarios will develop competencies and values to become efficient and effective professionals (Md Yusoff et al., 2021).

OJT program increases employability. Learners who perform well in the OJT program are often hired as employees after graduation. Most private entities prefer competent graduates, coachable, team players, responsible, result-orientated, and upholding the company. OJT is the responsibility of academic institutions to prepare a well-structured, comprehensive, relevant, and timely program to streamline internships (Sepasgozar, 2022).

Aviation Cadets Graduate Competence

The competencies of graduates of the Indonesian Aviation Cadets are divided into two competencies, namely main competencies and supporting competencies.

Key Competencies

Able to operate Airfield Lighting System (ALS), Constant Current Regulator (CCR), Aircraft Docking Guidance System (ADGS), Generator Set and Automatic Change Over Switch (GNS), Transmission and Distribution (TRD), Uninterruptable Power Supply and Solar Cell (PSS) equipment;

Able to maintain/care for Airfield Lighting System (ALS), Constant Current Regulator (CCR), Aircraft Docking Guidance System (ADGS), Generator Set and Automatic Change Over Switch (GNS), Transmission and Distribution (TRD), Uninterruptable Power Supply and Solar Cell (PSS) equipment;

Able to repair Airfield Lighting System (ALS), Constant Current Regulator (CCR), Aircraft Docking Guidance System (ADGS), Generator Set and Automatic Change Over Switch (GNS), Transmission and Distribution (TRD), Uninterruptable Power Supply and Solar Cell (PSS) equipment;

Able to analyze faults/damage and make repair steps for Airfield Lighting System (ALS), Constant Current Regulator (CCR), Aircraft Docking Guidance System (ADGS), Generator Set and Automatic Change Over Switch (GNS), Transmission and Distribution (TRD), Uninterruptable Power Supply and Solar Cell (PSS) equipment;

Able to plan/design the installation or change of Airfield Lighting System (ALS), Constant Current Regulator (CCR), Aircraft Docking Guidance System (ADGS), Generator Set and Automatic Change Over Switch (GNS), Transmission and Distribution (TRD), Uninterruptable Power Supply and Solar Cell (PSS) equipment systems;

Able to evaluate the performance of Airfield Lighting System (ALS), Constant Current Regulator (CCR), Aircraft Docking Guidance System (ADGS), Generator Set and Automatic Change Over Switch (GNS), Transmission and Distribution (TRD), Uninterruptable Power Supply and Solar Cell (PSS) equipment;

Supporting Competences

Supporting competencies include: Fearing God, being able to think critically, creatively, systematically, and scientifically, having a spirit of nationalism and democracy, having a good personality and character, and having a positive self-concept.

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Empirical Studies Relationship Between Variables

Relationship between Self-Efficacy and On-the-job Training

Self-efficacy, or an individual's belief in their ability to achieve certain goals, is a very important psychological factor in the context of learning and training. In aviation, where cadets are faced with various technical and non-technical challenges, self-efficacy plays a crucial role in determining the success of on-the-job training. High self-efficacy in aviation cadets can improve motivation, commitment, and learning outcomes so that they are better prepared to face various situations in the stressful world of work (Chukwuedo & Ementa, 2022). Furthermore, high self-efficacy in aviation cadets is also associated with their ability to face and overcome challenges that arise during training. When faced with difficult situations or complex tasks, cadets with high self-efficacy are more likely to stay motivated and persevere in finding solutions. They have confidence that they can overcome obstacles and achieve their goals. This reduces the likelihood of failure and increases success in tasks given during on-the-job training. In contrast, cadets with low self-efficacy may easily feel overwhelmed and less motivated, thus more prone to failure and discouragement (Coppe et al., 2021).

In addition, on-the-job training can also play a role in strengthening aviation cadets' self-efficacy. Successful experiences in completing training tasks, support from trainers, and positive feedback from colleagues can increase cadets' confidence in their own abilities. Well-designed training provides opportunities for cadets to achieve incremental success, which can strengthen their belief that they are capable of facing greater challenges in the future. Positive social interactions and opportunities to learn from more experienced peers also contribute to improving self-efficacy (Li et al., 2022).

Relationship of Problem-Solving Skills to On-the-Job Training

Problem-solving skills are one of the key competencies that are very important in aviation cadets' on-the-job training. These skills not only include the ability to diagnose problems and find solutions but also involve critical thinking processes, effective decision-making, and the ability to work collaboratively with colleagues. In an aviation environment that is often stressful and requires rapid response, problem-solving skills are essential to the success of cadets in their training.

Empirical research shows that aviation cadets with good problem-solving skills tend to be more successful in on-the-job training. They can identify problems quickly and find effective solutions, which allows them to complete tasks more efficiently and accurately. This ability is especially important in the aviation industry, where small mistakes can have a big impact on flight safety and operations. Cadets who are skilled in problem-solving are also better able to adapt to unexpected situations, which is an integral part of working in this sector (Halpern & Dunn, 2021). Strong problem-solving skills in aviation cadets also enhance their ability to work independently and in teams. When faced with a problem, cadets with these skills can analyze the situation, identify available options, and choose the most appropriate solution (Çetin, 2021). Group discussions and other collaborative activities provide opportunities for cadets to share ideas and strategies, which can enrich their repertoire in solving problems. By collaborating, cadets also learn to appreciate different perspectives and integrate various approaches in seeking solutions (Xing et al., 2022).

The Relationship of Self-Efficacy to Social Skills

Self-efficacy plays an important role in various aspects of life, including the development of social skills. In the context of aviation cadets, high self-efficacy can have a significant impact on their ability to interact effectively with peers, instructors, and other personnel. Empirical studies suggest that there is a close relationship between self-efficacy and social skills (Li et al., 2022), which is important to understand to improve the training effectiveness and performance of flight cadets.

Empirical research shows that aviation cadets with high self-efficacy tend to have better social skills. They are more confident in interacting with others, better able to cope with anxiety in social situations, and more effective in communication. This confidence allows them to more easily establish and maintain social

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relationships, which in turn can strengthen the social support they receive. In the often stressful environment of flight training, the ability to interact effectively with peers and instructors is critical to success.

Well-designed flight training can contribute to the improvement of cadets' self-efficacy and social skills. Training programs involving simulation of real situations, case studies, and constructive feedback from instructors can help cadets develop their confidence and social skills (Zhou et al., 2020). For example, through communication and teamwork exercises in flight scenarios, cadets can learn to overcome anxiety, communicate clearly, and work effectively in teams.

Relationship of Problem-Solving Skills to Social Skills

Problem-solving skills and social skills are two interconnected competencies that are particularly important in the context of aviation cadet training. Flight cadets are often faced with situations that require the ability to diagnose problems and find effective solutions while communicating and interacting with colleagues and instructors. Empirical studies suggest that good problem-solving skills can enhance social skills, as individuals who can cope well with problems also tend to be more effective in their social interactions (Matthys & Schutter, 2022).

Research shows that aviation cadets with good problem-solving skills tend to have stronger social skills. The ability to analyze situations, identify problems, and find appropriate solutions requires effective communication, cooperation, and the ability to work in teams. In the stressful aviation environment, cadets who can solve problems efficiently are also better able to maintain good relationships with their colleagues. They can communicate clearly about the problem at hand and the proposed solution, which strengthens team dynamics and enhances trust and cooperation.

In addition, good problem-solving skills help aviation cadets to cope with interpersonal conflicts more effectively. In many situations, conflicts arise as a result of unsolved problems or misunderstandings. Cadets who are skilled in problem-solving can identify the root cause of the conflict and work with the other party to find a win-win solution. This not only helps constructively resolve conflicts but also strengthens relationships between individuals and improves overall social skills (Linxiao Ma, 2007).

The Relationship of Self-Efficacy to Social Skills through On The Job Training

Self-efficacy is an important factor in the development of social skills, especially in the context of on-the-job training in aviation cadets. High self-efficacy allows cadets to be more confident in interacting with colleagues and instructors, and more effective in coping with challenging social situations. Empirical studies show that self-efficacy has a close relationship with social skills, which is reinforced through practical experience in the field (Coppe et al., 2021)

Research shows that aviation cadets with high self-efficacy tend to have better social skills. They are more confident in interacting with others, better able to cope with anxiety in social situations, and more effective in communication. This confidence allows them to more easily establish and maintain social relationships, which is especially important in the often stressful training environment. Cadets with high self-efficacy are more likely to take the initiative in communicating and collaborating with their peers, thus strengthening team dynamics and improving group performance.

On-the-job training plays an important role in strengthening the self-efficacy and social skills of aviation cadets. On-the-job training provides cadets with the opportunity to apply the knowledge and skills they have learned in real-life situations. Through this hands-on experience, cadets can see the results of their efforts, which can strengthen their belief in their own abilities.

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Problem-solving skills and social skills are two important competencies that are interrelated and indispensable in the context of on-the-job training for aviation cadets. Aviation cadets are not only required to master technical skills but must also be able to overcome various problems that arise during training. At the same time, they must interact effectively with colleagues and instructors. Empirical studies show that good problem-solving skills can improve the social skills of cadets through practical experience in the field (Fadiawati et al., 2020).

Research shows that aviation cadets with good problem-solving skills tend to have better social skills. Problem-solving skills include the ability to analyze situations, identify problems, and find appropriate solutions. This process often requires effective communication, cooperation, and the ability to work in teams. Cadets who are skilled in problem-solving can tackle challenges more efficiently and maintain good relationships with their co-workers. They can communicate clearly about the problems encountered and proposed solutions, which strengthens team dynamics. (Zhang et al., 2019).

On-the-job training plays an important role in strengthening the problem-solving skills and social skills of aviation cadets. On-the-job training provides an opportunity for cadets to apply the knowledge and skills they have learned in real situations. Through this hands-on experience, cadets can hone their problem-solving skills and simultaneously improve social skills (Sokhanvar et al., 2021). Positive interactions with instructors and peers during training also help strengthen social skills. When cadets feel supported and valued, they are more likely to actively engage in the training process and interact positively with others. Constructive feedback from instructors helps cadets understand their strengths and weaknesses, as well as ways to improve them (Taborsky, 2021).

