

Survival in the Real and Digital World – An Example of Innovative Support for Preventive Medicine Using INNOAGON Methods

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ABSTRACT

The cognitive goal of this article is to present knowledge about the yet unknown proportions of convergence and divergence between the subjective sense of one's own motor and mental competences to survive in various circumstances of the natural environment and social interactions with the results of applied motor, non-motor and mixed-motor simulations, among young women and men preparing for a profession related to the universal human values hypothesis. The study enrolled 32 students from the University of Rzeszów studying sports and military. No distinction has been made based on sex, as it was assumed that that awareness of threats and competence to survive are essential characteristics of every human being, regardless of sex. The level of perception and survival skills has been studied in two areas, i.e. in the real world (RW) and digital world (DW). Respondents correctly identify the main areas of survival competence in the real and digital worlds. There are large discrepancies between imagined and empirically verified survival skills, in both areas studied. There are empirically proven grounds for implementing and objectively assessing the competencies of survival in the real and digital world as specific components of somatic, mental and social health. It is necessary to objectively verify these competences with simple and easily accessible research tools.

Keywords: Innovative agonology, Students, Five basic survival skills

INTRODUCTION

In this article, the phenomenon of survival is identified with a new applied science, INNOAGON (innovative agonology), the mission of which coincides with the hypothesis about the primary of the universal human values: 'survival of humans and nature in a non-degenerate form and responsibility for coming generations' (Piepiora and Kalina, 2023, p. 285). Therefore, this is a very broad understanding of the term "survival", which, in our view, connects a micro scale with a macro scale in a distinct manner. This is also how we perceive INNOAGON's methodological and application offerings aimed at strengthening all health dimensions together with survival ability from a micro (personal safety) to a macro scale (Kalina, 2020, p. 171, 2024a, Kalina and Kruszewski, 2023).

We have been studying elementary phenomena from the perspective of knowledge acquired so far, not only about extreme threats to health and life of a human acting in a natural and artificial (created by a human) environment (Tomczak and Bąk, 2019; Bąk, 2020; 2021). We also strive to expose as many elements from the complementary perspective and from the view of the cited literature discussing INNOAGON and preventive medicine (Kalina, 2023, 2024; Wicher et al., 2025). This perspective is very broad and individual scientific papers may as well be devoted to, e.g., the notion of combining conventional treatment methods based on pharmaceuticals with recommendations that do not cause any negative side effects. On the contrary, they will at least reinforce the therapeutic effects (that are associated with a given disease) but they will also have preventive effects that go beyond a given treatment profile. Such example is the idea of incorporating programmes that reduce the risk of injury from unintentional falls into treatment procedures at sanatoria (Wicher et al., 2025).

The cognitive goal of this article is to present knowledge about the yet unknown proportions of convergence and divergence between the subjective sense of one's own motor and mental competences to survive in various circumstances of the natural environment and social interactions with the results of applied motor, non-motor and mixed-motor simulations, among young women and men preparing for a profession related to the universal human values hypothesis.

MATERIAL AND METHODS

The study enrolled 32 students from the University of Rzeszów studying sports and military. No distinction has been made based on sex, as it was assumed that that awareness of threats and competence to survive are essential characteristics of every human being, regardless of sex. The level of perception and survival skills has been studied in two areas, i.e. in the real world (RW) and digital world (DW). In the first stage, students declared the types of needs and threats and their own competences in given area. In the RW area, these were declarations of skills (RWD), which involved the so-called *Five Basic Survival Skills* (shelter, fire, food and water, first aid, rescue signalling). Correspondingly, the following main threats (DWD) have been identified in the DW area: 'disinformation and manipulation', 'identity theft and fraud', 'cyberbullying', 'health threats', and 'dehumanization'.

Table 1: Methods of verifying declared skills in the RW area.

Verified Element	Shelter	Fire	Food and Water	First Aid	Rescue Signalling
Practical task	Constructing a shelter from scratch in a forest	Starting a fire using survival methods	Preparing a meal from fish and available plants + water extraction and treatment	Demonstrating various improvised methods of dressing wounds and fractures	Preparing elements for quick alarm signalling

Declarations of students have afterwards been empirically verified through practical performance tasks. In the RWV area (real world verification), these were verified during a survival camp (Table 1).

In the DWV (digital world verification) area these were verified using computer tests and situation assessment (Table 2).

Table 2: Methods of verifying declared skills in the DW area.

Verified Element	Disinformation and Manipulation	Identity Theft and Fraud	Cyberbullying	Health Threats	Dehumanization
Practical task	Disinformation and manipulation resistance test	Identification of threats related to identity loss and ICT fraud	Identification of cyberbullying (hate, humiliation, harassment, intimidation, exclusion)	Identification of physical, mental and social health risks	Identification of threats related to isolation from people, denial of humanity

The first author of this article has taken part in the study as an observing participant. The students have also declared being motivated for survival activities in both areas. Creativity, teamwork and level of information deprivation (students were not able to use their phones for 48 hours) have been additionally assessed in the RWV area. Declarations of the need to use a phone and associated depressed wellbeing have been collected at 12-hour intervals.

