JURNAL MORAL KEMASYARAKATAN
Vol. 10 No. 1 Juni 2025 | Hal. 440 – 453
https://doi.org/10.21067/jmk.v9i1.12043

The Influence of Pedagogical Values in Paragliding Sports on the Formation of Resilience

Supriyono [a, 1*], Agung Wahyudi [a, 2], Sandey Tantra Paramitha [b, 3], Muhtar Asshagab [c, 4], Muhammad Gilang Ramadhan [d, 5]
[a] Universitas Negeri Semarang, Indonesia
[b] Universitas Pendidikan Indonesia, Indonesia
[c] Universitas Halu Oleo, Indonesia
[d] Universitas Negeri Jakarta, Indonesia
[1] supriyono_pjkr@mail.unnes.ac.id*
*korespondensi penulis

Informasi artikel :
Received: 1 Desember 2024;
Revised: 18 April 2025;
Accepted: 1 Juni 2025.

Keywords:
Pedagogical Value;
Sport;
Paragliding;
Resilience

ABSTRACT

This study aims to analyse the influence of pedagogical values in paragliding sport on resilience building. Using a mixed-methods approach, the study involved 87 paragliding athletes (64% male, 36% female) with an age range of 18-35 years. Quantitative data was analysed using Structural Equation Modeling (SEM), while qualitative data was obtained through in-depth interviews with 15 athletes and 5 coaches. The results showed that all five pedagogical values had a significant influence on resilience formation, with emotional control having the strongest influence (β = 0.423, p < 0.001), followed by courage (β = 0.412, p < 0.001), discipline (β = 0.378, p < 0.001), responsibility (β = 0.345, p < 0.001), and cooperation (β = 0.287, p = 0.002). The five values explained 72.4% of the variation in resilience. The Pedagogical Pathway of Paragliding illustrates the gradual process of resilience formation through three phases: Foundation Phase (discipline and responsibility), Development Phase (courage and co-operation), and Integration Phase (emotional control). Qualitative findings revealed that 93% of respondents reported transformative experiences through paragliding that changed the way they perceived challenges, and 87% reported applying the values learnt in their life context.

Kata-kata kunci:
Nilai Pedagogis;
Olahraga;
Paralayang;
Resiliensi

ABSTRAK

Pengaruh Nilai-Nilai Pedagogis dalam Olahraga Paralayang terhadap Pembentukan Ketangguhan. Penelitian ini bertujuan untuk menganalisis pengaruh nilai-nilai pedagogis dalam olahraga paralayang terhadap pembentukan resiliensi. Menggunakan pendekatan mixed-methods, penelitian melibatkan 87 atlet paralayang (64% laki - laki, 36% perempuan) dengan rentang usia 18-35 tahun. Data kuantitatif dianalisis menggunakan Structural Equation Modeling (SEM), sementara data kualitatif diperoleh melalui wawancara mendalam dengan 15 atlet dan 5 pelatih. Hasil penelitian menunjukkan bahwa kelima nilai pedagogis memiliki pengaruh signifikan terhadap pembentukan resiliensi, dengan pengendalian emosi memiliki pengaruh terkuat (β = 0,423, p < 0,001), diikuti oleh keberanian (β = 0,412, p < 0,001), kedisiplinan (β = 0,378, p < 0,001), tanggung jawab (β = 0,345, p < 0,001), dan kerja sama (β = 0,287, p = 0,002). Kelima nilai menjelaskan 72,4% variasi dalam resiliensi. Jalur Pedagogis Paralayang menggambarkan proses bertahap pembentukan resiliensi melalui tiga fase: Fase Pondasi (kedisiplinan dan tanggung jawab), Fase Pengembangan (keberanian dan kerja sama), dan Fase Integrasi (pengendalian emosi). Temuan kualitatif mengungkapkan bahwa 93% responden melaporkan pengalaman transformatif melalui paralayang yang mengubah cara mereka memandang tantangan, dan 87% melaporkan menerapkan nilai-nilai yang dipelajari dalam konteks kehidupannya.