Research Hypothesis

Based on the framework that has been described, the hypotheses proposed in this study are:

- H1: Self-efficacy (ED) has a positive significant effect to On the Job Training (OJT).
- H2: Problem-solving skills (KPM) have a positive Significant Effect to On the Job Training (OJT).
- H3: Self-efficacy (ED) has a positive Significant Effect on Social Skills (KS).
- H4: Problem-solving skills (KMP) have a positive Significant Effect on Social Skills (KS).
- H5: Self-efficacy (ED) has an indirect positive significant effect on social skills through On-the-Job Training (OJT).
- H6: Problem-solving skills (KPM) have a positive Significant Effect indirectly on Social Skills through On-the-Job Training (OJT).

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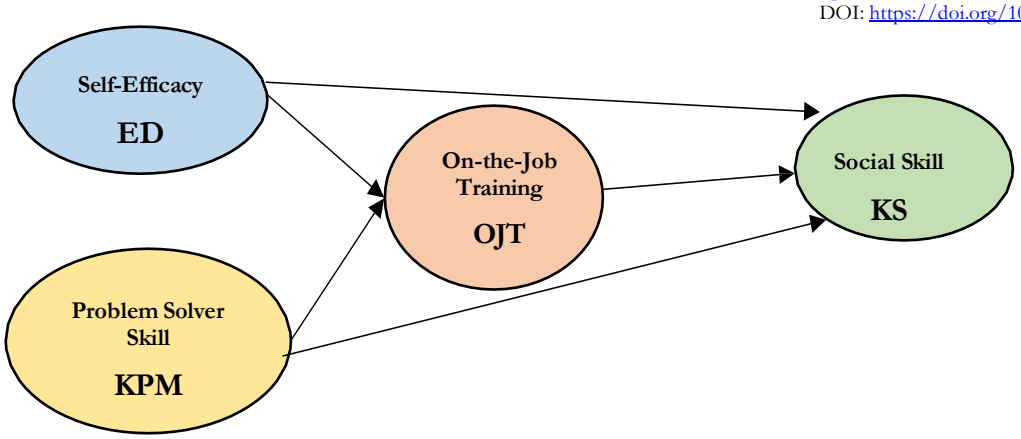

Figure 1. The Constellation of Relationships Between Variables

Research Methods

This research design includes ex-post facto research because researchers predict the effect of self-efficacy and problem-solving skills on academic achievement and social skills through Job Training. The stages for conducting ex-post facto research are: (1) determine the formulation of the problem; (2) review the literature; (3) formulate hypotheses; (4) design methods; (5) conduct feasibility tests; (6) analyze and evaluate the information collected. The population of the study was cadets of the Polytechnic/Aviation Academy of the Ministry of Transportation in the Airport Electrical Engineering Study Program. The number of samples in the study obtained based on the Slovin Formula with a margin of error of 5% is as follows:

$$s = \frac{N}{1 + Ne^2} = \frac{445}{1 + 445\ (0.05)^2} = 210{,}7$$

The sample used was 211 cadets. The research was conducted in the odd semester and even semester of 2022/2023 at PPI Curug, Surabaya Aviation Polytechnic, Medan Aviation Polytechnic, and Makassar Aviation Polytechnic. The data collection technique in this study was a questionnaire. The questionnaire was used to obtain data on the variables of Self-Efficacy (ED), Problem-Solving Skills (PMS), Social Skills (KS), and On-the-Job Training (OJT). The instruments developed for this study include: (1) content validation instrument for the questionnaire; (2) questionnaire instrument to obtain OJT data; (3) questionnaire instrument to measure ED; (4) questionnaire instrument to obtain KPM data; (5) questionnaire instrument to obtain KS data. The expert will assess the relevance, clarity, simplicity, and ambiguity of each instrument developed.

Result

Instrument Content Validity Results

Content validation of the instrument was carried out by five experts with areas of expertise displayed in Table 1. The validation instrument is structured based on a Likert scale of 1-4. Scale 1 means very bad, scale 2 means not good, scale 3 is good, and scale 4 is very good. The validator can provide necessary improvement suggestions for each item.

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Table 1. Areas of Expertise and Institutional Origin of Validators

No.	Areas of Expertise	Institution of Origin	Total
1	Vocational Education	Surabaya State University	3
2	Aeronautical Engineering	Surabaya Aviation Polytechnic	2
	Number of Validators		5

All instruments were subjected to content validation. All items on each instrument showed a CVR value of 1 (Table 2). This proves that each item on the instrument can be used to measure the construct in the study.

Table 2. CVR Value for Each Instrument

No.	Instrument	Number of items	CVR min value	Max CVR value
1	Self-efficacy	22	1	1
2	Problem-Solving Skills	15	1	1
3	Social Skills	35	1	1
4	OJT	25	1	1

Item-Total Correlation and Reliability

The results obtained were analyzed using Stata 15.0 software to obtain item-total correlation and reliability values. Item-total correlation and reliability for questionnaires were calculated using the Cronbach alpha formula while item-total correlation and reliability for tests were obtained using the KR20 formula. The results of the item-total correlation and reliability of the instrument trials are shown in Table 3. The results show that the reliability values for all tested instruments have exceeded the minimum limit of 0.6 but some items have item-total correlation values below the criteria.

Table 3. Results of Item-Total Correlation and Instrument Test Reliability

No.	Instrument	Number of items	Item-total correlation	Reliability	Number of items not meeting the criteria
1	Self-efficacy	22	0,2804 - 0,8082	0,9289	-
2	Problem-Solving Skills	15	0,2693 - 0,7611	0.9055	-
3	Social Skills	35	0,1591 - 0,9003	0,9505	25
4	OJT	25	0,2402 - 0,8943	0,9051	-

Fit-Item Analysis

Item-fit analyses were conducted on test and questionnaire instruments using the Rasch Model with the help of Conquest software. The useful values in item-fit analysis, namely the outfit value (unweighted MNSQ) and the infit value (weighted MNSQ) are 0.5 - 1.5. The results of the outfit and infit analyses for each instrument category are displayed in Table 4.

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Table 4. OMS and STI Results of the Instrument Pilot Test

No.	Instrument	Number of items	OMS	IMS	Number of items not meeting the criteria
1	Self-efficacy	22	0,45 - 1,40	0,46 - 1,76	5
2	Problem-Solving Skills	15	0,41 - 1,39	0,43 - 1,41	2
3	Social Skills	33	0,38 - 4,24	0,58 - 1,74	5,8
4	OJT	25	0,63 - 2,48	0,62 - 1,83	-

Based on the content validity test, item-total correlation and reliability, as well as item-fit analysis Table 5 was compiled for ease of concluding items to be retained and revised/discarded. From the results presented, there are no items that do not meet the criteria of CVR, item-total correlation, OMS, and IMS. Thus, it can be concluded that all items can be retained and used as research instruments.

Table 5. Results of Item-Total Correlations, OMS, And STI of the Pilot Test Instrument

No	Instrument	Item does not meet criteria					Conclusion
		No. item	CVR	Correlation of item-total	OMS	IMS	
1	Self-efficacy	5	1	0,5905	0,45	0,46	Maintained
2	Problem-Solving Skills	2	1	0,7611	0,41	0,43	Maintained
3	Social Skills	5	1	0,45	4,24	1,30	Maintained
		8	1	0,6788	0,38	0,33	Maintained
		25	1	0,1591	1,98	1,42	Maintained
4	OJT	-	-	-	-	-	-

Structural Equation Modeling Results

To decide which type of SEM analysis to use, a normality test was first conducted. The normality test used is Mardian multivariate skewness and kurtosis using Stata 14.0. Multivariate data is called normal if the p-value of skewness and kurtosis is greater than 0.05. The results of the Mardian multivariate skewness and kurtosis test are shown in Figure 2. From the test results, it appears that the p-value for Mardian skewness and kurtosis is 0.00 or less than 0.05. Thus, the SEM used for analysis is SEM PLS. The main software to assist the PLS-SEM analysis is SmartPLS 3.29.

```
Test for multivariate normality

    Mardia mSkewness =  18.62471    chi2(35) =  667.430   Prob>chi2 =  0.0000
    Mardia mKurtosis =  86.22043     chi2(1) = 1977.019   Prob>chi2 =  0.0000
    Henze-Zirkler    =  3.817581     chi2(1) =  414.067   Prob>chi2 =  0.0000
    Doornik-Hansen                  chi2(10) =  220.937   Prob>chi2 =  0.0000
```

Figure 2. Normality Test Results

Reflective Measurement Model

The reflective measurement model measures internal reliability and validity. The reflective measurement model is based on reliability and validity. For the reflective model, the relationship between the reflective

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latent variable and its indicators is measured through the outer loading value. The outer loading value of each construct with its indicators shows a number above 0.5 (Hair et al., 2017) as shown in Figure 3.

