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The challenges of conducting practical exercises in the scope of an adapted educational process in higher education institutions during the Covid-19 epidemic

Abstract: The Covid-19 epidemic that emerged in March 2020 caused a situation in universities where the implementation of many forms of the study process had to be adapted to the restrictions and recommendations for work during lockdowns. The implementation of practical forms of the study process was a particular challenge. The purpose of this work is to show the possibilities of adapting practical swimming exercises and the basics of rescue from the water, which were included in the first year of the undergraduate study course of kinesiology ($n = 45$), a programme conducted at the Faculty of Health Sciences at the University of Primorska. The results show that the students achieved statistically significant progress in the self-assessment of swimming skills, the time of swimming 100 m and in the length of underwater swimming, despite the interrupted implementation and subsequent adapted condensed implementation of practical exercises during the period. The results vary depending on the group, here as categorised by swimming ability and the duration of the practical exercises. When adapting the implementation of practical forms of study, special attention should be paid to how the purpose of these practical forms of study—that is, the real practical experience of participants in educational programmes—can be maintained; this is analysed by taking into account the possibilities of implementation and providing limitations and valid recommendations.

Keywords: practical exercises, kinesiology, swimming, education, adaptation, Covid-19

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Introduction

The Covid-19 epidemic, which was officially declared in Slovenia in March 2020, resulted in higher education institutions having to adapt the implementation of their study programmes and move to remote learning. Using suitable information and communications technologies (ICTs), many theoretical subjects could be adapted to make remote learning possible, making it possible for the study process to be carried out with the help of online learning environments or tools. In addition to its benefits, implementing online study programmes also has many downsides (Bennett and Green 2001; Kaushik 2016; Nicolaides 2012; Radovan and Kristl 2020; Rupnik Vec et al. 2020). When engaging in and encouraging online learning, it is important to ensure sufficient group bonding and community building. Because students communicate with the teacher at a distance, the activities must be very well planned. The teacher must carefully consider which instructional materials and activities to use to achieve the projected educational goals and outcomes. The selection of suitable work methods and study materials is paramount because it determines the type of online student participation supported by online classrooms and ICT (Radovan and Kristl 2020). The efficiency of distance education depends on the different types of preparedness relating to the type of technology used, course content and pedagogy, along with the ability to monitor and evaluate the educational process and progress (UNESCO 2020). Numerous studies have shown the changing characteristics of students engaged in the educational process, pointing to the necessity of using active forms of teaching and learning. Some activities that require active participation are practical forms of the educational process (Kaushik 2016; Nicolaides 2012). The implementation of such practical forms (e.g., laboratory work and field exercises, mandatory internships, job-shadowing and practical classes) have experienced various adaptations during the Covid-19 epidemic, with many looking for the most optimal solution. Some practical classes could not be implemented because of it being impossible to use the necessary facilities and equipment, so they had to be rescheduled. One example of such classes is practical swimming and water rescue classes, which could not be implemented without access to indoor pools.

Swimming lessons constitute a process in which the teacher must evaluate each student's initial swimming competence and skills, monitor interim changes and then assess and evaluate the student's progress or improvement (Kapus et al. 2011; Stallman et al. 2017). The initial swim test lets the teacher become familiar with the students at the beginning of the process, enables him or her to form homogeneous training/study groups and allows him or her to plan out the appropriate course programme, which can then be modified accordingly depending on interim test results. With the help of the final progress assessment, they will then be able to design future learning pathways and goals. As an aid, the teacher can make use of the already established exercises and criteria, which can help the teacher rank the students into standardised categories according to their swimming abilities and skills. Here standardised swimming categories are defined as criteria for evaluating the skills of a swimmer. According to the difficulty of mastering individual swimming skills, the criteria are classified into 10 levels: three so-called Sea Horse levels (bronze, silver and gold), four Dolphin levels (little dolphin, bronze, silver and gold) and three Shark levels (bronze, silver and gold). Standardised levels refer to the level of knowledge and skill required for one to be considered a safe swimmer, which is a crucial indicator in swim teaching (Kapus 2018). The acquisition of swimming skills and competences requires training in water (pool, sea, etc.), where the practising individual can develop his or her swimming abilities and technique (Majerič and Kapus 2019; Stallman et al. 2017). Knowing how to swim is considered an important skill in the Republic of Slovenia, not only in terms of teaching swimming as a sport, which young people can then engage in safely later in life, but also as a preventive measure against drowning. Learning how to swim is part of the primary school curriculum (Kovač et al. 2011) and part of the *Resolution on the National Programme of Sport of the Republic of Slovenia 2014–2023* (Ministry of Education 2014). Kinesiologists, professionals in sports, can teach swimming after successfully completing their education (Plevnik and Babnik 2020), whereby swimming is also incorporated in the kinesiology study programme curricula. The fundamental objective of swimming as a course is to develop the students' swimming ability, their ability to demonstrate special swimming techniques and other skills and to enable them to acquire the didactic and methodological processes involved in swim teaching.