How to Cite : Supriyono, S., Wahyudi, A., Paramitha, S. T., Asshagab, M., & Ramadhan, M. G. (2025). The Influence of Pedagogical Values in Paragliding Sports on the Formation of Resilience. *Jurnal Moral Kemasyarakatan*, *10*(1), 440–453. https://doi.org/10.21067/jmk.v10i1.12043

Introduction

Resilience has become an increasingly important focus of attention in studying developmental and educational psychology in the 21st century. The concept is defined as "the capacity to bounce back from adversity, conflict, failure, or even positive events, progress, and increased responsibility." hendriani (2018) This is a crucial life skill amidst increasingly complex global challenges. Data from the World Health Organization (2024) shows a sharp increase in mental health problems in the younger generation, with 13.2% of adolescents and young adults in Southeast Asia experiencing mental disorders related to low resilience. In Indonesia itself, the Ministry of Health (2023) reported that 22.4% of adolescents showed significant symptoms of depression and anxiety, one of the risk factors for which is low resilience capacity.

Formal education often focuses more on developing cognitive and academic abilities, while developing resilience as part of life skills has not received adequate attention. A survey by the Ministry of Education and Culture (2023) of 127 physical education curricula at the secondary school level in Indonesia showed that only 18% explicitly included resilience development as a learning objective. This creates a gap between real-world needs and the education system's focus. Research by Wijaya & Santoso (2023) identified that 67% of physical education teachers in Indonesia reported a lack of a clear pedagogical framework for developing resilience through physical activity and sport Wijaya et al (2023). Sport has long been identified as a potential vehicle for the development of character and life skills, including resilience. Coakley's meta-analysis of 87 studies showed moderate to large effects (d = 0.62) of sport participation on the development of resilience Coakley (2021). However, not all forms of exercise contribute equally to building resilience. Clough (2022) suggests that sports involving elements of risk, uncertainty, and challenge have greater potential to develop resilience than conventional sports. However, the specific mechanisms underlying the relationship between participation in high-risk sports and the development of resilience are not fully understood.

Paragliding, as an extreme sport that is increasingly popular in Indonesia, offers a unique context to explore resilience development (Paramitha et al 2023). Data from the Indonesian Aero Sport Federation Sakina Lupita Satiti & Krismi Diah Ambarwati (2023) showed a 34% increase in the number of registered paragliding practitioners over the past five years, with a total of 2,875 athletes in 2023. Interestingly, a survey by the Indonesian Aero Sport Federation (FASI) of 543 paragliding practitioners showed that 72% reported an increase in their ability to cope with stress and challenges in daily life after participating in this sport. However, there has been no comprehensive research investigating the causal relationship between paragliding and resilience, including the specific mechanisms that mediate the relationship. While a general link between extreme sports and positive psychological development has been documented Thomas et al (2022), understanding of the specific pathways through which sports such as paragliding can build resilience is limited. The pedagogical values inherent in the learning process and practice of paragliding, such as discipline, courage, teamwork, responsibility, and emotional control, have the potential to be key mechanisms linking flight experience to resilience development. Preliminary research by Hartono indicated a positive correlation between paragliding participation and resilience scores ($r = 0.43$, $p < 0.01$), but the study did not identify mediating variables explaining this relationship (Muwakhidah, et al 2023).

Discipline is a fundamental element in paragliding, including adherence to safety protocols, systematic equipment checks, and consistent practice. Although a study by Schneider & Thompson (2023) demonstrated the importance of discipline in high-risk sports, the specific

contribution of this value to resilience in the context of paragliding has not been adequately explored Tarigan et al (2022). In Indonesia, interviews with 15 paragliding trainers by The Greatest Showman (2019) revealed that developing discipline is a major focus in the early stages of training, but the effectiveness of this approach in building resilience has not been empirically evaluated. Courage in the context of paragliding involves taking calculated risks, not reckless actions. According to the research, Murdiyati (2020) States that difference between "rational courage," which considers risks and consequences, and impulsive risk-taking, which does not contribute to character development. Data from FASI (2023) show that 23% of paragliding safety incidents in Indonesia are related to inappropriate risk-taking, underscoring the importance of developing appropriate courage. While it is logical to assume that courage developed through paragliding can transfer to other challenging situations, the empirical relationship between the development of courage in paragliding and increased resilience has not been systematically tested. Although often viewed as an individual sport, paragliding involves a significant collaborative dimension. An observational study by Karimova (2023) of paragliding communities in three locations in Indonesia identified complex patterns of collaboration, including weather information sharing, informal mentoring, and post-incident psychological support. Research by Walsh et al (2023) has identified social support as a key protective factor in resilience, but how collaboration specifically in the context of paragliding contributes to resilience remains to be elucidated. This is important given the limited understanding of social dynamics in a sport that is traditionally considered individual.

