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Selected Factors Determining the Adaptability of the Gdańsk School Under Sails Participants and Their Temperamental Correlates

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Abstract

Research objectives and problems: The purpose of the study was to test the impact of a high seas cruise on a traditional sailing ship, during which sail training is implemented, on selected characteristics of the participants. It was thought that significant, positive changes would emerge in terms of decision-making, perception of the future, resistance to change, and proactivity – and that these changes would be related to temperament.

Research methods: Using the General Decision Making Style instrument, the Consideration of Future Consequences Scale, the Resistance to Change Scale, and the Proactivity Scale, a questionnaire with repeated measurement was administered to two groups of adolescents taking part in a sea cruise (Group 1: 14-day cruise, 11 boys, 8 girls, M age=17.1; Group 2: 7-day cruise, 13 boys, 7 girls, M age = 21.9). Measurements were taken on the first and last day of

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the cruise and one month after the cruise. Multilevel modeling was used to examine how temperament moderates changes in decision-making style, consideration of future consequences, resistance to change, and level of proactivity.
Structure of the article: The text provides information on sail training, including the historical context, previous research, and impact on youths' development. The role of temperament in shaping behavior and its relevance to sail training are introduced. The theoretical constructs investigated, and the tools used in the research are described. The research objectives are stated and the sample and procedure are explained. The results are presented and discussed. Limitations and conclusions are indicated.
Research findings and their impact: Emotional reactivity significantly moderated the increase in dependent and avoidant decision-making styles and short-term focus, while it decreased cognitive rigidity and proactivity. Activity counteracted growth in avoidant decision-making style, reduced resistance to change, routine seeking, and emotional reactivity to change, lowered short-term focus, and supported growth in proactivity. Resilience counteracted the positive development of proactivity.
Conclusions and recommendations: Temperament traits can be mediators of change in terms of the constructs discussed herein. The results allow us to look at sail training from a new perspective, though further research on a regular School Under Sails and aboard other sailing ships is needed to formulate indisputable conclusions.

Keywords: Gdańsk School Under Sails, adaptability, temperament, decision-making, consideration of future consequences, resistance to change, proactivity

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Introduction

The idea of sail training was instilled in Poland by General Mariusz Zaruski in the 1920s (Romaniuk, 2018) and was developed subsequently (Drucka, 1969; Stępień, 1997). Zaruski's goal was to teach young people to sail the seas, but also to use sailing for education. Intuitive application

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of the then-unknown social learning theory (Bandura, 2007) allowed Zaruski to use his authority among young people to be effective (Wędzinski, 1990; Zaruski, 1925; Zaruski, 1933).

The idea has evolved over the years (Bublewski, 1992; Glowacki, 1972; Jasser, 2012; Śliwko, 1982; Woźniak, 1989; Zaruski, 1958). The new definition of sail training is more in line with modern needs. "Sail training in pedagogical terms is an organized and purposeful process that influences personality, attitudes […] in a socially desirable way, […] through which transgression and developmental leaps occur" (Romaniuk, 2020c, p. 14).

School Under Sails and its impact on youths

The participants of Schools Under Sails are adolescents aged 15–20 years. The aims and itineraries of the cruises help to achieve the goals of adolescence (Romaniuk, 2015b, 2016). Their impact on young people is valuable and positive, as can be seen in the studies mentioned below. Adolescents show significant improvement in confidence in social interactions and group cooperation skills. The positive value of sail training transcends national and cultural boundaries. Particular and purposeful action is important in implementing a specific program, which increases its effectiveness (Allison et al., 2007). Passion for sailing is also passed on in an intergenerational transfer (Romaniuk & Łukasiewicz-Wieleba, 2020). Significant increases in generalized self-efficacy (Hunter et al., 2010), mental toughness, and self-esteem have been shown (Romaniuk, 2021b, 2020b). Elevated levels of self-esteem persist for 4–5 months (Kafka et al., 2016) and even a year after the cruise (Hunter et al., 2013). Because these features are important in the context of youth development, shaping them through sail training is advisable.

Self-efficacy reflects adolescents' actual control of behavior and skills (de Vries et al., 1988). It helps predict self-efficacy in schooling (Gore, 2006) and university studies (Andrew, 1998; Choi, 2005) and it helps in coping with stress (Jerusalem & Schwarzer, 1992). One of its strongest determinants is the experience of mastery, which is particularly supportive

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because it provides direct proof of the effectiveness of one's actions (Bandura, 1977), which occurs on a ship (Romaniuk, 2020a). It is a protective factor against risk-taking behavior (Ogunyemi & Mabekoje, 2007).