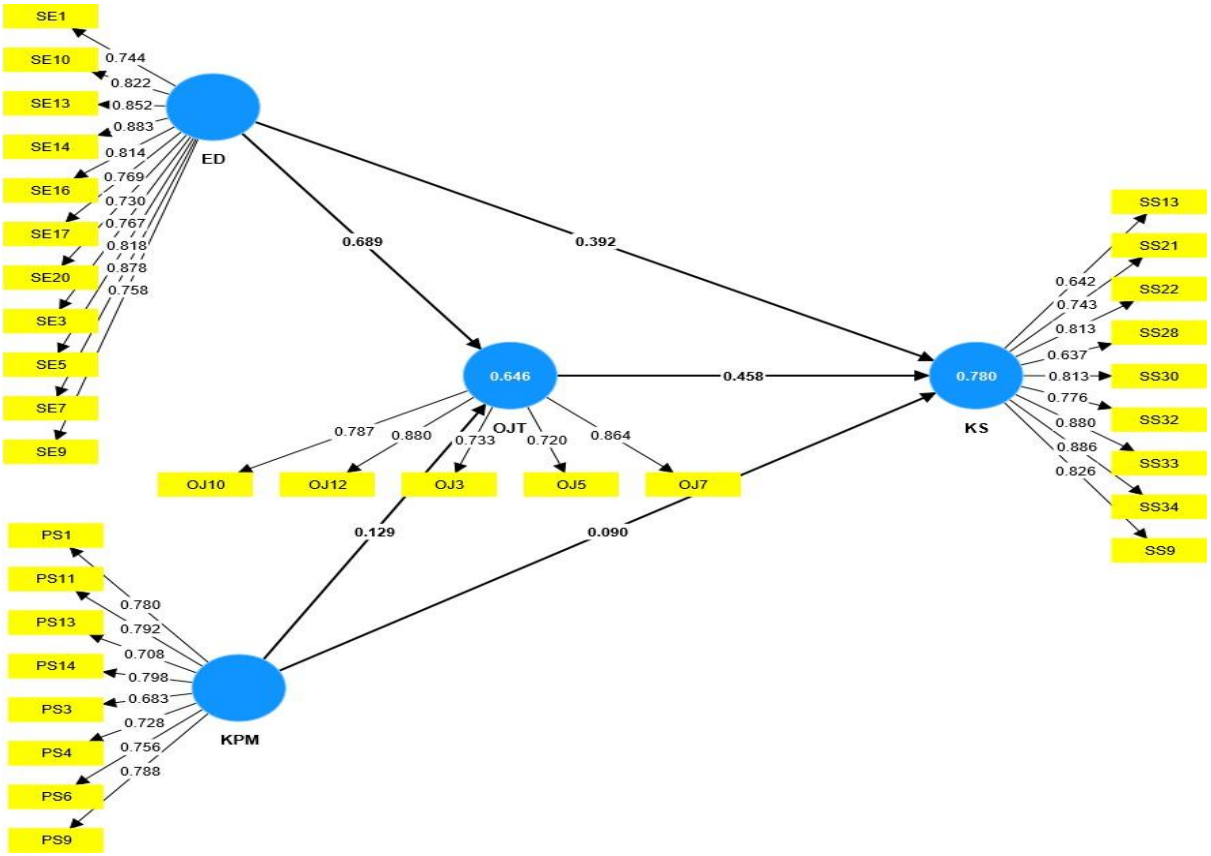

Figure 3. Outer Loading Value

The next evaluation is to check the internal consistency reliability, namely the value of Cronbach alpha, rho_A, and Composite reliability. The absolute correlation between a construct and each of its manifest variables must be greater than 0.7 (≈√0.5) (Hair et al., 2017). Cronbach alpha values lie between 0.830 - 0.945 or above the limit value of 0.7. The rho_A values of all constructs are above 0.7, namely in the range of 0.827 - 0.951. While the composite reliability value is in the range of 0.877 - 0.953, also above the value of 0.7. This means that all constructs have high internal consistency reliability values.

After checking the internal consistency reliability, the validity measurement is divided into two, namely convergent validity and discriminant validity. Convergent validity is measured through Average Variance Extracted (AVE). The AVE value for all constructs is in the range of 0.555 - 0.647. and all constructs get an AVE value> 0.5 so that they are considered to meet the valid criteria (Hair et al., 2017). Table 6. displayed the value of Cronbach alpha, rho_A, Composite reliability, and AVE.

Table 6. Results of Construct Reliability and Internal Consistency

No.	Instrument	Cronbach's Alpha	rho_A	Composite Reliability	AVE
1	ED	0.945	0.951	0.953	0.647
2	KPM	0.892	0.895	0.914	0.570
3	KS	0.920	0.930	0.934	0.615
4	OJT	0.830	0.881	0.877	0.555

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Discriminant validity indicates the uniqueness of a construct and is not represented by other constructs. Discriminant validity is done through the Fornell-Larcker Criterion analysis. Based on the Fornell-Larcker Criterion, the square root of the AVE for each construct must be higher than the highest correlation of the construct with other constructs in the model (Hair et al., 2017) Table 7. shows the results of measuring the Fornell-Larcker Criterion with the square root of the AVE of the constructs on the diagonal line and the correlation between the constructs in the off-diagonal position. The Fornell-Larcker Criterion value shows the square root of the AVE of each construct is higher than the highest correlation of the construct with other constructs.

Another measurement of discriminant validity can be done through cross-loading. Discriminant validity is achieved when the internal cross-loading of a construct is higher than the cross-loading value with other constructs. In addition to the Fornell-Larcker Criterion and cross-loading, discriminant validity can also be measured by Heterotrait-Monotrait (HTMT). The recommended HTMT value is 0.7 (Hair et al., 2017). Table 7. shows the HTMT value for each construct. The value is greater than 0.5.

Table 7. Fornell-Larcker Criterion Analysis Results

	ED	KPM	KS	OJT
ED	0.805			
KPM	0.869	0.755		
KS	0.836	0.763	0.784	
OJT	0.799	0.720	0.834	0.745

Table 8. Heterotrait-Monotrait Analysis Results

	ED	KPM	KS	OJT
ED				
KPM	0.944			
KS	0.888	0.835		
OJT	0.865	0.796	0.920	

Structural Model

The next analysis of Structural Equation Modeling results is structural measurement which consists of several stages, namely measuring the significance and relevance of the structural model relationship, measuring the level of R2, and measuring the effect of f2. The value of the structural model relationship (i.e. path coefficient) represents the relationship between constructs written in the hypothesis. The path coefficient has a standard value in the range of -1 and +1. A value close to +1 means a strong positive relationship (and vice versa for negative values) that is statistically significant (Hair et al., 2017). The R2 values of the endogenous variables are 0.780 and 0.646 respectively (Table 9). Both of these values are in the good category. In addition to evaluating the R2 values of the endogenous constructs, changes in the values were evaluated if certain exogenous constructs were removed from the model. This is necessary to evaluate whether the omitted constructs have a substantive influence on the endogenous constructs.

Table 9. Results of R2 Endogenous Constructs

Construct	R Square	R Square Adjusted
KS	0.780	0.776
OJT	0.646	0.642

In addition to evaluating the magnitude of the R(2)value as a criterion for predictive accuracy, the Stone-Geisser Q(2)value (Geisser, 1974; Stone, 1974) was also examined, where Q2 = 1 - (1- R2). This value is

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an indicator of the predictive power or predictive relevance of an out-of-sample model. When a PLS path model shows predictive relevance, the model accurately predicts the data that was not used in the model estimation. In structural models, a Q2 value greater than zero for a particular reflective endogenous latent variable indicates the predictive relevance of the path model for the dependent. Of the several models tested, the model in Figure is the best. This is evidenced by the Q2 value obtained. The Q2 value is considered very good if it is > 0.3 (Hair et al., 2017). Table 10 shows the Q2 values for the endogenous variables of computational thinking, creative thinking, and programming learning outcomes are 0.780 and 0.354, respectively.

Table 10. Q2 Results of Endogenous Constructs

Variable	Q
KS	0.780
OJT	0.354

The next evaluation is hypothesis testing between constructs through the path coefficient. The standard path coefficient value is in the range of -1 to +1. A value close to +1 means that it has a strong positive relationship (and vice versa for negative values) that is statistically significant. A coefficient value closer to 0 means that the relationship between constructs is very weak or insignificant. The results of the path coefficient analysis are visualized in Figure 4 and shown in Table 11.

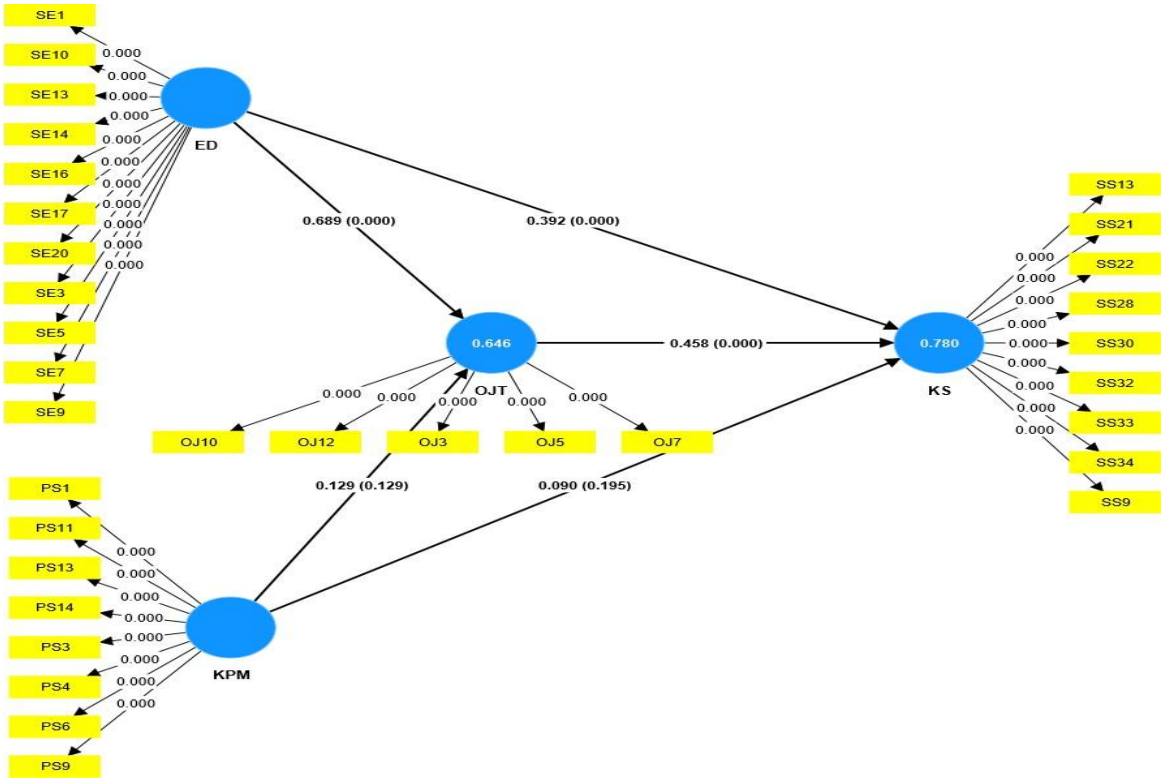

Figure 4. Path Coefficient

Table 11. Path Coefficient Analysis Results

Path Variable	Original Sample (O)	P Values
ED -> KS	0.392	0.000
ED -> OJT	0.689	0.000
KPM -> KS	0.090	0.000