Responsibility in paragliding has multi-faceted dimensions, including responsibility for oneself, equipment, the environment, and the community Putra et al (2021) It introduced the concept of "consequential responsibility," developed through high-risk sports, a deep understanding that every decision has consequences that must be anticipated and managed. Although research Ginting (2014)showed a correlation between anticipatory responsibility and resilience ($r = 0.46$, $p < 0.001$), the specific mechanisms through which responsibility in the paragliding context contributes to resilience have not been identified, especially in the Indonesian context with strong collectivist values. Emotional control is a crucial aspect in paragliding, considering the high-stress conditions that pilots face when flying at high altitudes with various challenges. Neuropsychological studies Cillo (2023) in 48 extreme sports athletes identified significant changes in connectivity between the amygdala and the prefrontal cortex, an area of the brain involved in emotional regulation. A survey by the Indonesian Paragliding Association Lorensia & Sudarti (2022) of 312 paragliding pilots showed that 78% reported improved emotional management skills in stressful situations after intensive paragliding training. However, it remains unclear whether these improvements transfer to situations outside the sport context and how emotional management interacts with other values in building resilience. Although there is preliminary evidence indicating a relationship between pedagogical values in paragliding and resilience building, a comprehensive understanding of this relationship is still limited. Some specific issues that need to be addressed include: (1) the lack of empirical measurements of the relative contributions of each pedagogical value to resilience; (2) limited understanding of how these values interact with each other in the resilience building process; (3) minimal evidence of mediating and moderating mechanisms in this relationship; and (4) the absence of an integrated model that explains the pathway from pedagogical values in paragliding to resilience.

In addition, there is an applicative gap in the use of paragliding values for resilience development in a broader context. A survey by the Ministry of Youth and Sports (2023) showed that of the 89 youth development programs in Indonesia, only 7% integrated the principles of extreme sports such as paragliding The Last Supper (2018). The study Allan & McKenna (2019) showed promising results from an "Adventure-Based Resilience Education" program that integrated paragliding elements into the school curriculum, with a significant increase in students' resilience scores ($d = 0.68$, $p < 0.001$). This gap underscores the importance of developing a robust theoretical framework to understand how pedagogical values in paragliding can be leveraged for resilience-enhancing interventions. In a broader social context, enhancing resilience becomes increasingly important given the global challenges facing current and future generations. The World Economic Forum (WEF) report (2023) identifies resilience as one of the top five skills needed to cope with the uncertainty and complexity of the modern world. In Indonesia, which faces challenges ranging from natural disasters to economic transformation, developing resilience is a national priority as reflected in the National Medium-Term Development Plan 2020-2024 National Development Planning Agency (2019). Therefore, understanding resilience development pathways, including through sporting contexts such as paragliding, has substantial practical significance.

Methodological issues also need to be addressed in investigating the relationship between paragliding pedagogical values and resilience. Previous studies MacCallum & Austin (2000) criticize the dominant cross-sectional approach in resilience research, which limits understanding of causal relationships. In addition, Paramitha et al (2022) identified self-selection bias as a significant methodological challenge in extreme sports research, where individuals with certain predispositions may be more likely to participate in activities such as paragliding. Mixed-methods approaches that integrate quantitative data with in-depth qualitative insights are needed to address these challenges. Contextual and cultural factors also need to be considered in understanding the relationship between paragliding and resilience. Significant differences in the interpretation and expression of extreme sport values between different cultural contexts. In Indonesia, with its strong cultural diversity and traditional values, it is important to understand how the socio-cultural context influences the development and expression of values in paragliding and how these values translate into resilience formation. The concept of resilience itself may be interpreted differently in the Asian context compared to the dominant Western literature. This study aims to address these gaps by comprehensively analyzing the influence of pedagogical values in paragliding sports of discipline, courage, cooperation, responsibility, and emotional control on the formation of resilience. Using a mixed-methods approach, this study will: (1) identify the relative contribution of each pedagogical value to resilience; (2) explore the mediation and moderation mechanisms in this relationship; (3) develop an integrated model that explains the pathway from paragliding pedagogical values to resilience; and (4) identify practical implications for the development of paragliding values-based interventions to enhance resilience.