Mental hardiness is a resource of resilience when faced with a stressful situation (Kobasa, 1979). Its three components, or interrelated dispositions – commitment, a sense of control, and openness to challenge – are important not only in the life of an adolescent, but also in the life of an adult (Bartone et al., 2016). Adventures, difficulties, and weaknesses overcome while struggling with the elements during a cruise provide a sense of pride and turn into a desire to take on further challenges. Cruises also provide an opportunity to effectively include people with disabilities (i.e., visual impairments or physical disabilities) into groups of young people (Romaniuk, 2014; 2015a).

The positive impact of sail training on many characteristics and competencies indicated above have been mentioned in the following studies. a qualitative study by Henstock et al. (2013) showed the development of social competence, as well as overall self-concept, motivation to learn, and a sense of purpose. Participation in an adventure education-based development program promotes ego identity building (Bennion & Adams, 1986), mainly through significantly lowering levels of exclusion and distraction (Kally & Heesacker, 2003). Mental resilience, a positive personality trait that enhances individual adaptation (Wagnild & Young, 1993), increases significantly (Koni et al., 2019). A study following a three-month Atlantic cruise showed that the participants had developed ways to cope with stress in the form of positive reinterpretation and development skills (Norris & Weinman, 1996).

The above-mentioned qualities in which positive changes occur are desirable and valuable in life. These changes may result from the need to face the elements and being in extreme or limit situations, allowing the person to overcome their own weaknesses, experience the feeling of flow, and to develop through transgression (Romaniuk, 2021a). Sailors perceive a sailing ship as a space for experiencing freedom that is conducive to development, thus providing a suitable educational environment (Romaniuk & Łukasiewicz-Wieleba, 2021), consistent with the ideas and

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expectations of adolescents on this subject (Romaniuk & Łukasiewicz-Wieleba, 2019). This makes the space of a sailing ship a friendly place for the effective development of young people.

Existing research on sail training has explored the topic, but despite its growing popularity, the area is rather niche. The cited studies concern single features and only indicate changes in their scope; they do not contain advanced statistical analysis. The natural course of events is to develop research on sail training and to attempt to describe more precisely what actually happens to participants in terms of their development. There is no analysis of participants' adaptability and the topic is not framed from the perspective of their temperamental traits. It can be hypothesized that the synergistic effect of the interactions of the staff, setting an example of "decent work," the environment of the ship on a full-sea cruise, and their own experiences, experiences, and reflections will be positive.

Temperamental factors in shaping behavior

Temperament is one of the regulators of human–environment relationships and a major source of stimulation (Strelau, 1983). The study was embedded in the Regulative Theory of Temperament (RTT) because it is multidimensional, focuses on the causes of behavior, and is concerned with behavior as a whole. The RTT can be applied to survey cruise participants: adolescents over 15 years of age (Cyniak-Cieciura et al., 2016). According to the RTT, traits are general dimensions of behavior encompassing its specific temporal and energetic characteristics, as well as the relationships relating to them or trait structures (Zawadzki & Strelau, 1997). The regulatory function of temperament is to moderate the stimulation and timing of behavior depending on individual characteristics; the role of regulating relations with the external world is evident in difficult and/or extreme situations (Strelau, 2009).

Temperament refers to formal behavioral traits (Strelau, 1974), so biological mechanisms that make up neurohormonal individuality (Strelau & Plomin, 1992) can differentiate behavior in psychologically demanding

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situations (Wright & Mischel, 1987). A sailing ship is a unique environment for the crew, and the situations are highly stimulating. The inability of participants to regulate the stimulus value of the situation should reveal individual differences between low- and high-activity individuals in terms of behavior (Friedensberg, 1985; Klonowicz, 1986). There is a direct correlation between activity and the characteristics of the individual (Elijah, 1981), which may translate into differences in the other measured constructs. Temperament may moderate changes in decision-making, perception of the consequences of one's actions, adaptability, and proactivity, which may be provoked by the participants' experiences on the cruise.