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KPM -> OJT	0.129	0.000
KPM -> OJT -> KS	0.059	0.000
ED -> OJT -> KS	0.315	0.000

Table 12. Results of Analysis of Independent and Dependent Variables

Independent variable	Dependent variable	
	OJT	**Social Skills**
Self-efficacy	0.689	0.392
Problem-Solving Skills	0.129	0.090
OJT		0.458

The indirect effect of the mediation analysis results of OJT on Self-Efficacy and Social Skills is 0.689 x 0.458 = 0.315. The total effect of self-efficacy on social skills is the sum of direct and indirect effects, 0.392 + 0.315 = 0.707. The effect of the mediating variable is the ratio of the indirect and total effects as shown in the formula which is 0.445 which means that OJT is a very significant mediator in the relationship between self-efficacy and social skills.

$$RIT = \frac{0,315}{0,707} = 0,445$$

The indirect effect of the mediation analysis results of OJT on Problem Solving Skills and Social Skills is 0.129 x 0.458 = 0.059. The total effect of self-efficacy on social skills is the sum of direct and indirect effects, 0.09 + 0.059 = 0.149. The effect of the mediating variable is the ratio of the indirect and total effects as shown in the formula which is 0.395 which means that OJT is a very significant mediator in the relationship between Problem Solving Skills and Social Skills.

$$RIT = \frac{0,059}{0,149} = 0,395$$

Discussion

The Effect of Self-Efficacy to On-the-Job Training (OJT)

The results showed that ED has a significant positive effect on OJT. This finding is in line with the results of research from (Okolie, 2022). The social cognitive career theory model of career self-management (SCCT-CSM) model provides a framework for understanding how individuals can manage their career transitions and achieve career success. Thus, this research builds on the SCCT-CSM framework to study how and whether OJT can enhance students' readiness for work through underlying psychological mechanisms and contextual factors. The SCCT-CSM recognizes the core roles of self-efficacy, outcome expectations, goal or choice behaviors such as perceived employability, and contextual factors such as support. Within the SCCT-CSM framework, perceived employability is recognized as a choice-related goal or behavior and includes notions of individual career identity, career self-management, network building, and professional development. Previous research found that perceived employability influences job search behavior (Dacre Pool & Qualter,2012; Eimer & Bohndick, 2023; Gupta et al., 2023; Sokhanvar et al., 2021), so it is considered an important variable in individual readiness for work. Within the SCCT-CSM framework, self-efficacy can refer to students' beliefs in their ability to perform OJT tasks that can motivate their readiness for School to Work Transition (STWT). SCCT-CSM recognizes the positive role of contextual factors such as support in an individual's career transition, which may, directly and indirectly, reinforce self-efficacy, outcome expectations, and perceived employability leading to higher engagement in adaptive career behaviors such as readiness for work (Gupta et al., 2023).

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In line with the SCCT-CSM framework, cadets who perceive quality support from their assigned college and industry mentors in the form of quality work-related practices, advice, and information are more likely to consider engaging in behaviors that can motivate their readiness for work. The SCCT-CSM also recognizes learning experiences as a source of self-efficacy and outcome expectations that lead to adaptive career behaviors such as work readiness (Dacre Pool & Qualter, 2012). Discussion of these findings are:

- Increased Motivation and Participation: High self-efficacy increases cadets' motivation to actively participate in training. Research shows that self-efficacy plays an important role in increasing learning motivation and knowledge transfer during training. Cadets who have higher self-efficacy tend to engage more actively in training activities and seek new challenges (Newton, 2023).

- Ability to cope with challenges and stress: Research shows that cadets with high self-efficacy are better able to cope with stress and challenges during flight training. They are better able to manage stress and stay focused under pressure, which is crucial in the technically and emotionally challenging world of aviation (González et al., 2022).

- Improved Training Performance and Outcomes: Strong self-efficacy has been shown to have a positive relationship with training performance. Recent studies have shown that aviation cadets who believe in their abilities are more likely to be successful in practical and simulation tasks, which ultimately improves overall training outcomes (Lee & Park, 2020).

- More Effective Learning: Research reveals that self-efficacy facilitates more effective learning by enhancing an individual's ability to receive feedback and strive for continuous self-improvement. This proactive attitude towards learning allows cadets to master skills with more depth and meaning (Zhu & Thurlow, 2021).

- Improved Social and Collaboration Skills Aviation cadets with high self-efficacy show improvements in social and collaboration skills, as they are more likely to interact positively with colleagues and instructors. This also contributes to the creation of more harmonious and productive working relationships during training (Smith & Jones, 2021).

- Leadership Development: Strong self-efficacy is also linked to leadership potential. Research reveals that cadets who are confident in their abilities often take the initiative in group situations, demonstrating leadership abilities that are crucial in aviation (Zhao et al., 2021).

- Support for Safety Culture: Further research shows that aviation cadets with high self-efficacy are more likely to support a safety culture. They are more likely to report potential risks and adhere to safety procedures, thus creating a safer and more reliable working environment (Adjekum, 2020).

The Effect of Problem-Solving Skills to On-the-Job Training (OJT)

The results showed that KPM has a significant positive effect on OJT. This finding is in line with the investigation results from (Lee & Lee, 2020). Most experts refer to problem-solving as the cognitive-behavioral process of identifying a problem, transforming a problem into a goal state, and finding and applying alternative approaches to achieve that goal. Therefore, problem-solving skills are often considered to be closely related to creativity and convergent and divergent thinking. The role of emotions is much more complex than this. For example, negative emotions can motivate a person to solve problems. Anger is known to be associated with activating anger behavior helping one move towards achieving a goal (Tumpa et al., 2023). In terms of problem-solving styles, there are (a) rational problem-solving styles, (b) impulsive- careless styles, and (c) avoidance styles. Those with a rational style try to define and analyze the problem, set goals, and generate alternative solutions. Those with an impulsive-careless style also try to address the problem, but the efforts tend to be impulsive, rushed, and incomplete. Those with an avoidance style are likely to move away from the problem or procrastinate solving it (Wei & Sotiriadou, 2023). Theoretically, constructive problem-solving would involve a positive problem orientation and a rational

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problem-solving style, whereas dysfunctional problem-solving would involve a negative problem orientation and an impulsive-reckless or avoidance style. Therefore, an effective training program to develop problem-solving skills should be able to increase participants' constructive problem-solving skills and decrease dysfunctional problem-solving skills (Reinhold et al., 2020). The discussion of these findings is as follows:

- Increased Training Effectiveness: Flight cadets who have good problem-solving skills tend to utilize on-the-job training more effectively. They can quickly identify issues that arise during training and take appropriate action to address them. This allows them to learn faster and more efficiently, which in turn increases the overall effectiveness of the training program (Elysium HR, 2024).

- Better Adaptation to Real Situations: Strong problem-solving skills help cadets adapt to real situations that are often unexpected and complex. In the world of aviation, where every flight can bring new challenges, the ability to quickly analyze situations and find appropriate solutions is crucial. Cadets who are skilled in problem-solving are better able to navigate these situations with confidence, which improves their performance in operational tasks (Airsight, 2024).

- Enhanced Team Collaboration: Problem-solving often involves teamwork. Flight cadets who can solve problems effectively also tend to have good social skills, which are necessary for co-operating with their peers. They can communicate clearly, listen to others' perspectives, and work together to find optimal solutions. This strengthens team dynamics and improves collective performance (Xu, 2024).

- Development of Creativity and Innovation: The problem-solving process encourages cadets to think creatively and innovatively. When faced with a complex problem, cadets skilled in problem-solving will seek solutions that may be unconventional or novel. This creativity and innovation is particularly important in the industry which is always evolving and requires new approaches to deal with emerging challenges (Airsight, 2024).

- Improved Leadership Skills: Cadets who have good problem-solving skills often stand out as natural leaders in group situations. Their ability to identify and address problems earns them the respect of their peers. This can enhance their leadership abilities and prepare them for more senior roles in the future. Effective leadership is especially important in aviation, where quick and precise decisions are often required (Elysium HR, 2024).

- Increased Confidence and Independence: The ability to solve problems effectively increases cadets' self-confidence. They feel more capable and prepared to face challenges that may arise during training and in the future. This confidence makes them more independent and proactive in managing their tasks, which improves overall individual and group performance (Airsight, 2024).

- Support for Safety Culture: Effective problem-solving also contributes to a stronger safety culture. Cadets skilled in problem-solving are more likely to identify potential risks and take proactive measures to prevent incidents. This helps to create a safer and more reliable working environment, which is crucial in the aviation industry (Xu, 2024).

The Effect of Self-Efficacy on Social Skills

Self-efficacy is one of the fundamental concepts of social learning theory and is expressed as "perceived self-efficacy". Perceived self-efficacy; is an individual's evaluation of how well they can organize and realize their abilities. In other words, a person's judgments and beliefs about themselves and how successful they can be in difficult situations. Self-efficacy consists of personal decisions to perform certain activities rather than individual qualities such as physical or psychological characteristics (Juh et al., 2021). Self-efficacy is a fundamental psychological factor that influences achievement, academic motivation, success, and future

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career choices. Individual self-efficacy contributes significantly to academic competence and has a direct impact on cognitive development. On the other hand, academic competence is an individual's belief that they will successfully perform a specific academic performance. Individuals with high self-efficacy; develop more effective strategies for coping with complex events, problem-solving, self-confidence, and academic success. Researchers argue that self-efficacy is an influential factor in successful performance (Greco et al., 2022). At the same time, self-efficacy also affects individual behavior. Students with low self-efficacy may hesitate to participate in certain activities and may switch to activities that they think can result in better performance. In contrast, self-efficacy has a positive effect on learning because self-efficacy is an intra-individual factor that affects learning and school success (Capron Puozzo & Audrin, 2021). Social skills are the set of behaviors required to interact and relate to others effectively and satisfactorily. They serve to demonstrate the capacity to behave in ways that lead to rewards and to avoid behaving in ways that imply punishment or being ignored by others. (Adebusuyi et al., 2022). This process begins in childhood and fundamentally develops in adolescence to provide people in adulthood with communication and relationship tools to fulfill the need to build positive social relationships as a source of personal satisfaction and well-being (Salavera et al., 2017).