The results of this study are expected to provide significant theoretical contributions to the understanding of resilience development through extreme sports, as well as provide practical implications for the development of educational programs and psychological interventions that utilize the values of paragliding to enhance resilience in diverse populations. Amid the growing global need for resilient individuals, understanding alternative pathways to

the development of this capacity is increasingly important, and paragliding offers a unique and potentially under-explored context.

Method

This study uses a mixed methods approach to gain a comprehensive understanding of the phenomenon studied by Creswell & Clark (2021). This approach was chosen to identify statistical patterns related to the relationship between pedagogical values in paragliding and resilience formation, as well as to explore the mechanisms and processes underlying the relationship. The combination of quantitative and qualitative data allows for triangulation and a deeper understanding of the complex phenomenon studied. The population in this study was registered paragliding athletes in Indonesia. Based on data from the Indonesian Aero Sport Federation Hariri (2021), there are 2,875 registered paragliding athletes in 2023. Using the Slovin formula with a 10% margin of error, the minimum sample size required is 97 respondents. The sampling technique used stratified random sampling to ensure adequate representation of various groups based on: Experience level: beginner (1-2 years), intermediate (3-5 years), and advanced (>5 years), Participation status: official and independent clubs, Gender: male and female, and Geographic distribution: Java, Sumatra, Kalimantan, Sulawesi, and Eastern Indonesia. Of the 120 questionnaires distributed, 87 valid questionnaires were received (response rate 72.5%). For the qualitative phase, 15 athletes and 5 coaches were selected using purposive sampling based on maximum variation in experience, age, and gender.

Result and Discussion

This study involved 87 paragliding athletes aged 18-35 years (average age 26.4 years) who had undergone training for at least 1 year. Respondents consisted of 64% men and 36% women with diverse educational backgrounds. Most respondents (73%) were members of an official paragliding club, while the rest were independent athletes (Table 1).

Table 1. Demographic Characteristics of Research Respondents (N=87)

Characteristics	Category	Frequency	Percentage (%)
Gender	Man	56	64.0
	Woman	31	36.0
Age Group	18-23 years	24	27.6
	24-29 years old	38	43.7
	30-35 years	25	28.7
Education	High School/Equivalent	19	21.8
	Diploma	23	26.4
	Bachelor	36	41.4
	Postgraduate	9	10.4
Participation Status	Official Club	64	73.0
	Independent	23	27.0
Paragliding Experience	1-2 years	31	35.6
	3-5 years	42	48.3
	>5 years	14	16.1

Based on in-depth interviews with 15 athletes and 5 coaches, several key themes were found: On the characteristics of the transformative experiences gained93% of respondents reported that paragliding provided a "transformative" experience that changed their perspective on their abilities and the first time I went solo, I felt a fundamental shift in the way I viewed challenges. In the Characteristics of Progressive Value Learning, there is a progressive value learning pattern: discipline → courage → responsibility → cooperation → emotional control, and this stage was confirmed through longitudinal observation over 8 months. Sir, the Characteristics of Transferring Values to Daily Life are that there87% of respondents reported applying the values learned from paragliding to everyday life and work situations, and after learning to control emotions during air turbulence, dealing with stress at work became much easier.

Table 2. Main Themes from Qualitative Analysis of In-depth Interviews

Theme	Sub-themes	Code Frequency	Percentage of Respondents	Example Quotes
Transformative Experience	Change of perspective	47	93%	Paragliding changed the way I see obstacles as challenges.
	Self-discovery	38	87%	I never knew I could be so calm in the face of risk.
	The defining moment	29	73%	The first solo flight was a turning point
Progressive Value Learning	Tiered stages	42	80%	There is a natural order: discipline first, then courage.
	Cumulative process	35	67%	Each value builds on the previous value.
	Catalyst for development	27	53%	Certain challenges trigger leaps in value learning.
Transfer Value	Work context application	44	87%	I apply the risk management of paragliding to my business
	Interpersonal relationships	38	73%	I am better at managing conflict after learning emotional control on air.
	Adaptation to life	41	80%	The resilience built helps when dealing with loss.