Theoretical constructs used in the study

Decision-making style is a learned, habitual pattern of response manifested by an individual when confronted with a decision-making situation (Scott & Bruce, 1995). It is not a personality trait, but a habit-based tendency to react in a certain way in a certain context. Situations can influence decisions, while personality traits tend to be inter-situationally consistent (Michel, 1968). During the cruise, the participants perform the rotating role of watch leader, which involves managing their peers under the supervision of an experienced officer. They receive tasks from the officer that they must complete on their own. This is an opportunity to practice decision-making, which implies a desire to test whether temperament moderates the change in decision-making style after the experience of the cruise. It is desirable to shape a rational decision-making style in participants through modeling because it is a predictor of rationality and because an avoidant style can predict indecision (Curşeu & Schruijer, 2012).

Consideration of Future Consequences (CFC) is the degree to which one considers the distant consequences of one's current behavior and how it will affect oneself (Strathman et al., 1994). It involves an ongoing, intrapersonal struggle between current behavior intended to result in one set of immediate and one set of future consequences. The way the dilemma between present and future is resolved is a relatively stable trait.

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People with low CFC focus on immediate needs and their satisfaction. Those with high CFC use distant goals as a guide for their current actions. a change in attitude under the influence of education is possible (Toepoel, 2010), but the outflow of significant events on CFC is unknown. A significant event in a young person's life may be a high-sea voyage on a sail training ship. In addition to situations in which the participants practice making decisions for which they are responsible, they also participate in educational activities and have a lot of time to talk to each other and to the sailing ship staff, as well as space to reflect on their current and future lives. This can provide an incentive to develop CFC.

Resistance to Change (RtC) is an indicator of the degree to which an individual (fails to) adapts to change. Resistance to change derives from an individual's personality and can be traced back to an unwillingness to lose control, cognitive rigidity, lack of mental toughness, etc. (Oreg, 2003). RtC can mediate changes in other measured traits. The atmosphere on board includes contextual variables that mitigate resistance to change, such as an appropriate climate and leadership style (Hon et al., 2011). Educational interactions can reduce resistance by properly preparing for change and managing the entire process (Bruckman, 2008). Resistance to change may decrease among the participants due to their experiences during the cruise, and they may become more flexible.

Proactivity (PA) is the desire to act and create reality (Pitt et al., 2002). It involves taking control rather than passively observing (Kanten & Alparslan, 2013). PA involves being self-reliant, change-oriented, and future-focused (Parker et al., 2010; see also Belschak et al., 2010; Ohly & Fritz, 2007). Shaping proactivity in young people increases their chances of taking their careers into their own hands (Dimitrios, 2008) and building their own businesses (Crant, 1996); it allows them to anticipate events (Bar, 2009) and learn and socialize more effectively (Cooper-Thomas et al., 2014). On a ship, apart from the crew's duties, there are many opportunities to show initiative. After a few days of the cruise, the participants begin to treat the ship as their home, so they want to take care of it, are interested in it and show initiative not only in learning sailing skills, but also in actively participating in running the ship. This supports a positive change in proactivity.

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Research problem, questions, and hypotheses

The aim of the study was to investigate the adaptability of participants in the Gdansk School Under Sail (GSUS) cruise. The existence of correlations between participating in the GSUS cruise and changes in selected characteristics (decision-making styles, consideration of future consequences, resistance to change, and proactivity level) were verified. The role of temperament in changing these attributes was examined. The constructs discussed above are important traits for a sailor, but also for an adult, so it is useful to know whether and how they develop during the sail training cruise. Sailing is a demanding discipline. Actions must be preceded by an analysis of their potential consequences and decisions should result from rational calculation. Knowledge and experience make it possible to anticipate events, but success is guaranteed by quick, efficient, proactive prediction. Proactivity is a desirable trait, as it avoids many undesirable events. However, not everything can be predicted, so a sailor should adapt efficiently to dynamic situations.

Based on the above-mentioned literature review and observations made during previous cruises of the School Under Sails, the following research hypotheses were formulated. Participation in the GSUS leads to (1) a decrease in decision-making disorder among participants, who become more concrete after the cruise, (2) the formation of a more specified vision of their future among participants, (3) better adaptation to dynamic situations, (4) an increase in the proactivity of the participants, and (5) which is moderated by the temperament of participants.

Research tools

Five research tools were used: the General Decision-Making Style questionnaire (GDMS), the Consideration of Future Consequences questionnaire (CFC), the Resistance to Change questionnaire (RTC), the Proactive Attitude Scale (PA), and the Formal Behavioral Characteristics – Temperament

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Inventory, revised version (FCB-TI(R)). All scales are self-report measures and can be used for selected respondents.