Rooted in vocational psychology, Social Cognitive Career Theory (SCCT) aims to provide a unifying framework to explain the experiential and cognitive processes that determine individuals' career choices (Adebusuyi et al., 2022). Outcome expectations can be physical, social, or self-evaluated. Purpose is defined as a person's determination or ability to engage in specific activities or behaviors to affect specific future outcomes (Granziera & Perera, 2019). Discussion of these findings are:

- Increased Confidence in Social Interaction: Flight cadets with high self-efficacy tend to be more confident in interacting with others. They feel confident in their ability to communicate effectively, build relationships, and collaborate with colleagues and instructors. This confidence facilitates smoother and more productive interactions, which is especially important in an aviation environment that requires close teamwork and clear communication (Horton & Casebolt, 2022).

- Ability to Cope with Anxiety in Social Situations: High self-efficacy helps cadets overcome anxiety or discomfort in social situations. They are better able to face and manage stress that may arise when having to interact with new people or in challenging situations. This ability allows cadets to remain calm and focused, which improves the quality of their social interactions and helps them build stronger and more positive relationships (Zorowitz et al., 2020).

- Increased Engagement in Collaborative Activities: Cadets with high self-efficacy are more likely to be actively involved in collaborative activities. They feel capable of contributing effectively to the team and do not hesitate to share ideas and take an active role in group discussions and projects. This active engagement not only improves team performance but also strengthens cadets' social skills through practical experience in cooperating and communicating with others (Christian et al., 2021).

- Development of Better Communication Skills: High self-efficacy contributes to the development of better communication skills. Cadets who are confident in their abilities tend to be more open in speaking, listening, and giving feedback. They can express themselves more clearly and effectively, which is especially important in the aviation industry where timely and accurate communication is key to safety and operational efficiency (Bandura & Adam, 2020).

- Ability to Resolve Conflict More Effectively: High self-efficacy also affects cadets' ability to cope with conflict constructively. They feel confident in their ability to resolve disputes and find win-win solutions. This ability is particularly important in an often demanding work environment, where conflicts can arise due to high pressure and responsibility. Cadets who are skilled in managing conflict can help maintain team harmony and create a more positive work environment (Sparks & Alamer, 2022).

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- Improved Leadership and Positive Influence: Cadets with high self-efficacy often exhibit stronger leadership abilities. They are more likely to take initiative, motivate their peers, and set a good example in various situations. This positive influence can improve overall team morale and performance, as well as prepare cadets for future leadership roles (Zhao et al., 2021).

- Support for a Culture of Safety and Professionalism: High self-efficacy also contributes to stronger support for a culture of safety and professionalism in the aviation work environment. Confident cadets are more likely to strictly follow safety procedures, report potential risks, and encourage their peers to do the same. This helps create a safer and more reliable work environment, which is crucial in the aviation industry (Zorowitz et al., 2020).

The Effect of Problem-Solving Skills on Social Skills

The results showed that KPS had a significant positive effect on social skills. Problem-solving is described as the formulation of new solutions in response to a problem. Critical thinking, on the other hand, is a cognitive process that questions the information that exists in one's mind map and allows for the restructuring of that information. Problem solving is a complex process and individuals need to have critical thinking skills to be able to develop different solutions. In the literature, critical thinking skills influence problem-solving skills, with a positive correlation between the two variables (Kocak et al., 2021). Algorithmic thinking, cooperation, effective communication, creativity, critical thinking, digital literacy, and problem-solving skills are core skills that students need to develop (Kazemi et al., 2020). Communication skills are prioritized in professional life. Based on social interaction, they form the foundation of cooperative and other 21st-century skills (Arsenis et al., 2021). Co-operative is one of the essential skills in today's business world. As workloads increase rapidly, individuals are expected to work as part of a group or team. This is because it is crucial for individuals who come together in line with a common goal to fulfill the requirements of working together (e.g., respect, motivational support, and assistance). In addition, cooperation in uncovering other skills is also required (Anistyasari et al., 2020). According to Matthys & Schutter (2022) describe a conceptual model of problem-solving. The term problem refers to a specific situation that a person must respond to to function effectively in their environment. Based on several theorists and researchers, the problem-solving process is divided into five general stages: (1) general orientation, (2) problem definition and formulation, (3) generation of alternatives, (4) decision-making, and (5) verification. The discussion of these findings is as follows:

- Improved Collaboration Skills: Strong problem-solving skills often require effective teamwork and collaboration. Flight cadets who are skilled at problem-solving tend to be better able to cooperate with colleagues to find the best solutions. They can communicate, listen to others' perspectives, and contribute to group discussions. This collaboration strengthens social relationships and enhances cadets' ability to work in teams, which is crucial in an aviation environment (Feybesse et al., 2023; Heckman & Kautz, 2020).

- Communication Skill Development: The problem-solving process requires effective communication. Cadets who are skilled in analyzing problems and finding solutions must be able to explain their ideas clearly and listen to input from others. These good communication skills help them build stronger relationships with colleagues and instructors, as well as ensure that the proposed solutions can be understood and accepted by all parties involved (Feybesse et al., 2023).

- Conflict Management Skills: Conflicts often arise in situations where there are issues that need to be resolved. Flight cadets with good problem-solving skills are better able to manage conflict constructively. They can identify the root causes of conflict, understand the perspectives of all parties involved, and work together to find win-win solutions. This ability helps to create a more harmonious and productive work environment (Fiore et al., 2017; Heckman & Kautz, 2020).

- Increased Confidence and Initiative: Strong problem-solving skills increase cadets' confidence in their ability to overcome challenges. This confidence makes them more willing to take initiative in

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social situations, such as leading group discussions or making suggestions in team meetings. This confidence and initiative are important components of effective social skills and help cadets become more influential and respected team members (Feybesse et al., 2023).

- Development of Empathy and Understanding: The process of problem-solving often involves a deep understanding of the problems faced by others. Cadets skilled in problem-solving learn to see situations from the perspective of others and develop empathy. This empathy strengthens their social relationships as they are more able to understand and respond to the needs and concerns of their colleagues in an understanding and supportive manner (Feybesse et al., 2023).

- Improved Adaptability: Good problem-solving skills also improve cadets' ability to adapt to diverse social situations. They learn to be flexible in their approach, try different strategies, and adjust to the needs of different situations. This adaptability is especially important in the dynamic and often changing aviation environment (Feybesse et al., 2023).

- Support for Positive Work Culture: Cadets who are skilled in problem-solving tend to contribute to a more positive work culture. They bring a proactive attitude and constructive solutions to the team, which helps to keep motivation and morale high. This positive work culture not only improves team performance but also strengthens social relationships in the workplace, creating a more pleasant and supportive environment for all team members (Feybesse et al., 2023).

The Effect of Self-Efficacy on Social Skills through On-the-Job Training (OJT)

The results showed that ED has a significant positive indirect effect on Social Skills through OJT. Previous research (Chukwuedo & Ementa, 2022) found a positive relationship between WPL and perceived employability. The positive association may be related to students' openness to learning new job-relevant skills and knowledge in a real-world work environment. OJT is traditionally considered a unique learning scenario for the development of technical and professional competencies (Mele et al., 2021). In this context, the transfer of theoretical and practical knowledge has been one of the main challenges. However, OJT does not only address competence or technical learning issues. The study of learning processes in the context of curricular practice has revealed various processes that support learning. The latter are understood as affective-cognitive functions that cannot be separated from the relationships in which they take place.

OJT as a socio-cultural activity, consists of relational dynamics that support the learning process it undertakes, i.e. the trainee's meaning-making process, relationships with others, and its impact on the level of identity. This causes us to consider the learning process integrally, relying on other explanatory models that allow the trainee's experience to be understood. In recent years, the transition between university and the world of work has been regarded as a boundary-crossing. This paradigm encourages us to view curricular practice as a process of transition or boundary crossing between two different worlds: academic and professional spaces (Mele et al., 2021)

The idea of a border between academic and professional spaces has important implications for OJT. Borders are "in-between" structures that unite and separate parts of the same whole. It creates a specific border zone, between spaces, social environments, or, as in our case, educational contexts (Ripamonti et al., 2018). Discussion based on the above findings:

- Increased Confidence in Practical Situations: On-the-job training allows aviation cadets to apply their knowledge and skills in real situations. High self-efficacy makes cadets more confident in dealing with these practical tasks. This confidence facilitates more effective interactions with colleagues and instructors, as cadets feel more comfortable and able to communicate their ideas and needs. These positive interactions, in turn, improve cadets' social skills.

- Learning through Social Interaction: During On-The-Job Training, flight cadets interact intensively with their peers and instructors. High self-efficacy encourages cadets to be more proactive in

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communicating and collaborating. They are more likely to ask questions, seek feedback, and engage in constructive discussions. These interactions allow cadets to learn and hone their social skills in a supportive and practical context.

- Ability to Overcome Challenges and Conflicts: High self-efficacy helps cadets to more effectively cope with challenges and conflicts that may arise during training. When faced with problems or difficult situations, confident cadets are more likely to remain calm and seek solutions constructively. This ability to manage stress and conflict is not only important for training success but also strengthens their social skills, such as the ability to negotiate and resolve disputes.