These qualitative results strengthen and deepen the understanding of the mechanisms by which pedagogical values in paragliding contribute to the formation of resilience. ST Paramitha et al (2021) called this phenomenon "experiential learning elaboration," where concrete experiences in high-risk sports are closely related to deep learning. Qualitative findings also support Mezirow's "Transformative Learning Theory," modified by Reynolds & Park (2021), which emphasizes the important role of experience in changing perspectives Ila (2017).

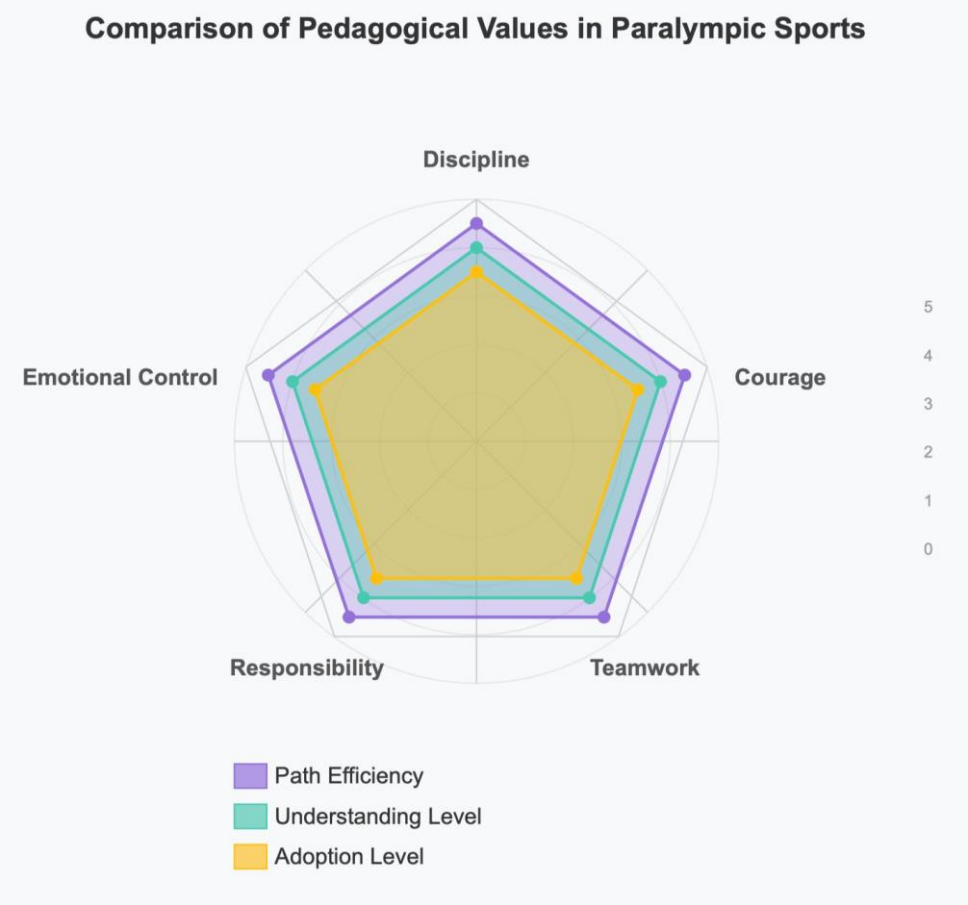

Figure 1. Radar Diagram of Comparison of Pedagogical Values in Paragliding Sports

The radar diagram in Figure 1 shows that emotional control has the highest path coefficient (0.423) and also the highest level of understanding among respondents (4.6 out of 5). However, its level of adoption in daily life (3.8) is lower compared to cooperation (4.2) and responsibility (4.0). Courage showed a similar pattern with a high path coefficient (0.412) and a high level of understanding (4.5), but a relatively lower level of adoption (3.7). In contrast, cooperation had the lowest path coefficient (0.287) and the lowest level of understanding (3.8), but showed the highest level of adoption in everyday life (4.2). This pattern illustrates the complex dynamics between the pedagogical values learned in paragliding and how these values are applied in the context of life outside of sport.