RESULTS

Real World (RW) Area

Students' declarations revealed a high awareness of the needs and threats in the real world (RW). As far as the identification of the Five Basic Survival Skills is concerned, the vast majority of students were able to identify the main survival needs, while declaring competence in this area, with the most significant being 'shelter' (94%), 'fire' (91%), 'rescue signalling' (91%) (Figure 1).

Empirical verification in the RW area revealed differences in declarations made and competences demonstrated.

Many of the respondents did not fully confirm the skills they had previously declared (Figure 3). The highest level of convergence was noted for competences associated with 'food and water' (63%→63%) and 'first aid' (84%→81%) and the lowest level was observed for 'shelter' (94%→66%).

The students surveyed had high motivation to undertake survival activities, particularly in the RW area (average motivation 9.1 on a scale of 1–10), and were slightly less motivated in the DW area (8.2). When performing survival tasks during field activities (RW area), the students revealed high creativity (4.1 on a scale of 1–5). In addition, 67% of the participants actively engaged in activities that required cooperation with other participants.

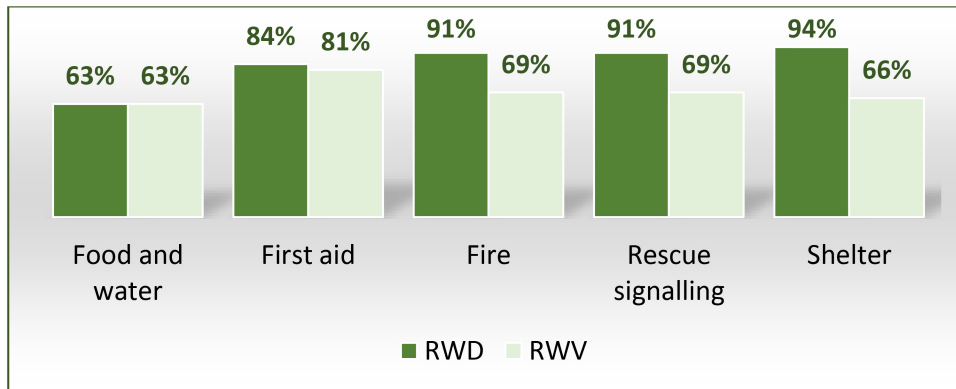


Figure 1: Average results of declared (RWD) and verified (RWV) real world (RW) survival skills, ordinal variable – level of differences (source: own research).

The average level of revealed differences between declarations and skills was 18% in the RW area.

The research revealed psychological deficits in the study group (Figure 3). Students most often defined feelings related to having no access to their phones as “anxiety” caused by no access to information. Only one person consistently declared no need in this regard.

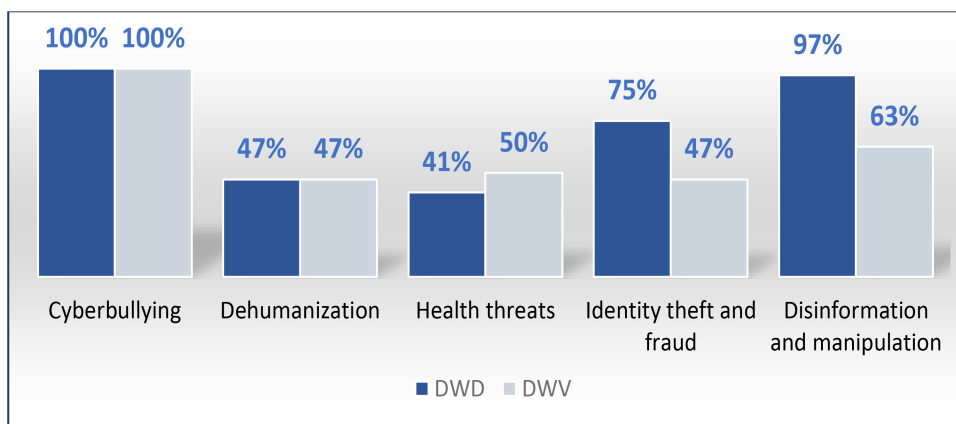


Figure 2: Student declarations regarding the need for access to a smartphone, ordering variable: deprivation time (source: own research).

Digital World (DW) Area

As far as declarations regarding functioning in the digital world (DW) are concerned, a high awareness of the main threat factors and declared competences was revealed (Figure 2). Respondents perceived a high level of threat from ‘cyberbullying’ (100%), ‘disinformation and manipulation’ (97%), ‘identity theft and fraud’ (75%). In contrast, awareness of social

(‘dehumanisation’ 47%) and health-related (‘health threats’ 41%) threats was surprisingly low (Figure 2).

A greater convergence of declarations and skills was revealed than in the DW area. Respondents were able to accurately identify the main threats they identified in their declarations: ‘cyberbullying’ (100%→100%) and ‘dehumanization’ (47%→47%); the greatest difficulty was encountered while identifying ‘disinformation and manipulation’ (97%→63%).