The GDMS scale (Scott & Bruce, 1995) has 25 items, rated on five-point scale from "Strongly disagree" to "Strongly agree," and it assesses attitudes toward decision-making situations, distinguishing between five styles. The rational style (RDS) emphasizes "careful search and logical evaluation of alternatives," the avoidant style (ADS) emphasizes postponing and avoiding decisions, the dependent style (DDS) emphasizes "seeking advice and guidance from others," the intuitive style (IDS) emphasizes "relying on hunches and feelings," and the spontaneous style (SDS) emphasizes "a sense of immediacy and a desire to move through the decision-making process as quickly as possible" (Scott & Bruce, 1995, p. 820).

The Consideration of Future Consequences (CFC) scale (Strathman et al., 1994) has 12 items describing behavior, rated on five-point scale from "Definitely unusual" to "Definitely usual," and it assesses the degree to which short-term or long-term consequences are emphasized (Toepoel, 2010).

The Resistance to Change (RTC) scale (Oreg, 2003) has 17 items, rated on six-point scale from "Strongly disagree" to "Strongly agree." It assesses individuals' tendencies to "resist or avoid making changes, to devalue change in general, and to experience aversion to change in its various contexts and types" (Oreg, 2003, p. 680). It includes four subscales: Routine Seeking (RS) is the behavioral component of resistance to change, "the tendency to adopt a routine," Emotional Response (ER) is the affective component, "the amount of stress and anxiety" caused by change, Short-Term Focus (SF) is the affective component, "the extent to which individuals are distracted by short-term discomfort" associated with change, and Cognitive Rigidity (CR) is the cognitive component, "the frequency and ease with which people change their minds."

The PA scale (Schmitz & Schwarzer, 1999) has nine items, rated on four-point scale from "Definitely untrue" to "Definitely true," and it measures the overall level of proactivity.

The Formal Behavioral Characteristics – Temperament Inventory Revised (FCB-TI(R)) (Cyniak-Cieciura et al., 2016) is used to diagnose the basic

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and originally biologically based dimensions of temperament, which, according to the RTT, is an element of personality and concerns the formal, rather than content, aspect of behavior. It consists of 100 items and includes seven content scales: briskness, perseverance, sensory sensitivity, emotional reactivity, endurance, activity, and mobility.[1]

Most of these tools were published in English. The tools were translated using the method recommended by the World Health Organization (2016). The translation and adaptation process consisted of several stages. At the beginning, the authors' consent was obtained to translate and use the GDMS, the CFC, the RtC, and the Proactivity Scales for scientific research. A Polish-language version of the questionnaires was created. When adapting it culturally, attempts were made to maintain the principle of equivalence of the translated questionnaires to the original versions. A bilingual expert was consulted and the translation inadequacies they identified were corrected. An independent translator was asked to translate the Polish version of the questionnaires back into English to verify the accuracy of the translation, to confirm conceptual and cultural equivalence, and to avoid a literal translation. A pilot study was conducted (N = 154), which confirmed the quality of the translated questionnaires. The psychometric properties of the translated tools are comparable to those of the originals; they can be found in the appendix.

Characteristics of the surveyed sample

The study included 19 participants who took part in a two-week cruise of the GSUS, as well as 20 graduates of the First High School in Bytom, who participated in a week-long cruise in the Baltic Sea. The 19 adolescents (pupils and students; 11 males [57.9%] and eight females [42.1%], aged 15 to 25 years [$M = 17.11$; $SD = 2.38$]) participated in the survey conducted

[1] The measurement reliability of the GDMS tool is within the range of α = .77 to α = .94; for the RtC it is α = .78 to α = .88; for the PA α = .79; and for the CFC from α = .80 to α = .86.

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during the GSUS. The 20 young adults (13 males [65%] and seven females [35%], aged 18 to 34 years [$M = 21.95$; $SD = 4.29$]) participated in the survey during the cruise of the graduates of the First High School in Bytom. All crew members agreed to participate in the study. The sample size is small because of the limited number of crew on the ship, but it includes all crew members. The selection of the sample was purposive: the sample consisted of people who qualified for the cruises.

Procedure

The questionnaire study was conducted aboard the sailing ship STS General Zaruski. Consent was obtained from the subjects to participate in the study (parental consent was also obtained if the subjects were minors). The first measurement took place on the first day of the voyage, after embarking and basic training; the second was on the last day of the voyage, just after disembarking. The third measurement was conducted remotely one month after the cruise, using the Qualtrics platform. A response rate of about 50% was obtained for the assessment through the online platform (52.6% for the GSUS and 45% for the Bytom cruise). All participants completing the third measurement through Qualtrics did so promptly.

