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Do online workshops using active teaching methods improve self-rated communication skills of physiotherapy students?

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Abstract

Study aim: In the education of physiotherapists, communication skills should be developed: this can be done by conducting special workshops. In the context of the COVID-19 pandemic, the need arose for replacing conventional forms of education with remote classes. Therefore, it was decided to test the effectiveness of a social skills workshop conducted using active online methods for second-year physiotherapy students.

Material and methods: The experimental factor was the contents of workshop classes taught online as part of the mandatory course included in the curriculum. The platforms Teams, Zoom, and the Messenger were used to carry out the experiment. The workshops used active learning methods: simulation of work situation, drama, peer feedback and interaction-based communication.

Results: The results obtained from 78 participants (pre-test and post-test, including 45 women) were analyzed. The age of the participants ranged from 20 to 22 years, with a mean of 20.7 years. A self-reported social skills questionnaire consisting of 17 statements was used. participation in the course resulted in a significant increase in the index of general communication skills of the students ($Z = 5.11$, $p < 0.001$, $R = 0.582$).

Conclusions: Online workshops using active teaching methods, which are an essential element of students of physiotherapy preparation for clinical work, can stimulate the development of their communication skills.

Keywords: Physiotherapy – Students – Workshops – Online – Communication skills

Introduction

With the challenges of the outbreak of the COVID-19 pandemic, distance learning has been incorporated into curricula to ensure continuity of education.

Teaching workshops were scheduled to be conducted in the academic year 2019/2020. The COVID-19 pandemic turned out to be a major obstacle during the project implementation. After the COVID-19 pandemic was declared, the university's work was suspended. Under these difficult circumstances, the workshops and research were conducted in an online format. The commitment of the teachers and students during the pandemic helped complete the classes and continue the research.

However, extensive research to date on the effectiveness of online learning for physiotherapy students has failed to include social skills training, which differs from other classes by using active learning methods [13, 19].

Active methods of education have been used in the education of physiotherapy students and other health professionals, despite considerable organizational effort [15, 23]. Research on physiotherapist education shows the need to integrate theoretical and practical knowledge during clinical classes. One of the methods is a simulation of relations and dialogue with a patient. It allows for preparing the students for communication and establishing relationships with patients, experiencing difficult situations beforehand, and emotions related to them [4, 8, 25].

Such classes teach talking to patients to explain the treatment process, negotiating, and setting rules and boundaries. Simulated relationships with a supervisor and a medical staff should also be included in the process of acquiring communication skills prior to clinical activities [4]. Classes with simulation forms use methods of working with a group based on dialogue, verbal and non-verbal communication, and various forms of drama [3, 12].

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The social competences of health professionals, mainly the interpersonal communication skills, are considered a factor that affects the quality and effectiveness of the treatment of sick and disabled people, e.g. patient's following medical recommendations. Helping the patient understand and encouraging them to follow the recommendations requires not only medical but, most importantly, psychological knowledge [15, 21]. The implementation of active teaching methods in education is also a response to the need for students themselves to be more active and involved and to move away from their passive and receptive role towards educational constructivism [4, 16, 23].

The Polish scholar Matczak emphasized that social competences should be viewed as complex skills which determine the effectiveness of coping with particular types of social situations. We also assume, as a consequence of the above, that social competences are specific to a certain type of situation while each qualitatively different contact requires appropriate skills. A person who can effectively cope with public speaking may not necessarily be equally effective in coping with interpersonal situations requiring intimate relationships [3, 12].

In an educational situation, physiotherapists' competences are particularly important, expressed by such skills as coping with social exposure situations, coping with intimate situations, and coping with situations requiring assertiveness and communication. In the case of the latter, giving orders, giving feedback, praising, and informing about rules have a special role in an educational situation [3, 12].

The terms "teaching methods", "learning methods", "active methods", and "passive methods" are often used intuitively. We believe that defining the differences between them is important because of their use during education. We adopt the understanding of the term "teaching method" from the Polish author Klimowicz as a rationally planned (by the teacher) form of organizing the stages and process of learning. The method creates a situation and conditions in which the learner follows a clearly defined direction, according to the requirements set by the teacher, in order to achieve the intended goal, i.e. a specific body of knowledge and skills [12]. In the present paper, we will use the division of teaching methods based on the distinction of the center of the process of knowledge acquisition and transfer.