The average level of revealed differences between declarations and skills was 15% in the DW area.

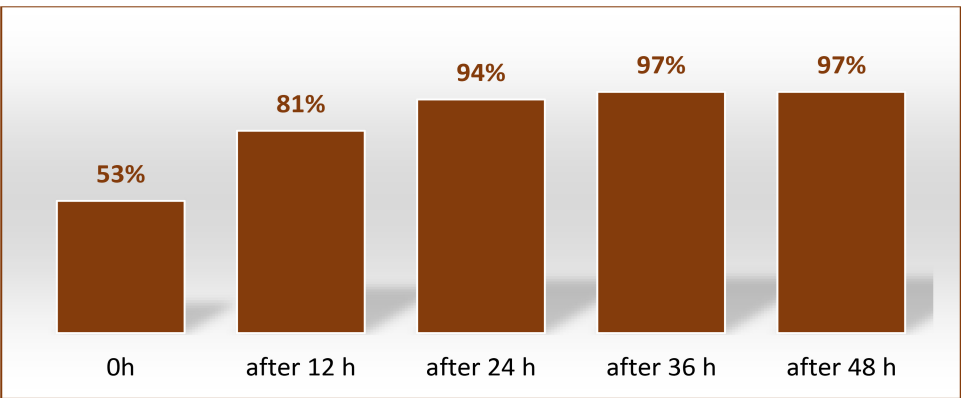


Figure 3: Average results of declared (DWD) and verified (DWV) real world (RW) survival skills, ordinal variable – level of differences (source: own research).

As a source of their competence, 69% cited their own activity and 94% the use of other people’s experience (Internet, YouTube, personal relationships).

Those with the highest competences (RW+DW) were highly motivated and creative but often did not cooperate in a group. On the other hand, those with the lowest competences were less motivated but were eager to cooperate with other participants.

DISCUSSION

As far as methodology is concerned, these study results are closest to the concept of ‘innovative agonology’, an applied science dealing with promotion, prevention and therapy related to all dimensions of health and concerning the optimisation of activities increasing the ability to survive (from a micro to a macro scale) (Kalina and Kruszewski, 2023, p. 193). If the acquisition of survival competencies is considered, whether in the real or digital world, as a preventive measure for individual health, this fact generates far more far-reaching implications. On a macro scale, we can even assume that we are discussing broadly understood social and mental health. It is true that high levels of willingness to cooperate and motivation or dependence on smartphones revealed by the study are something else. On the other hand, differences in the subjective assessment of one’s own competences versus possessed (proven) competences for survival reveal

dilemmas related to the objective measurement (or self-awareness) of these competences. From the point of view of innovative agonology, these are fundamental dilemmas, related mainly to the difficulties in measuring mental and social health (Dobosz, 2024, p. 130). Even if based on the simplest indicators, measurement is a fundamental prerequisite for confronting one's own subjective sense (Kalina, 2012; Bąk et al., 2019).

It is easier to measure elements of somatic health, and the results of pilot studies in young men and women (Dobosz, 2018, 2019) demonstrate their cognitive and applied value. Only to a certain extent it is easy to confront one's own sense of survivability with objective indicators. There is an infinite number of situations in which a person can lose their life, health or freedom. However, the methods recommended for military use (Tomczak, 2022), the results of unique experiments (Tomczak, 2013, 2021, 2022), together with imagination, creative disposition of researchers, methodological competence and their sense of responsibility are the main prerequisites for constructing original empirical systems that meet the criteria for scientific measurement of phenomena.

Therefore, appropriate task categories were constructed to measure survivability (both in the real and digital world) in order to make this measurement objective, for the purpose of results of own studies presented here. This methodological procedure, which meets the criteria for accurate scientific measurement, brought the expected results. Students' ideas were confronted with reality that was deliberately created experimentally, but therefore based on direct evidence. Revealed deficits provide an empirical basis for educational measures in these areas. The effectiveness of such measures has been acknowledged in various studies using easy-to-use research (and educational) tools (Klimczak and Kalina, 2020; Gąsienica-Walczak and Kalina, 2021; Kalina et al., 2024). The greatest divergence has been revealed in the digital world (DW) area, which is of particular significance given the age of participants. The entire group is the so-called 'Generation Z', i.e. the generation for whom digital reality is naturally intertwined with or often even preferred to the real world. According to their declarations, they derive their knowledge (the most reliable one in their opinion), not only in the field of 'digital survival', mainly from the media (Internet, YouTube). This is a generation raised in a fully digitalised society, but often unaware of digital risks. Furthermore, they have been hit hard by the COVID-19 pandemic (Bąk, 2020). This justifies the need for education, tailored to this generation's specific perception of the surrounding reality.

CONCLUSION

1. There are empirically proven grounds for implementing and objectively assessing the competencies of survival in the real and digital world as specific components of somatic, mental and social health.
2. It is necessary to objectively verify these competences with simple and easily accessible research tools.

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