The data were checked for outliers and extreme observations, deviations from normality, and possible deviations from other assumptions (Tabachnick & Fidell, 2013). Statistical analysis was performed using SPSS 27 software.

Multi-level modeling was carried out, which allows a hierarchical model to be built in such a way that the constant and slope coefficient of the regression line can vary depending on the context. For each parameter treated as random, its variability and its point value are estimated. Adding predictors to a model involves deciding whether its regression parameter is fixed or random (Field, 2013). A two-level model was proposed, with the first level being specific measurements and the second level being the person under study as an individual (measurements

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are nested within individuals). Models were calculated with unstructured covariance (the assumption of zero covariance between constants and slope coefficients was removed). Only statistically significant results are reported. The predictors were temperamental traits as defined by the RTT and time spent at sea.

Results

This table presents the significant changes and trends observed among different participant groups and variables.

Participant group/variable	Measurement	Comparison/ Effect	t-Value (df)	p-Value	Effect size (d)	Conclusion
GSUS	1 vs. 2					
	IDS	Increase	-2.25 (18)	.037	-0.52	Significant increase
	CR	Increase	-2.12 (18)	.048	-0.49	Significant increase
	SF	Decrease (trend)	1.82 (18)	.086	0.42	Decrease at statistical trend level
GSUS	1 vs. 3					
	ADS	Decrease	2.90 (8)	.018	0.92	Significant decrease
	SDS	Increase	-2.67 (8)	.026	-0.84	Significant increase
	CR	Increase	-4.27 (8)	.002	-1.35	Significant increase
Bytom cruise	1 vs. 2					
	ADS	Decrease	3.03 (19)	.007	0.68	Significant decrease
	RtC	Decrease	2.54 (19)	.020	0.57	Significant decrease
	RS	Decrease(trend)	2.03 (19)	.057	0.45	Decrease at statistical trend level
	SF	Decrease (trend)	1.77 (19)	.093	0.40	Decrease at statistical trend level
	PA	Increase (trend)	-1.85 (19)	.080	-0.41	Increase at statistical trend level-
Gender differentiation	GSUS (Male)	IDS Increase	-2.92 (10)	.015	-0.88	Significant increase among males
	GSUS (Female)	CR Increase	-3.15 (7)	.016	-1.11	Significant increase among females
	Bytom Cruise (Male)	ADS Decrease	3.04 (12)	.010	0.84	Significant decrease among males
	Bytom Cruise (Female)	RtC Decrease	3.36 (6)	.015	1.27	Significant decrease among females
	Bytom Cruise (Female)	ER Decrease	3.23 (6)	.018	1.22	Significant decrease among females

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This table presents the relationships between the studied constructs.

Dependent construct	Independent construct (predictor)	ANOVA	Variance of constants/slope coefficients	Covariance of constants and slope coefficients	Comments
Dependent Decision--Making Style (DDS)	Emotional Reactivity	$F(1; 29.78) = 19.85$; $p < .001$	$Var(u_{0j}) = 17.16$; $p = .006$/ $Var(u_{0j}) = 2.01$; $p = .035$	$Cov(u_{0j}, u_{1j}) = -4.77$; $p = .033$	Individuals differed in their input scores; changes over time were not symmetrical and depended on the input level. Individuals with high scores on the DDS scale were less dependent the higher their scores on Emotional Reactivity.
Avoidant Decision--Making Style (ADS)	Time	$F(1; 77.45) = 4.15$; $p = .045$	$Var(u_{0j}) = 31.52$; $p = .003$	$Cov(u_{0j}, u_{1j}) = -3.66$; $p = .057$	Individuals varied in terms of their input scores; changes over time most likely depended on the input level. Individuals with high scores on the ADS scale were less avoidant over time and with higher scores on Emotional Reactivity and Activity.
	Activity	$F(1; 37.30) = 5.94$; $p = .020$			
	Emotional Reactivity	$F(1; 35.23) = 4.25$; $p = .047$			
Resistance to Change (RtC)	Activity	$F(1; 36.60) = 10.79$; $p = .002$	$Var(u_{0j}) = 52.92$; $p = 0.066$	$Cov(u_{0j}, u_{1j}) = 4.93$; $p = .490$	Individuals with high scores on the RtC scale became less resistant if they had higher Activity ($b = -1.00$; $t(36.60) = -3.29$; $p = .002$; CI95% [-1.62; -0.38]).
Routine Seeking (RS)	Activity	$F(1; 45.68) = 10.36$; $p = .002$			Individuals with high scores on the RS scale became less routine if they had higher Activity ($b = -.34$; $t(45.68) = -3.22$; $p = .002$; CI95% [-.56; -.13])
Emotional Response (ER) to change	Activity	$F(1; 30.90) = 5.56$; $p = .025$			Individuals with higher Activity responded to the change with less stress and emotionality ($b = -.29$; $t(30.90) = -2.36$; $p = .025$; CI95% [-.55; -.04]).
Short-Term Focus (SF)	Activity	$F(1; 49.50) = 10.40$; $p = .002$	$Var(u_{0j}) = 9.44$; $p = .004$		Activity caused a shift toward lower SF scores ($b = -.28$; $t(49.50) = -3,23$; $p = .002$; CI95% [-.46; -.11]).
	Emotional Reactivity	$F(1; 45.93) = 4.82$; $p = .033$			Emotional Reactivity caused a shift towards higher SF scores ($b = .14$; $t(45.93) = -2.20$; $p = .033$; CI95% [.01; .27]).

