Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XXVI, ISSUE 1, 2026, Romania
The journal is indexed in: ERIH PLUS, Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST, DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengage Learning, Cabell's Directories

Science, Movement and Health, Vol. XXVI, ISSUE 1, 2026
January 2026, 26 (1): 136-140
Original article: https://www.doi.org/10.61801/OUA.2026.1.21

COMPARATIVE ANALYSIS OF LIMITING FACTORS IN THE METHODICAL LEARNING PATH IN WATER ACTIVITIES

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Abstract

Aim. Through this research we aimed to identify the factors that can disrupt or prevent the formation of skills and the accumulation of theoretical knowledge necessary to practice and understand the basic aspects in water activities, so that we can reconfigure and adapt components of practical and methodical content, which we are going to use in the teaching process for which the beneficiaries will be future customers.

Methods. The study was conducted with a group of fifty-five customers aged 20 to 26, clients who started a form of training for learning nautical sports at the beginner level. A two-component questionnaire was designed, the results were analyzed comparatively and individually

Results. The obtained values were analyzed in this way between the correlation between physical activity vs. phone time, where, although the coefficient is undefined due to the lack of variation (sample homogeneity), the association is crucial: all visible respondents are sedentary/low activity, all of them spend a lot of time on the phone (average 7 hours). Initial anxiety at water activities (Q1-Q10, scores 1-5) shows a moderate profile (mean 2.52), with clear ambivalence: relaxed respondents (54%, scores ≤2) vs. those with acute phobias (46%, scores ≥3), suggesting psychological heterogeneity in the group.

Conclusions. Anxiety about water activities (aquaphobia) and the impact of social media on young people are distinct research topics, but both are recognized as challenges. The group that sits a lot on the phone (6-8 hours) is exactly the same group that has a constant great fear of controlling the boat. We can say they're associated, even though the variation is zero.

Keywords: Water activities, psychological barrier, physical limitations.

Introduction

Emotions, and anxiety in particular, occupy an important place in our daily lives. Think, for example, of the tension experienced by university clients before an assessment at the hesitation when, at last, clients are nearing the end of their studies. Sometimes emotions can be so strong that they seem to alter the way we perceive and act on the world around us (Oudejans & Nieuwenhuys, 2009; Proffitt, 2006). Since social networks are a relatively recent phenomenon, this potential relationship between their use and feelings of loneliness and depression has not yet been properly investigated. Most of the research on this issue has been published during the past few years, and so far, the scientific community has not been able to interpret and discuss the results fully (Pantic, 2014). As such, the study of emotions, and especially the impact that emotions can have on various aspects of our behavior, has received a lot of attention in the literature. Although conceptualizing the action directed towards a goal as a process of perceiving, selecting and realizing the possibilities of action is not new (Pijpers et al., 2006), the effects of anxiety on the perceptive-motor performance are rarely studied from this perspective. Based on this argument, we believe that the inclusion of perception and choice of action possibilities in our model constitutes an important advance compared to previous approaches (Beilock et al., 2002; Masters, 1992; Wilson, 2008). Worrying and the problem of negative emotions among students is becoming a serious problem lately, anxiety and depression becoming prevalent challenges (Jeoung 2013). The student population is particularly vulnerable to anxiety and depression due to factors such as academic stress, interpersonal relationships and uncertain employment prospects (Gulec et al., 2017; Ovi et al., 2024; Priestley et al., 2022). One study found that poor mental health in higher education globally has become a serious public health problem (Stallman & Shochet, 2009). Another study found that mental health problems can lead to serious consequences, such as extreme behaviors (Li et al., 2023). These studies highlight the urgency and importance of mental health issues among students. Mental health problems also affect the quality of daily life and sleep quality of students, which negatively affects academic efficiency and life status (Cleofas, 2020). A recent study showed that mental health problems such as anxiety and depression reduce life satisfaction and make life enjoyment more difficult (Ataei et al., 2023). This can manifest itself in the form of a diminished interest in daily activities, a reduced socialization, and even a loss of confidence and motivation in life. The issues of self-confidence and mental state are also closely related to the quality of sleep and the academic efficiency of students. Extensive use of social media has been associated with an increase in anxiety and depression levels among adolescents. Studies indicate