Lu (2020) claims that because of the special characteristics of these practical forms of learning, it is precisely these movement/sports-oriented programmes, which are mostly incorporated in physical education classes in lower-level curricula, that have faced the biggest challenges as a result of the different methods of teaching adopted because of the Covid-19 epidemic. The contradictory nature of remotely teaching subjects, which inherently requires the personal experience of physical activity and movement, is a specific feature of distance education in the case of movement/sports activities. Although ICT has been used in this field for a long time, its role was mainly to support the acquisition of practical skills, not to be the sole tool of remote learning (Emmanouilidou et al. 2012; Kapus and Majerič 2019; Lu et al. 2020; Majerič and Kapus 2019; Sato and Haegele 2019; Waite 2011).

Purpose and objectives

The purpose of the current paper is to present the adaptations made in the implementation of practical training classes as a form of the study process and to assess the progress made by the students in terms of their swimming skills. The research question we pursued was the following: Did the adapted implementation of practical classes allow the students' swimming skills to progress?

Methodology

Study sample

The study included 45 male and female first-year students enrolled in applied kinesiology (University of Primorska, Faculty of Health Sciences); the students had an average age of 19.71 ± 1.35 years. The share of female students was 62.8%, and the share of male students was 37.2%. At the first practical session held on 20 February, the students were put in two relatively homogeneous groups based on their initial/baseline swimming abilities, which were evaluated by performing a test: a group of new swimmers (Beginner group; $n = 23$; 53.8% female students) and a group of better swimmers (Advanced group; $n = 22$; 46.2% female students).

Study design and data acquisition

To track the progress of the students' practical knowledge and skills, we prepared a test battery consisting of diverse items, with which we measured the students' progress or improvement over time (the time required to swim a certain distance, the duration of performing select tasks, the self-assessment of swimming skills and the use of swimming techniques). The original study design involved three progress evaluations of practical skills: at the first session on 20 February (Evaluation—E1), in the middle of the programme on 8 June (E2) and at the last practical exercises class on and 19 June (E3). The implementation of these practical classes was planned so that 30 hours of the practical programme would be carried out in two-hour sessions for 15 consecutive weeks. The practical classes began on 20 February 2020 (E1), after which 20% of the practical course (6 hours) was carried out in the next 15 days (i.e., first implementation period). Because of the Covid-19 epidemic, the implementation of practical exercises was suspended on 12 March (*Ordinance temporarily prohibiting gatherings of people in educational institutions and universities and independent higher education institutions. Official Gazette of the Republic of Slovenia, nos. 25/20, 29/20, 65/20 and 67/20, 2020; University of Primorska 2020c*). The practical classes continued on 8 June (E2) (following a three-month interruption), after which in the next 11 days, the remaining 80% (24 hours) of the practical course were carried out (second implementation period). The last session took place on 19 June (E3). When carrying out the course, we followed

the current guidelines provided by the NIJZ (National Institute of Public Health RS, 2020) and the recommendations issued by our parent institution (University of Primorska 2020a). Because of the measures taken to fight the Covid-19 epidemic, students were unable to practice swimming in the interim period (as opposed to other practical physical movement subjects, which could be carried out at a safe distance). Furthermore, because of the condensed nature of practical classes in the second implementation period, the students could make no additional independent efforts to further strengthen what they had learned.

Methods of analysis

The data were analysed using the IBM software package SPSS Statistics 26.0 (IBM Corp.). The Shapiro–Wilk test was used to examine distribution normality. A paired-samples Wilcoxon test was used to analyse differences in progress between the implementation periods (from E1 to E2 and E2 to E3), the Mann–Whitney U test was used to analyse the differences between the two study groups, and the Friedman test was used to analyse the progress throughout the entire period (from E1 to E3). A chi-squared test (χ^2) was used to analyse the differences in swimming technique use in the investigated periods. The p-value was set at $p < 0.05$.