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Dependent construct	Independent construct (predictor)	ANOVA	Variance of constants/slope coefficients	Covariance of constants and slope coefficients	Comments
Cognitive Rigidity (CR)	Time	$F(1; 73.72) = 9.62$; $p = .003$	$Var(u_{0j}) = 7.31$; $p = .005$		Time resulted in increasing ($b = .69$; $t(73.72) = 3.10$; $p = .003$; CI95% [.25; 1.13]) Cognitive Rigidity.
	Emotional Reactivity	$F(1; 41.72) = 10.30$; $p = .003$			Emotional Reactivity resulted in lower ($b = -.19$; $t(41.72) = -3.21$; $p = .003$; CI95% [-.30; -.07]) Cognitive Rigidity.
Proactivity	Activity	$F(1; 30.96) = 10.98$; $p = .002$			
	Endurance	$F(1; 30.94) = 7.52$; $p = .010$			
	Emotional Reactivity	$F(1; 30.94) = 9.59$; $p = .004$			

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Discussion

Significant, positive changes in the selected temperament-dependent characteristics were expected due to participation in an open-sea cruise on a traditional sailing ship. It was assumed that these changes from the GSUS cruise would be positive due to educational interactions. The participants of the Bytom cruise were older and more mature and participated in a shorter cruise, so higher input levels and no changes in the traits were expected.

The results for the GSUS participants show an increase in intuitive decision-making and cognitive rigidity and a decrease in short-term focus. The intuitive decision-making style is associated with a higher level of protective factors, which are determinants of mental health with a positive effect on mental health (Bavolar & Bacikova-Sleskova, 2020). After the cruise, the participants trusted their intuition more and were more likely to make decisions based on hunches and feelings, were less likely and less willing to change their minds, and had a higher tolerance for short-term inconvenience associated with change. Measurement one month after the cruise showed a decrease in avoidant decision-making and an increase in spontaneous decision-making and cognitive rigidity compared to the pre-cruise measurement. Avoidant decision-making style is associated with a lower level of protective factors (Bavolar & Bacikova-Sleskova, 2020). The participants tended to be less evasive and even to make decisions more efficiently and quickly and to be less eager to modify them. The results for the participants of the Bytom cruise show a decrease in intuitive decision-making, resistance to change, routine seeking, and short-term focus, as well as an increase in proactivity. After the cruise, the participants relied less on their hunches and feelings, adapted better to change, and were less prone to routines, not distracted by short-term inconveniences of change, and more independent and future-oriented. Greater use of adaptive decision-making strategies correlates significantly with greater psychological well-being (Páez-Gallego et al., 2020). The differences in the results between the GSUS and Bytom cruise participants may have been due to the length of the cruise and the age of the participants.

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The GSUS crew was younger and at an earlier stage of completing the goals of adolescence. The changes were different than expected and involved fewer of the constructs, but can still be seen as positive. Additional qualitative analysis is needed to confirm that intuitive decision-making may be an expression of unconscious competence and cognitive rigidity an expression of consistency in upholding one's decisions.