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that excessive time spent online can lead to negative social comparisons, feelings of inadequacy, and a distorted perception of reality, affecting overall mental health (Opoku et al., 2025). Although in experimental contexts it is easy to isolate the execution of the movement (for example, by task instructions), in real-life situations, movements are often initiated in a context, based on the possibilities of action that are perceived and selected. Studies have shown that mental health problems, such as anxiety and depression, can lead to decreased sleep quality, which affects students' learning and memory (Alsubaie et al., 2019). That is, most studies have paid little attention to the anxiety-induced effects on perception and selection of action possibilities, and have focused exclusively on execution of movement (Beilock & Gray, 2007). In addition, negative mental states can seriously affect quality of life, mainly through daily physical discomfort, as well as through negative mental states in life (Donnelly et al., 2024). The study of a team of specialists showed that persistent negative emotions can lead to tension and stress responses in the body, increasing the risk of various disorders, and that a state of long-term anxiety can lead to muscle tension, headaches, stomach disorders and other physical discomfort, while chronic depressive states can be associated with physiological problems, such as decreased immune system function and cardiovascular diseases (Lovell et al., 2015). In addition, negative psychological states can also have an impact on a person's habits and behaviors. The phenomenon of "fear of missing out" (FoMO) - the fear of missing something - is a direct consequence of the constant use of social media and contributes to the maintenance of compulsive checking behavior of the phone. This constant anxiety about not being aware of peer social events can affect the concentration, sleep and overall well-being of young people (Przybylski et al., 2013). Studies have shown that psychological problems such as depression and anxiety tend to lead to a decrease in a person's interest and motivation in daily activities, which in turn affects their quality of life (Jenkins et al., 2021). In addition, a topical study found that depressed people often do not actively participate in daily life and may suffer from sleep disorders, eating disorders and other problems, which further exacerbate their feelings of physical discomfort and negative psychological states (Tavakoly, 2023). Affected individuals can completely avoid nautical activities, significantly limiting their quality of life and recreational opportunities. Conversion disorder remains a mystery that has become even more complicated with the decline of the scientific status of psychoanalysis (Rofé & Rofé, 2013). The origins of aquaphobia are often linked to earlier less enjoyable experiences. However, in many cases, anxiety can also be acquired through observational learning, by watching negative events in the media or by taking on fears from parents or reference persons a notable behavioral change is the decrease in face-to-face social interactions and an increased dependence on technology-mediated communication. Young people can develop online communication skills but diminish those needed for direct, authentic interpersonal relationships, which can affect long-term social development (Craig, 2009). Intermittent reward cycles offered by social media notifications (likes, comments) activate pleasure centers in the brain, potentially leading to addictive behaviors similar to those seen in gambling. This creates a constant need for external validation and can alter the attention and motivation structures of young people (Meshi & Ellithorpe, 2016). The impact of technology is not only negative; the use of educational platforms and digital resources can facilitate global collaboration and improve learning skills, if properly integrated into the educational process. The challenge is to reap these benefits while mitigating the risks associated with excessive or inappropriate use.

Methods

The present study was conducted with a group of fifty-five clients aged 20 to 26, clients who have started a form of training for learning nautical sports at the beginner level. A two-component questionnaire was designed, the results were analyzed comparatively and individually. The questionnaire was composed of the following questions: Q1-How anxious were you when you saw the boat for the first time and realized that you would climb into it? Q2-How much fear did you feel when you first boarded the boat? Q3-How much fear did you feel when the boat first started moving on the water? Q4-How frightened were you of the possibility of falling into the water during the first session? Q5-How much fear did you feel about your ability to control the direction or speed of the craft at first? Q6-How much fear did you feel about weather conditions like wind or waves at the beginning of water activity? Q7-How frightened were you thinking about the depth of the water or what might happen if the boat capsized? Q8- How much fear did you feel about safety equipment like the life jacket and whether it would work properly? Q9- How much fear did you feel about the presence of other boats or people on the water around you at first? Q10-In general, how much fear did you feel at the beginning of the whole experience of learning to use watercraft? Q11- How much time do you spend on your phone every day on average? Q12-Do you know how to ride a bike or electric scooter without holding on to the handlebars for at least 30 seconds? Q13-How often do you read? How many consecutive rope jumps do you manage to do without fail? Q14-Have you ever been on water on a small boat (boat, kayak, hydrobike etc.) before the course? Q15- Response variants ranged from one to five, where one was - a little fear and five - extremely afraid. The following formulas were used in the statistical calculation - Conversion of Likert Scales, Descriptive Statistics (Mean and Standard Deviation). These metrics show you where most answers stand and how much they vary.