Results and discussion

The March 2020 Covid-19 epidemic required higher education institutions to make quick adaptations in how they were implementing their study processes. In terms of adjustment options, most higher education institutions had to abide by the general guidelines, which recommended distance learning be supported by appropriate ICT. In particular, the implementation of practical forms of the study process called for significantly more coordinated and thought-out adaptation plans. Whereas the implementation of those practical courses that could be carried out in accordance with the NIJZ's physical distance guidelines could be adapted so that the students filmed their execution of exercises and techniques, sent these videos in and discussed them as part of remote learning in an adapted version of their practical (laboratory and seminar) classes, thus enabling the implementation of certain subjects and classes in their adapted form despite the epidemic, the continued implementation of the practical classes for the subject swimming and water rescue basics, which is part of the applied kinesiology programme (at the University of Primorska Faculty of Health Sciences), was not possible because of pool closures.

Taking into account the adopted restrictions and adaptation options, the classes could be further implemented as follows:

- Option 1: Implementing practical classes through theoretical distance learning (if estimated that the study content would allow it and that the quality of such

knowledge and competences acquired by the students would not drop significantly) during the semester and according to the set study schedule of the academic calendar (University of Primorska 2020a).

- Option 2: Proposing to extend the academic calendar and the second semester and then implementing the classes within the academic year in accordance with Article 3 of the *Higher Education Act* (Ministry of Education, Science and Sport 2012), which provides for a total student load of up to 40 hours a week for 42 weeks in a year if the study programme includes practical training. The above-mentioned act specifies that if the nature of the study programme makes this possible, the organisation and timeline of the programme's lectures, seminars and practical classes may be adapted to match the needs of the students. Adaptations are made in compliance with the procedures determined by the statute. The educational process is completed by the extended academic calendar end date.
- Option 3: Moving the implementation of practical classes into the next academic year in accordance with the guidelines provided in *Adapted Assessment and Modified Criteria for Progression* (University of Primorska 2020b).

Given the aforementioned specificity of the practical classes in question and considering the necessary facilities, we excluded Option 1 and chose Option 2 based on the announcement that the restrictions would be loosened, meaning that the pools would reopen while complying with national guidelines (NIJZ RS 2020); however, because of the time limit put on the extension of the academic semester, we had to organise the resulting classes in an incredibly condensed manner. This implementation was possible because of the timely loosening of restrictive measures towards the end of the (extended) semester. In the following part of the paper, we present the results of our study regarding practical progress; to do this, we have selected parameters achieved by the students, who were categorised into groups according to their initial swimming abilities, and in total as group as part of the above-described adapted course implementation.

The Beginner group and Advanced group of swimmers differed with statistical significance at the initial phase (baseline values) of all three parameters under study: the self-assessment of swimming ($U = 90$, $p = 0.001$), the 100 m swim time ($U = 85.5$; $p = 0.001$) and the underwater swim length ($U = 109$; $p = 0.008$). Statistically significant differences between all parameters persisted at the second evaluation ($p < 0.05$). At the final evaluation, however, the groups differed only in their self-assessment of swimming ($U = 48$, $p < 0.001$), with no statistically significant differences between the groups in the other two investigated parameters.

A self-assessment of swimming is a subjective evaluation of one's swimming skills on a numerical scale ranging from 1 (exceptionally bad swimmer) to 10 (excellent swimmer). The assessment comprises swimming techniques and distance swimming abilities.

	Self-assessment of swimming E1 (AM $\pm$ SD)	Self-assessment of swimming E2 (AM $\pm$ SD)	Self-assessment of swimming E3 (AM $\pm$ SD)
Beginner group	4.57 $\pm$ 1.40	4.82 $\pm$ 1.0	6.24 $\pm$ 1.03
Advanced group	5.95 $\pm$ 0.89	6.80 $\pm$ 1.26	7.67 $\pm$ 0.84
Total	5.23 $\pm$ 1.34	5.75 $\pm$ 1.5	6.97 $\pm$ 1.75

Table 1: Descriptive statistics of the self-assessment of swimming at E1, E2 and E3; AM $\pm$ SD: arithmetic mean $\pm$ standard deviation