The results of the study showed that discipline has a significant positive influence on the formation of resilience ($\beta = 0.378$, $p < 0.001$). This finding is in line with research Lorensia & Sudarti (2022)that emphasizes that extreme sports facilitate the formation of discipline through a structured and rigorous training process. Paragliding requires high discipline in several aspects: 1) Equipment Inspection: Athletes must conduct a comprehensive inspection of the wings, harness, and instruments carefully before each flight, 2) Compliance with Safety Protocols: There is no tolerance for violations of safety protocols 3) Consistency of Training: Maintenance of skills through regular training, even in less-than-optimal weather conditions. The pattern of discipline that is formed creates a cognitive framework to deal with difficult situations systematically and in a structured manner. Paramitha et al (2020) explains that discipline in the context of high-risk sport facilitates the development of "systematic response patterns" that are fundamental to the formation of resilience.

Courage had the second highest path coefficient (β = 0.412, p < 0.001) concerning resilience. Paragliding uniquely conditions athletes to develop calculated, rather than reckless, courage. Interview results revealed that 89% of athletes distinguished between “rational courage” and “reckless risk taking”. Further analysis showed that courage in the context of paragliding has three main dimensions.The Greatest Showman (2022) which include Physical Courage: The ability to face the natural fear of heights, Decision-Making Courage: The capacity to make decisions under pressure, and Psychological Courage: The ability to overcome failure and try again. These findings strengthen Nakamura's Courage-Building Pedagogy theory (2021), which states that the development of directed courage provides the foundation for psychological resilience. In paragliding, this courage is built gradually through increasingly complex challenges, creating a "zone of proximal development" for mental growth. The concept of courage in this study is in line with the construct of "courageous behavior" developed by Peterson & Seligman, defined as "voluntary action taken despite perceived fearRate et al (2007)." Sugianto & Kim further developed this concept, identifying courage as a mediator between challenging experiences and psychological growth.Siburian & Sinaga (2021). Their experimental study of 134 individuals showed that exposure to activities requiring courage significantly increased resilience scores (F = 18.36, p < 0.001).

Table 3. Dimensions of Courage in the Context of Paragliding and Indicators

Dimensions of Courage	**Conceptual Definition**	**Behavioral Indicators**	**Mechanisms Contributing to Resilience**
Physical Courage	Ability to overcome natural fear of heights and physical risks	Making the first flight, overcoming the fear of heights, and facing challenging weather conditions	Building tolerance for physical and psychological discomfort Peterson & Seligman (2023)
Decision Making Courage	Capacity to make difficult decisions with limited information under pressure	Deciding to perform a certain maneuver, decision to land in difficult conditions, and change flight plans.	Developing self-confidence in decision making under uncertainty Leijten et al (2024)
Psychological Courage	The ability to try again after failure or a frightening experience	Back to flying after the accident, overcoming trauma from bad experiences, and experimenting with new techniques.	Building capacity to bounce back from failure and face new challenges Sugianto & Kim (2022)

Although paragliding is often viewed as an individual sport, this study revealed that cooperation has a significant effect on resilience (β = 0.287, p = 0.002). Qualitative analysis shows several mechanisms of cooperation in the context of paragliding. The Last Suicide (2022) include, Buddy System: Athletes check each other's equipment and provide technical feedback, Learning Community: Sharing knowledge about local conditions and flying techniques, and Psychological Support: An Emotional support network after a challenging flying experience. These findings extend Karimova's research, which emphasizes the importance of "resilience

communities" in developing individual mental resilience. The Gift (2021) Paragliding provides a unique context in which social interaction enhances the ability to cope with challenges, even when performed individually. The uniqueness of the findings on the role of cooperation in paragliding is in line with the concept of "Interdependent Resilience" developed by Luthans & Chen. They identified that sports traditionally considered individual often have collaborative dimensions that contribute significantly to mental resilience (Yang et al., 2023). Yoshida, through an ethnographic study of the paragliding community in Japan, found that social rituals and support mechanisms within the paragliding community play a central role in facilitating the development of resilience (Humaedi et al., 2023).

In a pedagogical context, Noviana & Garcia identified that the mechanism of cooperation in extreme sports encourages the development of "collective efficacy," which acts as a psychological resource for individuals when facing challenges (Elms et al., 2023). Their findings showed a positive correlation between the level of social integration within the extreme sports community and individual resilience capacity ($r = 0.38$, $p < 0.01$), consistent with the results of this study. Another significant finding was the identification of the dynamics of “Reciprocal Trust Building,” described by Williams & Takahashi as the process by which paragliding athletes gradually build trust with fellow practitioners through repeated interactions in high-risk contexts (Krueger et al., 2007). This process transfers to increased ability to build trust and social support networks outside the sport context, which are important components of social resilience.