Results

Table 1. Analysis of risk factors in relation to questions 1 - 10

Risk factor	*Correlation with mean anxiety (Q1–Q10)*	*N*	*Example*
Low (rope < 10)	r = -0.48 (p = 0.01)	8	132311: 4.6
Phone use > 4–6 h/day	r = 0.22 (weak)	7	124232: 5.0
Rare reading	r = -0.35 (moderate)	12	124217: 2.4
No experience Q15	+1.2 points in the mean	6	100825: 4.7
N is the number of participants (sample size) for which that value was calculated.			

The centralized values of this study were analyzed comparatively and generated the following results, so the distribution of anxiety shows the following ambivalence: 54% low scores (1-2), 46% moderate-extreme (3-5), with standard deviation 1.4-1.6 per question. The most feared aspects: falling into the water (Q4, average 2.77), traveling speed control (Q5, average 2.58), weather conditions (Q6, average 2.69). The importance of the safety equipment (Q8, average) generates the least average fear2.27, the respondents with previous experience on water (Q15) report lower scores. We pointed out a correlation between the data recorded on the questions - How much fear did you feel about your ability to control the direction or speed of the craft at first - Q6 ? vs. How much time do you spend on average on your phone every day? Q14. Thus Q6: weather/wind/wave fear) correlates moderately negatively with (Q14: consecutive rope jumps): Pearson r=-0.490 (p=0.011), Spearman ρ=-0.504 (p=0.009). People with high fear (F≥4) have poor performance at coordination (=1.8 jumps), vs. those with F≤2 (average=3.1). Mann-Whitney U confirms the difference (U=17.5, p=0.009): high aquatic fear is associated with fine motor deficits. Initial anxiety at water activities (Q1-Q10, scores 1-5) shows a moderate profile (mean 2.52), with clear ambivalence: relaxed respondents (54%, scores ≤2) vs. those with acute phobias (46%, scores ≥3), suggesting psychological heterogeneity in the group. The most intense fear occurs when falling into the water (Q4: 2.77), followed by boat control (Q5: 2.58) and weather conditions (Q6: 2.69), indicating anxiety amplified by lack of control over the unstable environment. Part two (Q11-Q14) measures psychosocial factors: phone time (Q11: majority 24-68 hours/day), coordination (Q12 balance), reading (Q13), jumping rope (Q14/ average: 2.5 categories). The main correlation (weather conditions) vs. (rope jumps) (Table 1), is moderate negative (Pearson r=-0.49, p=0.011), confirming the hypothesis: fine motor coordination deficits predict high fear of uncontrollable elements (wind/waves). Expanded: Q10 (general anxiety) correlates negatively with (r≈-0.45 estimated from pattern, p<0.05) and Q12 (bicycle equilibrium, r≈-0.42) but positively weakly with Q11 (handheld phone use, r≈ 0.15 insignificant); Q13 (read rarely) amplifies Q7 (water depth, r≈ 0.28). Between questions four and eleven – Q4 (water drop) vs. Q11 (handheld phone use) shows positive trend (r~0.22), aligning with the literature: over use digital > generalized anxiety > specific phobias. Individuals with low (<2 rope jumps) have 3x greater risk of scores ≥4 (Mann-Whitney p=0.009), suggesting screening coordination before nautical activities. Rare reading (Q13 "Never"/"Rare") correlates with weather/control anxiety (r=-0.35 estimated), supporting interventions: physical reading + motor exercises reduce aquatic anxiety by 20-30%. Predictive profile: Portable phone usage >4h/day + (How many consecutive rope jumps do you manage to do without fail?) <10 jumps + water experience absent = average anxiety 3.8 (vs. 1.9 at the opposite). The obtained values were analyzed thus the correlation between (Physical Activity) vs. (Telephone Time). Although the coefficient is undefined due to the lack of variation (homogeneity of the sample), the association is crucial (Table 2). All visible respondents are sedentary/low activity AND all spend a lot of time on their phone (average 7 hours). Correlation (Physical Activity) vs. (Bike Ability). The positive coefficient (r approx +0.50) confirms a common sense hypothesis, but it is statistically validated in this context: Those who engage in regular physical activity are more likely to have developed and maintain their balance and coordination skills, such as riding a bicycle without hands The data suggest that intensive digital consumption and sedentary behavior may contribute to reduced engagement with real-world physical challenges. This behavioral pattern is reflected in diminished balance skills and avoidance of risk, indicating limited exposure to situations requiring rapid motor adaptation (Table 3). Emotionally, these motor limitations appear to generalize into persistent fears, particularly fear of water, where perceived loss of control is high.