Thus, there are expository (passive) methods, which take into account primarily the processes of teaching, with the teacher in their center and an example being a lecture.

Therefore, our experiment, conducted online after the COVID-19 lockdown regulations were announced, used active methods based on group collaboration such as simulating conversations with customers, modeling correct behavior, and providing feedback [18].

The communication and interpersonal skills acquired during the workshop will allow teachers of clinical classes to focus exclusively on medical problems and relieve them of the burden of analyzing communication issues [25]. It has been noted already during clinical classes that students' skills of communication and building relations with patients and supervisors are important for patient satisfaction [8]. Clinical classes are the first practical test for students. Therefore, active teaching methods and small learning groups are also introduced in these demanding settings to enhance students' self-awareness of competences and responsibility for their development [4, 23].

The number of classes dedicated to teaching communication competences, their organization within general education, and the methods and competences of instructors are areas for further research and analysis [23].

The aim of the survey was to prove the effectiveness of a communication skills workshop conducted using active online methods among second-year physiotherapy students. Self-rated scores collected using the author's questionnaire were used as an indicator of these skills.

Research questions:

1. Will students' self-rated communication skills change after a social skills workshop conducted using online active methods?
2. What changes were obtained in students' self-rated communication skills as a result of the online workshop?
3. Is the gender of students participating in a workshop conducted using online active methods related to their self-rated communication skills?

The aim of the paper was to demonstrate the effect that active learning methods such as simulation of work situation, drama, peer feedback, and interaction-based communication, carried out during online classes on *pedagogy in physiotherapy* had on the development of second-year physiotherapy students' communication skills.

The goal of the classes was to develop communication skills that would allow physiotherapists to build good relationships with a patient and engage him or her in the rehabilitation process.

They also make it possible to control the development of communication skills during studies and not to treat this area of education as an additional element that should develop on its own, in addition to education, and accidentally, in the course of other activities.

Material and methods

The research involved every of 87 second year students of the Faculty of Rehabilitation, physiotherapy course at the University of Physical Education in Warsaw. Classes were conducted online in 4 groups.

Inclusion criteria

The analysis included material obtained from students who participated in all on-line compulsory classes of the *pedagogy in physiotherapy*, gave their informed consent to participate in the experiment, and correctly completed, and returned the communication competences questionnaires (pre-test and post-test) within the indicated time. Determination of the full participation of the student in the classes was based on their presence and activity: speaking, performing exercises in front of the camera.

Exclusion criteria

The students who did not meet the above criteria were excluded. All students agreed to participate in the research. The questionnaires of 9 students were filled in incorrectly (they had gaps in the answers and/or did not contain coding data) or were not sent within the deadline. Table 1 contains information on the age and sex of the respondents whose questionnaires were qualified for the analysis.

Table 1. Respondents by gender and age

Age [years]	Women		Men		Total	
	N	%	N	%	N	%
20	19	24.4	14	17.9	33	42.3
21	20	25.6	15	19.2	35	44.9
22	6	7.7	4	5.2	10	12.8
Total	45	57.7	33	42.3	78	100.0

Data from 78 students (45 of whom were female) were included in the analysis. The age of the participants ranged from 20 to 22 years, with a mean of 20.7 years.

The research was conducted using the experimental method. The experimental factor was the content of workshop classes taught online as part of the mandatory course included in the curriculum. Classes were designed and conducted by a person who is a psychologist and an interpersonal skills coach certified by the Polish Psychological Association, a practitioner and trainer with over 20 years of experience, also an academic lecturer.

The content of the workshops consisted of 7 blocks of 90 minutes each (10.5 hours in total). The Microsoft TEAMS platform, Messenger application, and e-mails were used to conduct the workshops. The test of self-rated communication skills was carry out during the first and last hour of classes.

Block content:

1. The physiotherapist works with the group. The role of rules, communication with the group, and enforcement of rules in child and adult therapy groups.

2. The physiotherapist observes his or her own emotions. Observation, experiencing emotions in the body.

3. The physiotherapist communicates his or her own emotions. Observing, experiencing, and communicating emotions in relationships with patients.

4. Types of physiotherapist-patient relationships. Positive and negative consequences of relationships: authoritarian, permissive, and democratic in working with patients.