- Increased Motivation and Participation: High self-efficacy increases cadets' motivation to actively participate in training activities. They are more likely to take the initiative, seek opportunities to learn and engage in various aspects of training. This motivation and participation allow cadets to develop and strengthen their social skills through practical experience and diverse interactions with peers and instructors.

- Leadership Skill Development: On-the-job training often provides opportunities for cadets to take on leadership roles in specific group tasks or projects. High self-efficacy makes cadets more emboldened to lead and influence their peers. These leadership skills include the ability to communicate, motivate a team, and make effective decisions, all of which are important aspects of strong social skills.

- Feedback and Self-Development: During On-the-Job Training, cadets receive direct feedback from instructors and peers. High self-efficacy makes cadets more open to this feedback and more determined to improve themselves. This process of reflection and self-development helps cadets understand their strengths and weaknesses in social interactions so that they can continuously improve their social skills.

- Culture of Safety and Professionalism: High self-efficacy also contributes to a better culture of safety and professionalism in the flight training environment. Confident cadets are more likely to strictly follow safety procedures, report problems or risks, and encourage their peers to do the same. This professional attitude creates a safer and more supportive work environment, which also strengthens social relationships and effective teamwork.

The Effect of Problem-Solving Skills on Social Skills through On-the-Job Training (OJT).

The results showed that KPM has a significant positive indirect effect on Social Skills through OJT. Analysis based on a study of engineering student learning conducted by (Ripamonti et al., 2018) shows that university graduates have not necessarily developed the skills demanded by companies. In addition, university graduates must be prepared to work with individuals with different cultural backgrounds. Nonetheless, there are many types of non-technical skills required in many engineering work environments; problem-solving skills remain the most required skills by employers (Inderanata & Sukardi, 2023). The company practices many techniques and programs to ensure engineering students take the initiative to strengthen their problem-solving skills. The problems that arise in the workplace and the classroom are very different. In conclusion, learning to solve problems in the classroom does not necessarily develop problem-solving skills in the workplace (Chigbu & Nekhwevha, 2022). Employers place a high priority on problem-solving skills because finding solutions promptly avoids time wastage, productivity wastage, and unnecessary cost wastage (Kocak et al., 2021). Human error in the workplace is one of the key factors that cause problems in engineering environments. Errors or problems can be categorized as systematic and random errors. Both problems are mainly caused by human error or carelessness at the design, installation, manufacture, and maintenance stages of a product. Human errors can be categorized into six categories: (1) process errors; (2) production errors; (3) design errors; (4) inspection errors; (5) installation errors; and (6) maintenance errors (Subramaniam et al., 2020). Discussions based on these findings include:

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- Increased Confidence in Social Interaction: The Job Training gives aviation cadets the opportunity to face and solve problems in real situations. When cadets can overcome these challenges, they gain greater confidence in their abilities. This confidence is then reflected in their social interactions, where they feel more confident in communicating and collaborating with colleagues and instructors. The ability to solve problems provides a sense of accomplishment that increases cadets' social confidence (Bergman et al., 2021).

- Development of Effective Communication Skills: The problem-solving process often involves discussion and collaboration with others. In On-the-Job Training, cadets are exposed to situations where they have to communicate effectively to analyze problems and propose solutions. This forces them to hone their communication skills, such as active listening, articulating ideas clearly, and giving and receiving constructive feedback. These developed communication skills strengthen their overall social abilities (Sürücü et al., 2022).

- Ability to Work in a Team: Problem-solving in an aviation context often requires teamwork. Cadets skilled in problem-solving learn to collaborate with their peers, value the contributions of each team member, and integrate multiple perspectives to find the best solution. This experience teaches them the importance of cooperation and synergy within a team, which are essential components of social skills (Sürücü et al., 2022).

- Development of Empathy and Understanding: When cadets work together to solve problems, they often have to understand the viewpoints and feelings of their peers. This process develops empathy and understanding, as they learn to see the situation from the other person's perspective. This empathy not only helps in solving problems but also strengthens social relationships and teamwork, as cadets become more sensitive to the needs and concerns of their colleagues (Sürücü et al., 2022).

- Ability to Deal with Conflict Constructively: Problem-solving situations often involve differences of opinion that can lead to conflict. Cadets skilled in problem solving learn to address these conflicts constructively, by seeking win-win solutions and maintaining positive working relationships. This ability is particularly important in dynamic and stressful work environments, where the ability to manage conflict well can improve efficiency and team harmony (Bergman et al., 2021).

- Increased Adaptability and Flexibility: Challenging On-the-Job Training forces cadets to become more adaptive and flexible in their approach to problems. When they are faced with unexpected situations, the ability to adjust strategies and stay calm is crucial. This adaptability and flexibility not only help in problem-solving but also in social interactions, where the ability to adjust to different group dynamics is key to success (Sürücü et al., 2022).

- Improved Leadership and Positive Influence: Cadets who are successful in problem-solving often exhibit stronger leadership abilities. They become role models for their peers and are able to motivate and direct the team toward problem-solving. This effective leadership strengthens their social skills, as they learn to inspire and influence others in a positive way (Sürücü et al., 2022).

Conclusions

Based on the results of data analysis that has been collected and the results of the tests carried out, the conclusions of this study are obtained, namely that: (1) Self-efficacy has a significant positive effect to On-the-Job Training (OJT) for cadets of Airport Electrical Engineering study program at Aviation Polytechnic, (2) Problem Solving Skills has a significant positive effect to On-the-Job Training (OJT) for cadets of Airport Electrical Engineering study program at Aviation Polytechnic, (3) Self-efficacy has a significant positive effect on Social Skills for cadets of Airport Electrical Engineering study program at Aviation Polytechnic, (4) Problem Solving Skills has a significant positive effect on Social Skills for cadets of the Airport Electrical Engineering study program at the Aviation Polytechnic, (5) Self-efficacy has a significant

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positive indirect effect on Social Skills through On The Job Training for cadets of the Airport Electrical Engineering study program at the Aviation Polytechnic, (6) Problem Solving Skills has a significant positive indirect effect on Social Skills through On The Job Training for cadets study program at the Aviation Polytechnic.

Future Work

This research has taken sample data from cadets in the Airport Electrical Engineering Study program of the Indonesian Aviation Polytechnic. Furthermore, this research can be developed for data collection in various other study programs so that better results are possible. Further research can develop test instruments or observation instruments to test Problem-Solving Skills. Improving the soft skills of cadets on campus through the implementation of a planned, evaluated, and sustainable Character Development curriculum.

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References

Adebusuyi, A. S., Adebusuyi, O. F., & Kolade, O. (2022). Development and validation of sources of entrepreneurial self-efficacy and outcome expectations: A social cognitive career theory perspective. The International Journal of Management Education, 20(2), 100572. https://doi.org/10.1016/J.IJME.2021.100572

Albay, E. M. (2019). Analyzing the effects of the problem solving approach to the performance and attitude of first year university students. Social Sciences & Humanities Open, 1(1), 100006. https://doi.org/10.1016/J.SSAHO.2019.100006

Aliu, J., & Aigbavboa, C. (2021). Reviewing Problem-Solving as a Key Employability Skill for Built Environment Graduates. Advances in Science, Technology and Innovation, 399–403. https://doi.org/10.1007/978-3-030-48465-1_67

Arsenis, P., Flores, M., & Petropoulou, D. (2021). Enhancing graduate employability skills and student engagement through group video assessment. Assessment & Evaluation in Higher Education, 47(2), 245–258. https://doi.org/10.1080/02602938.2021.1897086

Blázquez, M., Herrarte, A., & Llorente-Heras, R. (2018). Competencies, occupational status, and earnings among European university graduates. Economics of Education Review, 62, 16–34. https://doi.org/10.1016/j.econedurev.2017.10.006

Breuer, S., Ortner, T. M., Gruber, F. M., Hofstetter, D., & Scherndl, T. (2023). Aviation and personality: Do measures of personality predict pilot training success? Updated meta-analyses. Personality and Individual Differences, 202(November 2022), 111918. https://doi.org/10.1016/j.paid.2022.111918

Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2016). Prosocial Foundations of Children's Academic Achievement. Psychological Science, 11(4), 302–306. https://doi.org/10.1111/1467-9280.00260

Capron Puozzo, I., & Audrin, C. (2021). Improving self-efficacy and creative self-efficacy to foster creativity and learning in schools. Thinking Skills and Creativity, 42, 100966. https://doi.org/10.1016/J.TSC.2021.100966

Cassidy, T. (2010). Problem-solving style, achievement motivation, psychological distress and response to a simulated emergency. Counselling Psychology Quarterly , 15(4), 325–332. https://doi.org/10.1080/0951507021000029658

Çetin, E. (2021). Digital storytelling in teacher education and its effect on the digital literacy of pre-service teachers. Thinking Skills and Creativity, 39(October 2020), 100760. https://doi.org/10.1016/j.tsc.2020.100760

Chigbu, B. I., & Nekhwevha, F. H. (2022). Academic-faculty environment and graduate employability: variation of work-readiness perceptions. Heliyon, 8(3), e09117. https://doi.org/10.1016/j.heliyon.2022.e09117

Choi, B. Y., Kim, B., Jang, S. H., Jung, S. H., Ahn, S. S., Lee, S. M., & Gysbers, N. (2013). An individual's work values in career development. Journal of Employment Counseling, 50(4), 154–165. https://doi.org/10.1002/J.2161-1920.2013.00034.X

Chukwuedo, S. O., & Ementa, C. N. (2022). Students' work placement learning and employability nexus: Reflections from experiential learning and social cognitive career theories. Industry and Higher Education, 36(6), 742–755. https://doi.org/10.1177/09504222221099198

Coppe, T., März, V., Coertjens, L., & Raemdonck, I. (2021). Transitioning into TVET schools: An exploration of second career teachers' entry profiles. Teaching and Teacher Education, 101, 103317. https://doi.org/10.1016/J.TATE.2021.103317