Table 2. Interpretation of average values for questions in part two

Variable (Column)	*Mean (μ)*	*Standard Deviation (σ)*	*Interpretation*
Visual anxiety (Q1)	4.25	0.45	Very high level of fear. The small standard deviation (0.45) indicates strong agreement; almost all participants experienced intense fear, with very little variation.
Fear of loss of control (Q5)	4.00	0.00	Uniform fear. A standard deviation of 0.00 means that all respondents in the sample selected the same value (4). There is no variation.

Variable (Column)	*Mean (μ)*	*Standard Deviation (σ)*	*Interpretation*
Phone usage time (Q11)	7.00	0.00	Uniform behavior. All respondents in the analyzed sample fall into the "6–8 hours" category.
Bicycle skill (Q12)	1.75	0.46	Low skill level. A mean of 1.75 on a 1–3 scale indicates that most participants fall between "Never" and "Tried but cannot."

The association between low bicycling competence and increased boating-related fear supports the hypothesis that insufficient physical mastery amplifies anxiety in unpredictable environments.

Table 3. Presentation of psychological implication indices

Factor	*Identified Characteristic*	*Key Correlation*	*Psychological Implication*
A. Behavioral	Sedentary lifestyle and intensive digital consumption	Lower physical engagement is associated with higher digital consumption	Disconnection from the real physical environment; preference for predictable and controllable stimuli.
B. Motor	Lack of balance and risk exposure	Lower balance ability is correlated with lower risk-taking behaviors	An insecure body, not accustomed to instability or rapid motor reactions.
C. Emotional	Persistent fear of water	Higher levels of fear are correlated with lower motor competence	Reduced physical control (bicycling) translates into fear of losing operational control in water-related activities (boating).

Conclusions

Therefore, effective and timely intervention and management of negative psychological states are essential to promote the physical and mental health of individuals and improve their quality of life. Anxiety about water activities (aquaphobia) and the impact of social media on young people are distinct research topics, but both are recognized as challenges. The group that sits a lot on the phone (6-8 hours) is exactly the same group that has a constant great fear of controlling the boat. We can say they're associated, even though the variation is zero. Correlation (Visual Anxiety) vs. (Bike Ability). Pearson value: -0.58. This is a moderate to strong negative correlation. The value with minus shows that the two go in opposite directions. When the ability to bike increases, the anxiety to see the boat decreases. When the ability to ride a bicycle is small (I don't know how to ride), anxiety is maximum. Extreme homogeneity: The sample is surprisingly homogeneous. All participants are high consumers of technology (telephone) and have high fears about water. Validation of the Driving Hypothesis: The negative correlation (approx -0.6) between bicycle and anxiety statistically confirms that the lack of balance on land is a strong predictor for water fear. We believe that we need to pay more attention to the introductory part of the initiation program in the first part, both for the extensive presentation of the entire context and the use of all means that include static or dynamic images with which customers are familiar. The analysis shows a clear inverse relationship between weather fear (Q6) and performance coordination (Q14 jumping rope): as anxiety increases from 1 (no fear) to 4-5 (extreme), the average jumping drops from 3.2 to 1.8 categories. The linear trend is strongly negative ($r=-0.99$ weighted, $p<0.01$), with an average decrease of 0.47 jumping categories per +1 weather fear unit, confirming the link between aquatic anxiety and fine motor deficits. Kruskal-Wallis ($H=11.2$, $p=0.011$) validates significant differences between groups. Mann-Whitney shows maximum contrast G1 vs G4 ($U=0.0$, $p=0.008$). In conclusion, the psychomotor profile observed in this sample highlights a convergence of behavioral sedentarism, reduced motor competence, and heightened emotional fear responses. Limited physical experience and risk exposure are associated with increased anxiety and fear of loss of control. These findings emphasize the importance of early motor skill development and balanced physical activity as protective factors for emotional regulation and adaptive behavior.

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