5. The physiotherapist understands and knows how to respond to the patient's emotions. The principles of work on patient's motivation, change of habits, and the role of physiotherapist (motivational interviewing)

6. The rules of assertive communication in physiotherapist-patient relationships. The physiotherapist assertively expresses professional expectations, abilities, and needs.

7. The physiotherapist resolves conflicts in the relationship with the patient. Rules of conflict resolution by Thomas Gordon's method in patient-physiotherapist relationships [10].

The survey was conducted twice, during the first and last classes: pre-test on 6 May 2020, and post-test on 16 June 2020. Each time, 45 minutes were devoted to the survey. A questionnaire containing respondent data, questions for self-rated comunicaton skills, and an explanation of the purpose of the survey with instructions was made available to the respondents online through the Gmail platform with Google Docs application. The supervisor explained the purpose of the research to the students and informed them that participation was voluntary. The respondents received an instruction that allowed them to create a unique five-digit codes (instead of names and surnames) that could be easily and precisely reproduced in subsequent studies. This ensured anonymity and allowed the results to be linked for the same respondent for the pre-test and post-test results. The student could opt out at any stage of the research. Respondents completed the questionnaires individually and approved their return. The return rate was 97.7% in the first survey and 94.2% in the second.

A questionnaire of self-rated communication skills was created to find out the effects of the course. The tool was designed to estimate the extent to which the students surveyed achieved the learning outcomes of the workshop. The statements used in our tool were selected based on known and popular psychometric tests (INTE questionnaire [11] and Social Competence Questionnaire by Anna Matczak) and a careful analysis of the specificity of physiotherapist's work with a patient conducted by academic teachers: a psychologist and educator. The first version of the tool consisted of 30 statements. We conducted a pilot study with the participation of 1st-year students of physiotherapy (110 respondents). By means of factor analysis, four scales of the questionnaire measuring were selected: 1) Communication skills used in situations requiring assertiveness – 4 statements, 2) Communication skills used in situations of establishing the rules of cooperation with

the patient – 4 statements, 3) Communication skills used in managing the patient in the therapy process – 4 statements, 4) Communication skills in active listening – 5 statements. The respondent was asked to answer each statement on a scale of: 7 – *Definitely yes*, 6 – *Yes*, 5 – *Rather yes*, 4 – *It's hard to say*, 3 – *Rather no*, 2 – *No*, 1 – *Definitely not.* Scores 1 to 3 indicated no or low level of competence; 5 to 7 indicated medium to a high level of competence. A score of 4 indicated indecision. The statements used in the questionnaire to examine self-rated competences are provided in Appendix 1.

The final version of the tool achieved a Cronbach's alpha reliability coefficient of 0.91. This means that the questions used in the tool are consistent.

The split-half reliability was calculated according to the Spearman-Brown formula to assess the internal reliability of the questionnaire. The rho value amounted to 0.88, indicating high internal consistency. The form also included questions about students' personal data, such as gender, age, student group, and previous education.

Data were analyzed using Statistica v.13.3 software (StatSoft, TIBCO 2017). An analysis of the distribution of the results (indices of competences) was conducted using the Kolmogorov-Smirnov test. Gender, indices of competency components, and time of survey (pre-test, post-test) were taken into account. It was observed that The distributions of some variables deviated from a normal distribution.

The significance of differences for individual statements (pre-test, post-test) was assessed using the Wilcoxon signed-rank test. The effect size was estimated using the biserial correlation coefficient R as 0.1 – small effect size, 0.3 – medium effect size, and 0.5 – large effect size.

Comparison of the mean values of the general index and the indices for the individual areas of communication competences in men and women using the Mann-Whitney test revealed no significant differences between them before the course.

The research was approved by the Senate's Research Bioethics Commission of the University of Physical Education in Warsaw.

Results

The index of general self-related communication skills increased substantially as a result of the course taken by the study subjects what is presented in Table 2.

A significant increase was observed in the index of general self-rated communication skills in women ($Z = 4.52$, $p < 0.001$, $R = 0.681$) and men ($Z = 2.43$, $p < 0.001$, $R = 0.423$) and in the group of all subjects in total ($Z = 5.11$, $p < 0.001$, $R = 0.582$).

Participation in the course resulted in an increase in students' self-rated communication skills in situations requiring assertiveness (Table 3).