Dacre Pool, L., & Qualter, P. (2012). Improving emotional intelligence and emotional self-efficacy through a teaching intervention for university students. Learning and Individual Differences, 22(3), 306–312. https://doi.org/10.1016/J.LINDIF.2012.01.010

Daylamani-Zad, D., Spyridonis, F., & Al-Khafaaji, K. (2022). A framework and serious game for decision making in stressful situations; a fire evacuation scenario. International Journal of Human-Computer Studies, 162, 102790. https://doi.org/10.1016/J.IJHCS.2022.102790

Devine, R. T., & Apperly, I. A. (2022). Willing and able? Theory of mind, social motivation, and social competence in middle childhood and early adolescence. Developmental Science, 25(1), e13137. https://doi.org/10.1111/DESC.13137

Diaz-Garolera, G., Pallisera, M., & Fullana, J. (2019). Developing social skills to empower friendships: design and assessment of a social skills training programme. International Journal of Inclusive Education , 26(1), 1–15. https://doi.org/10.1080/13603116.2019.1625564

Ebrahim Abd El Aziz Rady, H. (2016). Relationship between Academic Self-Concept and Students' Performance among School Age Children. American Journal of Nursing Science, 5(6), 295. https://doi.org/10.11648/j.ajns.20160506.19

Eimer, A., & Bohndick, C. (2023). Employability models for higher education: A systematic literature review and analysis. Social Sciences & Humanities Open, 8(1), 100588. https://doi.org/10.1016/J.SSAHO.2023.100588

Emmanuel, A., & Clow, S. E. (2017). A questionnaire for assessing breastfeeding intentions and practices in Nigeria: Validity, reliability and translation. BMC Pregnancy and Childbirth, 17(1), 1–7. https://doi.org/10.1186/s12884-017-1366-9

Fadiawati, N., Diawati, C., & Syamsuri, M. M. F. (2020). Using problem-based learning to improve students⇔ critical thinking skills to deal hoax information in chemistry. Periodico Tche Quimica, 17(35), 120–134.

Ghirelli, C., Havari, E., Santangelo, G., & Scettri, M. (2019). Does on-the-job training help graduates find a job? Evidence from an Italian region. International Journal of Manpower, 40(3), 500–524. https://doi.org/10.1108/IJM-02-2018-0062/FULL/PDF

Gilbert, G., Turner, M., & Haass, O. (2022). Working up to work: Perceived employability of students commencing a project management degree. Project Leadership and Society, 3(April), 100048. https://doi.org/10.1016/j.plas.2022.100048

Granziera, H., & Perera, H. N. (2019). Relations among teachers' self-efficacy beliefs, engagement, and work satisfaction: A social cognitive view. Contemporary Educational Psychology, 58, 75–84. https://doi.org/10.1016/J.CEDPSYCH.2019.02.003

Greco, A., Annovazzi, C., Palena, N., Camussi, E., Rossi, G., & Steca, P. (2022). Self-Efficacy Beliefs of University Students: Examining Factor Validity and Measurement Invariance of the New Academic Self-Efficacy Scale. Frontiers in Psychology, 12(January), 1–14. https://doi.org/10.3389/fpsyg.2021.498824

Gupta, P., Datta, A., & Kothe, S. (2023). Developing employability skills in vulnerable youth: Designing logic model framework and outcome evaluation using quasi-experiment. World Development Sustainability, 2, 100045. https://doi.org/10.1016/J.WDS.2023.100045

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Thousand Oaks. In Sage.

Halpern, D. F., & Dunn, D. S. (2021). Critical Thinking: A Model of Intelligence for Solving Real-World Problems. Journal of Intelligence 2021, Vol. 9, Page 22, 9(2), 22. https://doi.org/10.3390/JINTELLIGENCE9020022

Heppner, P. P., Heppner, M. J., Wang, Y.-W., & Lee, D.-G. (2019). Creating a positive life: The role of problem-solving appraisal. Positive psychological assessment: A handbook of models and measures (2nd ed.)., 111–124. https://doi.org/10.1037/0000138-008

Inderanata, R. N., & Sukardi, T. (2023). Investigation study of integrated vocational guidance on work readiness of mechanical engineering vocational school students. Heliyon, 9(2), e13333. https://doi.org/10.1016/J.HELIYON.2023.E13333

Joyce, T. B. Y., & Yates, S. M. (2007). A rasch analysis of the academic self-concept questionnaire. International Education Journal, 8(2), 470–484.

Juh, C.-C., Lu, C.-C., & Hong, J.-C. (2021). A Study of the Relationship among Self-efficacy, Cognitive Load, Failure Attribution and Intention of Continue Participation in the "Insect Garden VR Game." International Journal of Information and Education Technology, 11(11), 498–503. https://doi.org/10.18178/IJIET.2021.11.11.1556

Junge, C., Valkenburg, P. M., Deković, M., & Branje, S. (2020). The building blocks of social competence: Contributions of the Consortium of Individual Development. Developmental Cognitive Neuroscience, 45, 100861. https://doi.org/10.1016/J.DCN.2020.100861

Kazemi, S., Ashraf, H., Motallebzadeh, K., & Zeraatpishe, M. (2020). Development and validation of a null curriculum questionnaire focusing on 21st century skills using the Rasch model. Cogent Education, 7(1), 1736849. https://doi.org/10.1080/2331186X.2020.1736849

Khomokhoana, P. J., & Nel, L. (2021). Mapping the Problem-Solving Strategies of Novice Programmers to Polya's Framework: SWOT Analysis as a Bottleneck Identification Tool. 132–148. https://doi.org/10.1007/978-3-030-95003-3_9

Kline, T. J. B. (2005). Psychological Testing: A Practical Approach to Design and Evaluation. Sage Publications Ltd.

Kocak, O., Coban, M., Aydin, A., & Cakmak, N. (2021). The mediating role of critical thinking and cooperativity in the 21st century skills of higher education students. Thinking Skills and Creativity, 42, 100967. https://doi.org/10.1016/J.TSC.2021.100967

Kotla, B., Bosman, L. B., & Keller, J. (2021). How photovoice can be used for continuous improvement within an aviation certified flight academic degree program. International Journal of Educational Research Open, 2(March), 100042. https://doi.org/10.1016/j.ijedro.2021.100042

Kurniawan, E., & Sofyan, H. (2020). Application of problem based learning model to improve problem solving ability of student of XI science grade in chemistry. Journal of Physics: Conference Series, 1440(1), 012014. https://doi.org/10.1088/1742-6596/1440/1/012014

Lee, B., & Lee, Y. (2020). A study examining the effects of a training program focused on problem-solving skills for young adults. Thinking Skills and Creativity, 37, 100692. https://doi.org/10.1016/J.TSC.2020.100692

Li, N., Lim, E. G., Leach, M., Zhang, X., & Song, P. (2022). Role of perceived self-efficacy in automated project allocation: Measuring university students' perceptions of justice in interdisciplinary project-based learning. Computers in Human Behavior, 136, 107381. https://doi.org/10.1016/J.CHB.2022.107381

Linxiao Ma. (2007). Investigating and Improving Novice Programmers' Mental Models of Programming Concepts. Computer Science Education, 21(1), 217. http://www.tandfonline.com/doi/pdf/10.1080/08993408.2011.554722

Lovett, M. C. (2002). Problem Solving. Stevens' Handbook of Experimental Psychology. https://doi.org/10.1002/0471214426.PAS0208

Luk, L. Y. Y., & Chan, C. K. Y. (2020). Adaptation and validation of the Work Experience Questionnaire for investigating engineering students' internship experience. Journal of Engineering Education, 109(4), 801–820. https://doi.org/10.1002/JEE.20351

Lynn, M. R. (1986). Determination and Quantificatiom of Conten Validity. In Journal of Experimental Psychology: General (Vol. 136, Nomor 1, hal. 382–386). https://doi.org/10.1161/CIRCULATIONAHA.112.092098

Marsh, H. W., Ellis, L. A., Parada, R. H., Richards, G., & Heubeck, B. G. (2005). A short version of the self description questionnaire II: Operationalizing criteria for short-form evaluation with new applications of confirmatory factor analyses. Psychological Assessment, 17(1), 81–102. https://doi.org/10.1037/1040-3590.17.1.81

Matovu, M. (2014). A structural equation modelling of the academic self-concept scale. International Electronic Journal of Elementary Education, 6(2), 185–197.

Matson. (2017). Handbook of Social Behavior and Skills in Children. Springer. https://sci-hub.se/10.1007/978-3-319-64592-6

Matthys, W., & Schutter, D. J. L. G. (2022). Improving Our Understanding of Impaired Social Problem-Solving in Children and Adolescents with Conduct Problems: Implications for Cognitive Behavioral Therapy. Clinical Child and Family Psychology Review 2022 25:3, 25(3), 552–572. https://doi.org/10.1007/S10567-021-00376-Y

Md Yusoff, Y., Omar, M., Zaharim, A., Mohamed, A., Yusoff, Y., Zaharim, A., Mohamed, A., Muhamad, N., & Mustapha, R. (2021). Enhancing Employability Skills through Industrial Training Programme Modelling of Photovoltaic Systems View project active power filter View project Enhancing Employability Skills through Industrial Training Programme. Latest Trends on ENGINEERING EDUCATION, 398–403. https://www.researchgate.net/publication/265798675

Mele, E., Español, A., Carvalho, B., & Marsico, G. (2021). Beyond technical learning: Internship as a liminal zone on the way to become a psychologist. Learning, Culture and Social Interaction, 28, 100487. https://doi.org/10.1016/J.LCSI.2020.100487

Miani, P., Kille, T., Lee, S. Y., Zhang, Y., & Bates, P. R. (2021). The impact of the COVID-19 pandemic on current tertiary aviation education and future careers: Students' perspective. Journal of Air Transport Management, 94(April), 102081. https://doi.org/10.1016/j.jairtraman.2021.102081

Moallem, M. (2019). Effects of PBL on Learning Outcomes, Knowledge Acquisition, and Higher-Order Thinking Skills. The Wiley Handbook of Problem-Based Learning, 107–133. https://doi.org/10.1002/9781119173243.CH5