	Difference in the improvement of swimming self-assessment between E1 and E2 (%; AM $\pm$ SD)		Difference in the improvement of swimming self-assessment between E2 and E3 (%; AM $\pm$ SD)	Statistical significance (p) in the improvement of the self-assessment of swimming between E1 and E3
Volume and timeline of programme implementation	Implementation of 20% of the programme (6 hours) in 15 days	3-month interruption	Implementation of 80% of the programme (24 hours) in 11 days	
Beginner group (% improvement)	9.15 $\pm$ 28.13		36.33 $\pm$ 37.06	52.65 $\pm$ 49.82
P (E1-E2; E2-E3; E1-E3)	Z = -0.690; p = 0.490		Z = -3.108; p = 0.002	z = 17.149; p = 0.001
Advanced group (% improvement)	13.63 $\pm$ 16.86		20.04 $\pm$ 34.07	26.32 $\pm$ 16.41
P (E1-E2; E2-E3; E1-E3)	Z = -2.636; p = 0.008		Z = -2.565; p = 0.010	$\chi^2(2) = 20.537$; p < 0.001
Total (% improvement)	11.246 $\pm$ 23.284		28.186 $\pm$ 35.946	$\chi^2(2) = 35.659$; p < 0.001

Table 2: Improvement in the self-assessment of swimming between E1 and E2, E2 and E3 and E1 and E3 by skill groups (% improvement); AM $\pm$ SD: arithmetic mean $\pm$ standard deviation

The results show that both the Beginner and Advanced groups self-assessed their swimming skills statistically significantly better ($p < 0.001$) for the entire implementation period from the first session to the last. The Advanced group self-assessed their swimming skills statistically significantly better after both implementation periods, while the Beginner group self-assessed their swimming skills better only after the second implementation period (see Table 2). Kapus and Majerič (2019) have found that the use of ICT in swimming lessons did not affect the self-assessment of competences for swimming instruction among students. In their study, both in the control group and the experimental group, the development of swimming competency self-assessment was similar, regardless of whether the students were using ICT or not (Kapus and Majerič 2019). The authors point out the limitation of the study, which is that the data were acquired solely by means of

the students' self-reporting. Judging by the results, the decision to forgo the remote implementation of practical classes (Option 1) was the correct one. To progress in one's swimming skills, practical experience in a real-life training environment is crucial.

	100 m swim time at E1 (in seconds; AM $\pm$ SD)	100 m swim time at E2 (in seconds; AM $\pm$ SD)	100 m swim time at E3 (in seconds; AM $\pm$ SD)
Beginner group	131.11 $\pm$ 16.26	127.99 $\pm$ 15.67	119.02 $\pm$ 14.03
Advanced group	112.48 $\pm$ 17.33	109.99 $\pm$ 17.75	112.4 $\pm$ 20.25
Total	121.66 $\pm$ 19.28	119.55 $\pm$ 18.77	115.8 $\pm$ 17.49

Table 3: Descriptive statistics of the 100 m swim time at E1, E2 and E3; AM $\pm$ SD: arithmetic mean $\pm$ standard deviation

	Difference in 100 m swim time progress between E1 and E2 (%; AM $\pm$ SD)		Difference in 100 m swim time progress between E2 and E3 (%; AM $\pm$ SD)	Statistical significance (p) of 100 m swim time progress between E1 and E3
Volume and timeline of programme implementation	Implementation of 20% of the programme (6 hours) in 15 days	3-month interruption	Implementation of 80% of the programme (24 hours) in 11 days	
Beginner group (% improvement)	-1.9 $\pm$ 10.2		-5.84 $\pm$ 5.7	-8.54 $\pm$ 10.19
P (E1-E2; E2-E3; E1-E3)	Z = -0.828; p = 0.408		Z = -3.054; p = 0.002	$\chi^2(2) = 12.667$; p = 0.002
Advanced group (% improvement)	0.6 $\pm$ 5.63		-1.11 $\pm$ 6.97	1.4 $\pm$ 12.27
P (E1-E2; E2-E3; E1-E3)	Z = -0.094; p = 0.925		Z = -1.507; p = 0.132	$\chi^2(2) = 1.000$; p = 0.607
Total (% improvement)	-0.7 $\pm$ 8.37		-3.62 $\pm$ 6.69	$\chi^2(2) = 10.605$; p = 0.005