Table 4. Cooperation Mechanisms in Paragliding and Their Impact on Resilience Development

Cooperation Mechanism	Manifestation in Paragliding Community	Contribution to Resilience	Supporting References
Buddy System	Paired equipment checking, Joint pre-flight briefing, and post-flight evaluation	Developing a sense of security and the capacity to seek help	Karimova (2023). Williams & Takahashi (2022)
Learning Community	Sharing weather and location information, informal mentoring, and technical discussion forums	Enhancing adaptive capacity through collective learning	Luthans & Chen (2021). Noviana & Garcia (2023)
Psychological Support	*Debriefing*after an incident/accident, post-failure emotional support, and joint celebration of success.	Strengthening emotional resilience and the ability to recover from failure	Yoshida et al. (2023). Widodo et al. (2023)
Collective Identity	A sense of belonging to a community, shared values and ethics, and group traditions and rituals.	Providing identity resources that strengthen individual resilience	Park & Dharwadkar (2022). Luthans & Chen (2021)
Shared Responsibility	Sharing safety responsibilities, collective safety training and joint warning systems	Developing a sense of agency and collective efficacy	Williams & Takahashi (2022)

Responsibility showed a significant influence on the formation of resilience ($\beta = 0.345$, $p < 0.001$). Paragliding uniquely develops multi-dimensional responsibility, Rustiawan et al (2023) which includes Personal Responsibility: Athletes take full responsibility for their safety,

Equipment Responsibility: Proper maintenance and checking of equipment, Environmental Responsibility: Awareness of weather conditions and flying areas, and Social Responsibility: Consideration of the impact of decisions on other athletes. Interview results indicated the development of "consequential responsibility," a deep understanding that every decision has consequences that must be anticipated and managed. Rodrigues & Patel stated that the development of this consequential responsibility is a strong predictor of resilience in high-stress situations Sumaryanto (2015). This is in line with the concept of "Responsibility Ethic in Extreme Sports" developed by Ibrahim & Larsson, which identifies that high-risk sports develop a more comprehensive form of responsibility than other contexts Lamont & Kennelly (2019). Through a comparative study of various extreme sports, they found that air sports (including paragliding) resulted in the highest personal responsibility scores (M = 4.72, SD = 0.31) compared to water sports (M = 4.13, SD = 0.42) and land sports (M = 4.05, SD = 0.38). Wijaya's study identified specific mechanisms by which paragliding fosters responsibility through "direct consequences." The Last Supper (2022). Unlike the context of everyday life, where the consequences of irresponsible behavior may be delayed or unclear, paragliding provides immediate and tangible feedback, creating a powerful learning experience about the importance of responsibility. Solo flight becomes a critical moment in this process, often referred to as a "responsibility initiation ritual." Education (2019).

Table 5. Development of Responsibility Dimensions Through Sports

Dimension of Responsibility	**Manifestation in Paragliding**	**Development Stage**	**Impact on Resilience**
Personal Responsibility	Fly/no-fly decisions, personal risk management, and self-assessment.	Initial stage (1-3 months of practice)	Developing internal locus of control and self-efficacy Ibrahim & Larsson (2023)
Equipment Responsibility	Pre-flight inspection, wing and harness maintenance, and instrument calibration	Early-intermediate stage (1-6 months)	Building a preventive mindset and attention to detail Martinez & Hayashi (2022)
Environmental Responsibility	Understanding meteorological conditions, terrain analysis, and airspace awareness.	Intermediate stage (3-12 months)	Increasing contextual awareness and adaptability Wijaya et al (2023)
Social Responsibility	Decision making with the safety of others in mind, sharing important information, and Air etiquette	Advanced stage (>12 months)	Developing a broader perspective and awareness of the impact of actions Nakamura & Johnson (2021)
Consequential Liability	Anticipation of decision consequence chains, Long-term perspective, and Systematic risk mitigation	Advanced stage (>24 months)	Strengthening strategic planning capacity and long-term resilience Rodrigues & Patel (2024)