Na, K. (2021). The Effect of On-the-Job Training and Education Level of Employees on Innovation in Emerging Markets. Journal of Open Innovation: Technology, Market, and Complexity 2021, Vol. 7, Page 47, 7(1), 47. https://doi.org/10.3390/JOITMC7010047

Nwosu, H. E., Obidike, P. C., Ugwu, J. N., Udeze, C. C., & Okolie, U. C. (2022). Applying social cognitive theory to placement learning in business firms and students' entrepreneurial intentions. The International Journal of Management Education, 20(1), 100602. https://doi.org/10.1016/J.IJME.2022.100602

OECD. (2021). AI and the Future of Skills, Volume 1: Capabilities and Assessments, Educational Research and Innovation. OECD Publishing. https://doi.org/10.1787/344B0FA3-EN

Ogbuanya, T. C., & Chukwuedo, S. O. (2017). Career-training mentorship intervention via the Dreyfus model: Implication for career behaviors and practical skills acquisition in vocational electronic technology. Journal of Vocational Behavior, 103, 88–105. https://doi.org/10.1016/j.jvb.2017.09.002

Okolie, U. C. (2022). Work placement learning and students' readiness for school-to-work transition: Do perceived employability and faculty supervisor support matter? Journal of Vocational Behavior, 139, 103805. https://doi.org/10.1016/J.JVB.2022.103805

Patel, A., Kramer, W. S., Flynn, M., Summers, J. D., & Shuffler, M. L. (2020). Function Modeling: A Modeling Behavior Analysis of Pause Patterns. Journal of Mechanical Design, Transactions of the ASME, 142(11). https://doi.org/10.1115/1.4046999/1082871

Peksatici, Ö., & Ergun, H. S. (2019). The gap between academy and industry - A qualitative study in Turkish aviation context. Journal of Air Transport Management, 79(March), 101687. https://doi.org/10.1016/j.jairtraman.2019.101687

Peteranetz, M. S., Flanigan, A. E., Shell, D. F., & Soh, L. K. (2017). Computational Creativity Exercises: An Avenue for Promoting Learning in Computer Science. IEEE Transactions on Education, 60(4), 305–313. https://doi.org/10.1109/TE.2017.2705152

Reinhold, F., Hofer, S., Berkowitz, M., Strohmaier, A., Scheuerer, S., Loch, F., Vogel-Heuser, B., & Reiss, K. (2020). The role of spatial, verbal, numerical, and general reasoning abilities in complex word problem solving for young female and male adults. Mathematics Education Research Journal, 32(2), 189–211. https://doi.org/10.1007/s13394-020-00331-0

Ripamonti, S., Galuppo, L., Bruno, A., Ivaldi, S., & Scaratti, G. (2018). Reconstructing the internship program as a critical reflexive practice: the role of tutorship. Teaching in Higher Education, 23(6), 751–768. https://doi.org/10.1080/13562517.2017.1421627

Salavera, C., Usán, P., & Jarie, L. (2017). Emotional intelligence and social skills on self-efficacy in Secondary Education students. Are there gender differences? Journal of Adolescence, 60, 39–46. https://doi.org/10.1016/J.ADOLESCENCE.2017.07.009

Santos-Jaén, J. M., Iglesias-Sánchez, P. P., & Jambrino-Maldonado, C. (2022). The role of gender and connections between entrepreneurship and employability in higher education. The International Journal of Management Education, 20(3), 100708. https://doi.org/10.1016/J.IJME.2022.100708

Schonland, A. (2016). The Pilot Shortage Part 2 – The Supply of Commercial Pilots » AirInsight. https://airinsight.com/pilot-shortage-part-2-supply-commercial-pilots/

Schumacker, R. E., & Lomax, R. G. (2015). A Beginner's Guide to Structural Equation Modeling. In A Beginner's Guide to Structural Equation Modeling. https://doi.org/10.4324/9781315749105

Sepasgozar, S. M. E. (2022). Immersive on-the-job training module development and modeling users' behavior using parametric multi-group analysis: A modified educational technology acceptance model. Technology in Society, 68, 101921. https://doi.org/10.1016/J.TECHSOC.2022.101921

Shanta, S., & Wells, J. G. (2022). T/E design based learning: assessing student critical thinking and problem solving abilities. International Journal of Technology and Design Education, 32(1), 267–285. https://doi.org/10.1007/S10798-020-09608-8/TABLES/3

Sokhanvar, Z., Salehi, K., & Sokhanvar, F. (2021). Advantages of authentic assessment for improving the learning experience and employability skills of higher education students: A systematic literature review. Studies in Educational Evaluation, 70, 101030. https://doi.org/10.1016/J.STUEDUC.2021.101030

Sternberg, R. J. (2003). The psychology of problem solving. The Psychology of Problem Solving, 1–394. https://doi.org/10.1017/CBO9780511615771

Subramaniam, M., Azmi, A. N., & Noordin, M. K. (2020). Problem Solving Skills Among Graduate Engineers: A Systematic Literature Review. Journal of Computational and Theoretical Nanoscience, 17(2), 1044–1052. https://doi.org/10.1166/JCTN.2020.8766

Sulistiobudi, R. A., & Kadiyono, A. L. (2022). Employability of students in vocational secondary school: Role of psychological capital and student-parent career congruences. Heliyon, ii, 1–40. https://doi.org/10.1016/j.heliyon.2023.e13214

Taborsky, B. (2021). A positive feedback loop between sociality and social competence. Ethology, 127(10), 774–789. https://doi.org/10.1111/ETH.13201

Thom, N. T., & Wardhono, A. (2018). Industrial Perspective on Public Private Partnerships Model in Indonesia. 205–208. https://doi.org/10.2991/aptekindo-18.2018.45

Tumpa, R. J., Skaik, S., Ham, M., & Chaudhry, G. (2023). Enhancing project management graduates' employability through group assessment innovations: An empirical study. Project Leadership and Society, 4, 100084. https://doi.org/10.1016/J.PLAS.2023.100084

van den Bedem, N. P., Willems, D., Dockrell, J. E., van Alphen, P. M., & Rieffe, C. (2019). Interrelation between empathy and friendship development during (pre)adolescence and the moderating effect of developmental language disorder: A longitudinal study. Social Development, 28(3), 599–619. https://doi.org/10.1111/SODE.12353

van der Wilt, F., van der Veen, C., van Kruistum, C., & van Oers, B. (2019). Why Do Children Become Rejected by Their Peers? A Review of Studies into the Relationship Between Oral Communicative Competence and Sociometric Status in Childhood. Educational Psychology Review, 31(3), 699–724. https://doi.org/10.1007/S10648-019-09479-Z/TABLES/1

van Leeuwen, A., & Janssen, J. (2019). A systematic review of teacher guidance during collaborative learning in primary and secondary education. Educational Research Review, 27, 71–89. https://doi.org/10.1016/J.EDUREV.2019.02.001

Virtanen, A., & Tynjälä, P. (2022). Pedagogical practices predicting perceived learning of social skills among university students. International Journal of Educational Research, 111(November 2020), 1–9. https://doi.org/10.1016/j.ijer.2021.101895

Wang, H. chun. (2019). Fostering learner creativity in the English L2 classroom: Application of the creative problem-solving model. Thinking Skills and Creativity, 31, 58–69. https://doi.org/10.1016/j.tsc.2018.11.005

Wei, R., & Sotiriadou, P. (2023). Teaching generic skill sets to sport undergraduates to increase their employability and promote smooth college-to-work transition. Journal of Hospitality, Leisure, Sport & Tourism Education, 32, 100431. https://doi.org/10.1016/J.JHLSTE.2023.100431

Wijaya, T. T., Zhou, Y., Ware, A., & Hermita, N. (2021). Improving the Creative Thinking Skills of the Next Generation of Mathematics Teachers Using Dynamic Mathematics Software. International Journal of Emerging Technologies in Learning, 16(13), 212–226. https://doi.org/10.3991/ijet.v16i13.21535

Xing, W., Zhu, G., Arslan, O., Shim, J., & Popov, V. (2022). Using learning analytics to explore the multifaceted engagement in collaborative learning. Journal of Computing in Higher Education, 1–30. https://doi.org/10.1007/S12528-022-09343-0/TABLES/7

Yiu, C. Y., Ng, K. K. H., Yu, S. C. M., & Yu, C. W. (2022). Sustaining aviation workforce after the pandemic: Evidence from Hong Kong aviation students toward skills, specialised training, and career prospects through a mixed-method approach. Transport Policy, 128(September), 179–192. https://doi.org/10.1016/j.tranpol.2022.09.020

Yusof, H. M., Mustapha, R., Mohamad, S. A. M. S., & Bunian, M. S. (2012). Measurement Model of Employability Skills using Confirmatory Factor Analysis. Procedia - Social and Behavioral Sciences, 56(Ictlhe), 348–356. https://doi.org/10.1016/j.sbspro.2012.09.663

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Zhang, J., Xie, H., & Li, H. (2019). Improvement of students problem-solving skills through project execution planning in civil engineering and construction management education. Engineering, Construction and Architectural Management, 26(7), 1437–1454. https://doi.org/10.1108/ECAM-08-2018-0321

Zhou, G., Gou, M., Gan, Y., & Schwarzer, R. (2020). Risk Awareness, Self-Efficacy, and Social Support Predict Secure Smartphone Usage. Frontiers in Psychology, 11, 1066. https://doi.org/10.3389/FPSYG.2020.01066/BIBTEX

Zondervan-Zwijnenburg, M. A. J., Richards, J. S., Kevenaar, S. T., Becht, A. I., Hoijtink, H. J. A., Oldehinkel, A. J., Branje, S., Meeus, W., & Boomsma, D. I. (2020). Robust longitudinal multi-cohort results: The development of self-control during adolescence. Developmental Cognitive Neuroscience, 45, 100817. https://doi.org/10.1016/J.DCN.2020.100817