Table 4: Improvement in the 100 m swim time between E1 and E2, E2 and E3 and E1 and E3 by skill groups (% improvement); AM $\pm$ SD: arithmetic mean $\pm$ standard deviation

In total, and for the entire period under study, the students attained a statistically significant improvement ($\chi^2(2) = 10.605$; p = 0.005) in their 100 m swim times. Going by groups, the Beginner group achieved a statistically significant improvement in their 100 m swim times for the entire period ($\chi^2(2) = 12.667$; p = 0.002), but this improvement was particularly because of the progress made in the second implementation period (Z = -3.054; p = 0.002). The Advanced group improved their swim times after the first implementation period (relative to the baseline measurement), but after the second implementation period, their times deteriorated. The variations among students (deterioration or progress) did not reach

the statistical risk threshold (Table 4). Regarding the use of swimming techniques, the groups did not differ at E1 (initial measurement). For the first 25 m, 60% of all students used the front crawl technique, and for the final 25 m, 51.1% of all students used the breaststroke technique. Regarding technique, there was also no difference between the two groups at E2: for the first 25 m, 51.1% of all students used the front crawl technique, and for the final 25 m, 33.3% of all students used the breaststroke. Furthermore, there was no difference between the two groups at E3 for the first 25 m (53.3% of all students used the front crawl technique). In the final 25 m, however, there was a statistically significant difference between the groups in the use of swimming technique ($\chi^2(3) = 11.463$; $p = 0.009$), with 54.5% of Advanced swimmers resorting to the front crawl and 65.2% of Beginners using the breaststroke. This result shows that the Advanced group, although failing to improve their swim time with any statistical significance, did make progress in terms of their swimming skills, using a physically more demanding swimming technique when experiencing increased fatigue.

	Underwater swim length at E1 (in metres; AM $\pm$ SD)	Underwater swim length at E2 (in metres; AM $\pm$ SD)	Underwater swim length at E3 (in metres; AM $\pm$ SD)
Beginner group	15.71 $\pm$ 5.91	17.68 $\pm$ 6.10	24.45 $\pm$ 5.61
Advanced group	21.68 $\pm$ 8.59	26.09 $\pm$ 9.18	27.71 $\pm$ 5.92
Total	18.55 $\pm$ 7.87	21.62 $\pm$ 8.69	26.03 $\pm$ 5.92

Table 5: Descriptive statistics of underwater swim length at E1, E2 and E3; AM $\pm$ SD: arithmetic mean $\pm$ standard deviation

Volume and timeline of programme implementation	Difference in underwater swim length progress between E1 and E2 (%; AM $\pm$ SD)		Difference in underwater swim length progress between E2 and E3 (%; AM $\pm$ SD)	Statistical significance (p) in underwater swim length progress between E1 and E3
	Implementation of 20% of the programme (6 hours) in 15 days	3-month interruption	Implementation of 80% of the programme (24 hours) in 11 days	
<i>Beginner group</i> (% improvement)	32.42 $\pm$ 67.89		47.15 $\pm$ 53.03	91.69 $\pm$ 139.23
p (V1-V2; V2-V3; V1-V3)	Z = -1.364; p = 0.173		Z = -3.206; p = 0.001	$\chi^2(2) = 16.484$; p < 0.001
<i>Advanced group</i> (% improvement)	7.106 $\pm$ 17.01		11.78 $\pm$ 18.65	20.79 $\pm$ 25.05
p (E1-E2; E2-E3; E1-E3)	Z = -1.493; p = 0.135		Z = -2.135; p = 0.033	$\chi^2(2) = 9.837$; p = 0.007
<i>Total</i> (% improvement)	20.61 $\pm$ 51.76		30.57 $\pm$ 43.93	$\chi^2(2) = 26.000$; p < 0.001

Table 6: Improvement in underwater swim length between E1 and E2, E2 and E3 and E1 and E3 by skill groups (% improvement); AM $\pm$ SD: arithmetic mean $\pm$ standard deviation

It is evident from Table 6 that both groups reached a statistically significant improvement in underwater swim length ($p = 0.001$), especially because of the progress made in the second implementation period (Beginner group $\chi^2(2) = 16.484$; $p < 0.001$; Advanced group $\chi^2(2) = 9.837$; $p = 0.007$). The underwater swim length results are influenced by one's proficiency in underwater swimming techniques, as well as the physical fitness necessary to perform the exercise in a state of decreased oxygen supply, which can be improved with appropriate training (Kapus et al. 2013; Ušaj et al. 2019).