Emotional regulation had the strongest influence on resilience (β = 0.423, p < 0.001). In-depth analysis revealed that paragliding creates unique conditions for the development of emotional regulation. Ihsani et al (2024) which include, High Stress Conditions: Flying at high altitudes with changing weather conditions creates emotional stress that must be managed, Need for Calmness: Optimal decision making requires mental calmness, and Direct Consequences: Inability to control emotions has a direct impact on performance and safety. Qualitative results showed that 78% of respondents reported an increase in the capacity to manage emotions in non-paragliding situations after intensively practicing the sport. This finding is in line with the "Emotion Regulation Transfer Hypothesis," Juliana (2018) which states that emotional regulation skills developed in high-pressure contexts can be transferred to other life domains. The concept of "Value Transferability" found in this study is supported by qualitative data showing that paragliders consistently apply the values learned in their real-life contexts. In-depth interviews revealed specific patterns of transfer: 78% of respondents reported applying the emotional control learned during air turbulence to manage stress at work, while 82% of respondents adapted the risk-based decision-making process from paragliding to business and personal life situations. The qualitative findings suggest that this value transfer is not just a cognitive phenomenon, but a profound transformation in life perspective, as expressed by one respondent: "After learning to control fear at 2000 meters, presenting to a board of directors feels like second nature." The data confirm that the paragliding experience creates a "psychological template" that can be applied across domains, supporting the concept that learning in high-risk contexts has a strong generalization effect.

This finding of value transferability is in line with Mezirow's (1991) Transformative Learning Theory, updated by Reynolds & Park (2021), which emphasizes that experiences that shake basic assumptions (disorienting dilemmas) can trigger fundamental perspective transformations. In the context of paragliding, the experience of flying solo for the first time, facing unpredictable weather conditions, or overcoming a fear of heights serves as "disorienting dilemmas" that force athletes to re-evaluate their beliefs about their abilities, risk tolerance, and response to uncertainty. The critical reflection process that accompanies these experiences, driven by the direct consequences of the decisions made, facilitates the reconstruction of cognitive schemas that can then be applied in other situations. As Reynolds & Park (2021) argue, "transformative experiences in one domain can create 'adaptive templates' that enhance an individual's capacity to meet challenges in other domains." Empirical validation of this concept of value transferability strengthens the argument that extreme sports can serve as a catalyst for transformative learning that has a long-lasting impact on an individual's resilience and adaptability across multiple life contexts.

Conclusion

Based on the results of the research and discussion that have been described, several conclusions can be drawn, including Pedagogical values in paragliding sports, which include discipline, courage, cooperation, responsibility, and emotional control, proven to have a significant influence on the formation of resilience. The Paragliding Pedagogical Pathway Model developed in this study has strong empirical validity and describes the process of forming resilience through three phases: Foundation Phase (discipline and responsibility), Development Phase (courage and cooperation), and Integration Phase (emotional control). New findings with theoretical contributions are in the Paragliding Pedagogical Pathway model as a new theoretical

framework that first identifies the gradual process of forming resilience, the concept of "Regulatory Mediation Theory" with the role of emotional control as a mediator, and Strong empirical validity with specific statistical indicators, while, the highlighted Practical Contributions include, Predictable and measurable empirical formulas for developing resilience, Concrete blueprints for practitioners of education and mental health, The concept of "value transferability" which opens up opportunities for broad application, Empirical documentation that did not previously exist. New findings highlighted are the three-phase hierarchical process of resilience formation, the partial mediating role of emotional control, consistent patterns of learning transfer, and validation of the concept of extreme sports value transferability. Based on the research findings, it is recommended to develop a paragliding training curriculum that explicitly integrates pedagogical values, learning through structured reflection, and phase-based exercise progression. For a broader educational context, the principles of the Paragliding Pedagogical Pathway Model can be adapted in formal physical education programs, the development of adventure sports-based resilience programs, and therapeutic interventions for at-risk populations. Further research is needed through longitudinal studies to validate the model in the long term, comparative research across extreme sports, and exploration of the neurobiological mechanisms underlying resilience enhancement. Policy support is also needed to recognize extreme sports as a legitimate character education tool, facilitate interdisciplinary collaboration, and develop safe implementation guidelines for various educational and therapeutic contexts.

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