Using multilevel modeling, it was examined whether temperament moderates change in the listed characteristics over time and, if so, how. The temperament traits that were the most frequent significant predictors of change were Emotional Reactivity (ER) and Activity (A); the single predictor was Toughness (T). ER significantly supports growth in DDS and ADS and SF, and lowers CR and PA. A counteracts ADS, decreases RtC, RS, and ER alternately, lowers SF, and supports growth in PA. Interestingly, T counteracts PA growth.

The opposing effect of ER and a is justified by the negative intercorrelation of the two scales, obtained in validation and standardization studies. It is interesting to note the counteracting effect of PA by T, which positively intercorrelates with a in both validation and normalization studies (Cyniak-Cieciura et al., 2016). It is difficult to explain why Endurance, which is "the ability to respond adequately in situations requiring prolonged and highly stimulating activity, manifested in high resistance to fatigue and distractors" (Cyniak-Cieciura et al., 2016, p. 16), does not support a positive change in Proactivity. The results deviate from the assumptions and do not clearly confirm the hypotheses, despite meeting the assumptions of the educational environment (Wojcikiewicz & Mural, 2010).

Limitations

There are some possible limitations of the study. The sample sizes are small, the duration of impact was short, the selection of cruise participants was limited, and the traits measured were stable constructs. The small sample size and multiple variables in the models limited the power

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of the analysis (Cohen, 1992). Offsetting the negative impact is problematic due to several limitations. The first is the limited size of the crew (20 school crew and five professional crew [captain, bosun, and three mates]), which makes it impossible to enlarge the sample. The solution would be to conduct surveys on different GSUS cruises. The changing weather conditions and different experiences of the participants mean that the cruises are not identical, which may affect the crew differently. A second solution could be to conduct a cruise on a larger sailing ship or to compare School Under Sails cruises on different sailing ships. Ships differ in size and crew size, sailing characteristics, personnel, atmosphere on board, interior design (more or less conducive to the school crew socializing), type of rigging (determining the way the crew works), and shape of hull (affecting the ship's behavior in different weather conditions). These variables can affect the crew's experience.

The respondents took part in relatively short cruises. Even short cruises affect constructs that are more susceptible to change, and effects can be seen after just four days (McCulloch, 2002). Cruises of 5–15 days can positively affect measurable constructs (McCulloch et al., 2010). Only cruises lasting at least three weeks can effectively impact traits (Romaniuk, 2015b) other than self-esteem or sense of health (Norris & Weinman, 1996). GSUS cruises typically last three weeks, allowing the crew to integrate, get to know the ship, experience adventures, gain experience in different conditions, and take part in more situations that can have an educational and educational impact. In the case of the GSUS cruise under review, opportunities were fewer due to pandemic-related restrictions, the cruise lasted only two weeks, and the weather conditions were exceptionally mild. Sea education as adventure education needs time to be effective (Neill, 2018; Rickinson et al., 2004).

The participants had the opportunity to sign up for the cruise without any qualification. Previously, applicants participated in a competition, which involved preparing educational materials about an element of the planned cruise itinerary and writing a cover letter. This provided means for selecting the most motivated young people. In the cruise in question, too few people entered the competition due to the pandemic, so the

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crew was supplemented with people recruited freely. The lack of results in such a group can be an argument that sail training is not for everyone, and only those who are positively motivated and committed are likely to benefit from its positive influence. The composition of the group should not be a factor that prevents positive change, as the effects of sail training are reported in all participants, i.e. young and old (Romaniuk & Łukasiewicz-Wieleba, 2020), people with and without disabilities (Romaniuk, 2014), as well as those with other special needs (Caourso & Borsci, 2013).

The selected traits (proactivity, decision-making style, consideration of future consequences, and resistance to change) may be stable constructs, difficult to change in such a brief period (despite the intensity of influence) or resistant to change at all. A possible explanation for the lack of developing proactivity may be the high-input external controllability of adolescents, who are accustomed to being guided into action by parents, teachers, and influencers. A high degree of autonomy over some of the ship's activities should have influenced the growth of proactivity (Wu et al., 2018), but the cruise revealed the need to directly manage the participants on many issues, which may have led to the lack of proactivity development. This is indirectly related to the lack of change in decision-making style. The brief exposure did not allow for previous habits to be shed or create enough situations to stimulate autonomous decision-making; therefore, it did not provide sufficient material for training. The respondents may have been too young or did not yet have time to develop their individual decision-making style. The tool used to measure this should capture any changes in this area and should be chosen correctly (Loo, 2000). The lack of expected changes when considering future consequences may be due to the reasons mentioned above or to the stability of this construct (Petrocelli, 2003; Toepoel, 2010). It was hypothesized that the cruise experience might be significant enough to contribute to changing perceptions of the future, but the impact may have been too short and weak. Developing a balanced perspective of time among young people and showing them the importance of learning from past mistakes and developing appropriate planning for the future is one of the intermediate goals of sail training (Romaniuk, 2020c), as it is