The selected option of implementing practical classes in a condensed fashion within the extended academic semester proved to be the optimal solution for carrying out the remaining practical lessons in a swimming pool. The example shows that students progressed despite the condensed programme and the consequent lack of independent work and training. It is precisely the progress monitoring of practical skills and competences that acts as an example of good practice, showing how to evaluate the students' practical progress, as well as how to assess the potential achievement of goals pertaining to individual academic subjects and student competences in the context of an adapted study process. Recent research points to the exceptional importance of maintaining regular physical activity during the Covid-19 epidemic (Yeo 2020), including physical activity in the home environment (Hammami et al. 2020). The possibility of undertaking physical activity in swimming pools, however, has also remained unpredictable during the global pandemic period (Langendorfer 2020). This is why it is recommended to look for different adaptations and to consider the possibility of also including adapted practical physical classes, at least partially, in remote learning (Varea and González-Calvo 2020). Real-life experience in the implementation of practical classes shows that a complete adaptation and transfer of the practical forms of study into the digital environment is not sensible. The practical aspect of swimming skills acquisition, for instance, can be preserved with adapted exercises and techniques, which the students can execute independently on dry land and that can later contribute to faster progress in the water. This includes exercises for the development of swimming-specific physical skills (e.g., mobility, strength, stabilisation, etc.), exercises aimed at the development of physiological capabilities (e.g., training one's breathing technique and capacity) and exercises simulating the proper execution of individual phases of a swimming technique or the technique as a whole. To ensure high-quality teaching and learning, greater attention must be paid to the implementation of practical classes (Stensaker 2008) and their possible adaptations.

Conclusion

The Covid-19 epidemic required higher education institutions to respond quickly and adjust their implementation of the study process. Taking into account the available adaptation options, the relevant national laws and the guidelines issued by higher education organisations, professors and assistants had to adapt specific implementation of the study content. At the same time, the adopted national

legislation ensured the autonomy of higher education teachers in adjusting their assessments to the conditions and specific requirements of their subjects. When adapting the implementation of practical forms of study, special attention must be paid to how their purpose—that is, the real practical experience of participants in educational programmes—can be maintained. In teaching physical/sporting activities, the providers of these programmes must enable study programme participants to acquire the relevant knowledge pertaining to the physical movement and make it possible for them to develop their skills through their own physical experience, all while taking into account the relevant guidelines and limitations and making appropriate adaptations.

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IZZIVI IZVEDBE PRAKTIČNIH VAJ OB PRILAGODITVAH IZOBRAŽEVALNEGA PROCESA V VISOKOŠOLSKIH USTANOVAH MED EPIDEMIJO COVIDA-19

Povzetek: Razglasitev epidemije covid-19 v marcu 2020 je od visokošolskih izobraževalnih ustanov zahtevala prilagoditev številnih oblik študijskega procesa na način, da je izvedba omogočala upoštevanje sprejetih omejitev in priporočil za delo v času razglašene epidemije. Pred večji izziv prilagoditev so bile postavljene predvsem izvedbe praktičnih oblik študijskega procesa. Namen prispevka je prikazati možnosti prilagoditev izvajanja praktičnih vaj plavanja in osnov reševanja iz vode, v izvedbo katerih so bili v času razglašene epidemije vključeni študentje prvega letnika študijskega programa aplikativne kineziologije ($n = 45$), ki se izvaja na Fakulteti za vede o zdravju Univerze na Primorskem. Rezultati kažejo, da so študentje kot skupina kljub prekinjeni izvedbi in nato prilagojeni strnjeni izvedbi praktičnih vaj v celotnem obdobju dosegli statistično značilen napredek v samoočeni znanju plavanja, v času plavanja na 100 m ter v dolžini plavanja pod vodo. Rezultati napredka se razlikujejo glede na skupino po znanju plavanja ter glede na obdobje izvedbe praktičnih vaj. Ob prilagajanju izvajanja praktičnih študijskih oblik je potrebno posebno pozornost nameniti dejstvu, kako ob upoštevanju možnosti izvedbe, omejitev in veljavnih priporočil ohraniti njihov namen – to je realno praktično izkušnjo udeležencev izobraževalnih programov.

Ključne besede: praktične vaje, kineziologija, plavanje, izobraževanje, prilagoditev, covid-19

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