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linked to many important behaviors, such as health (Piko et al., 2005), motivation (Seijts, 1998), physical activity (Adams & Nettle, 2009), or even leisure choices (Shores & Scott, 2007), and thus translates into continued functioning and quality of life. This justifies measuring this construct and expecting positive changes in it. Resistance to change may have been too entrenched to be reduced. It is possible to overcome it (Coch & French, 1948), especially with the support of others (Lawrence, 1969), and while attempts to do so may generate resistance, resistance itself can be a source of change (Ford et al., 2008). Again, on a cruise of this length, the number of interactions that could be the seeds of change may have been too small (Klonek, 2014).

Conclusion

Earlier studies that inspired the present analysis gave hope for the desired results, confirming the hypotheses. The results of the exploratory research give reasonable hope for effectively applying the conclusions to practice. Taking into account the existence of different temperament structures (Zawadzki & Strelau, 2003) and the fact that learning outcomes are conditioned by temperament properties (Nosarzewski, 1999), it can be assumed that the development of a dedicated educational program for voyages similar to School Under Sails, which take into account the individual differences of the participants and include a range of techniques adapted to the most popular temperament types, would have a share in increasing the effectiveness of interactions. Considering the fact that temperament determines styles of action (Wieczorkowska-Wierzbińska, 2011), it can be thought that it would be similarly linked to decision-making styles, thus enabling, differentiating, and speeding up any planned development in decision-making style. It is worth starting to modify behavior in adolescent cruise participants by cognitively preparing them with an emphasis on education and indirectly shaping perceptions of the future. Additional analysis "related to learning about the presented time perspectives" (Zimbardo & Boyd, 2015) of cruise participants and their

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correlation with the CFC score can bring new, broader insights to the problem and can facilitate the adjustment of educational interventions to intentionally prepare youth to adaptively cope with change (Palmer, 2004), which can lead to the growth of proactivity.

The research made it possible to check spontaneous changes in the indicated characteristics of cruise participants and allowed us to assess the possibility of shaping them intentionally. It is necessary to prepare a dedicated educational program that includes interactions that shape the desired characteristics and takes advantage of the nature of a sailing ship, the subsequent evaluation of which will make it possible to formulate conclusions about its effectiveness. Sail training is an effective way of influencing young people and should be developed by implementing recommendations based on the conclusions of empirical studies.

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Appendix

Psychometric properties of the instruments

Scale	Original			Translation / Pilot study		
	M	SD	α	M	SD	α
General Decision-Making Style						
Rational	3.92–4.16	0.33–0.57	.77–.85	3.91	0.57	.71
Intuitive	3.0–3.49	0.70–0.78	.78–.84	3.59	0.60	.73
Dependent	3.23–3.45	0.63–0.74	.68–.86	3.11	0.81	.83
Avoidant	1.84–2.56	0.65–0.97	.93–.94	2.23	0.84	.89
Spontaneous	2.46–2.55	0.79–0.90	.87	3.11	0.60	.64
Resistance to Change	3.19	0.63	.88	2.97	0.51	.75
Routine Seeking	2.91	0.84	.82	2.40	0.71	.73
Emotional Reaction	3.57	0.89	.78	3.07	0.93	.74
Short-term Focus	3.15	0.81	.78	2.53	0.91	.79
Cognitive Rigidity	3.22	0.86	.78	4.00	0.78	.65
Proactive Attitude	28.92	4.09	.79	28.91	3.91	.83
Consideration of Future Consequences	41.4–43.8	7.02–7.86	.80–.86	42.14	6.30	.76
FCB-TI(R)						
Briskness			.73–.79	46.14	5.70	.81
Perseverance			.75	40.31	6.70	.83
Mobility			.78–.83	21.55	5.76	.88
Sensory sensitivity			.76–.79	45.03	5.44	.79
Endurance			.79–.83	39.48	7.59	.88
Emotional reactivity			.85–.88	34.51	7.80	.87
Activity			.83–.86	41.56	6.89	.85

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