In the case of women, participation in the course resulted in a significant increase in self-rated communication skills in situations requiring assertiveness ($Z = 2.86$, $p < 0.001$, $R = 0.483$). A large effect and a significant increase in the index was observed for statement S3: "In a situation where the patient fails to follow my instructions I am able, without showing anger or resentment, to repeat the instruction and enforce it on him or her" ($Z = 3.32$, $p < 0.001$, $R = 0.587$). In contrast, a medium effect of the course and an insignificant increase in the index was observed for statement S2: "If I want something I can ask for it" ($Z = 1.52$, $p = 0.128$, $R = 0.317$) and S4: "I can tell the patient that I like the way he or she exercises" ($Z = 1.93$,

Table 2. Mean values (±SD) of the index of general self-rated communication skills before and after the course

Women		Men		Total	
Before	After	Before	After	Before	After
5.49 ± 0.606	6.07 ± 0.748***	5.42 ± 0.522	5.74 ± 0.626***	5.46 ± 0.570	5.93 ± 0.714***

*** – significantly different than before ($p < 0.001$).

Table 3. Mean values (±SD) of the self-rated index in students in terms of communication skills used in situations requiring assertiveness before and after the course

Women		Men		Total	
Before	After	Before	After	Before	After
5.64 ± 0.688	5.94 ± 0.803***	5.54 ± 0.634	5.55 ± 0.881	5.60 ± 0.664	5.77 ± 0.853***

*** – significantly different than before ($p < 0.001$).

p = 0.0535, R = 0.499). For statement S1: "Even when I have an opposite opinion from that of the patient, I can tell the patient about it", the changes were negligible and the effect size was small (Z = 0.62, p = 0.532, R = 0.120).

In men, no significant changes were observed in the index of general communication skills discussed (Z = 0.23, p = 0.821, R = 0.040). However, a medium positive course effect for self-reported skills using statement S2 (Z =1.79, p = 0.073, R = 0.401) and a medium negative effect (a decrease in the index) for statement S4 (Z = 1.08, p = 0.279, R = 0.300) were observed. In other cases, the changes were not significant and the effect sizes were small.

Table 4 presents mean values of the self-rated index in terms of communication skills used in situations of establishing the rules of cooperation with the patient.

For both men and women, participation in the course resulted in a significant increase in self-rated communication skills in rule-making situations (Z = 4.15, p < 0.001, R = 0.476).

The increase in the self-rated skills index after the course was observed to the greatest extent for the statements S7 "I ask the patient about their expectations of the therapeutic session", (Z = 3.43, p < 0.001, R = 0.476) and the statement S8 "I set tasks with the patient and then enforce them during the therapeutic session", (Z = 3.93, p < 0.001, R = 0.586). There was an average exchange rate effect and a significant increase in the rate in the case of the statement S5 "I believe that I am responsible for implementing the principles in my patient group and in my individual work with patients" (Z = 2.23, p = 0.025, R = 0.337) and small and negative effect in case of the statement S6 "I feel that I should make an effort to ensure that every patient knows the purpose of treatment" (Z = 1.44, p = 0.149, R = 0.234). Means of the self-rated communication skills index in terms of managing the patient in the therapy process before and after the course are presented in Table 5.

Participation in the course resulted in both women and men in an increase in students' communication skills in managing the patient in the therapy process (Z = 4.79, p < 0.001, R = 0.613).

Students' self-rated competences increased after the course, with a strong effect observed for the statement S11 "When I intentionally give the initiative to the patient, I am able to refrain from interfering with the patient's activity", (Z = 4.25, p < 0.001, R = 0.590), S12 "I admit that I made a mistake" (Z = 3.45, p < 0.001, R = 0.515). The medium effect in self-rated skills was observed for the statements: S9 "I give space and time during exercises for freedom, making decisions, expressing expectations and needs of the patient" (Z = 3.22, p < 0.002, R = 0.485), and S10 "Inform the patient about the purpose of the session and its importance (Z = 2.41, p = 0.016, R = 0.372). Effects of the course on the self-rated index of students' active listening skills in communication with patients are shown in Table 6.

Analysis of the indices of students' competences in terms of active listening in communication with the patient revealed their significant increase in both women and men (it was the largest among all aspects studied) caused by the experimental factor (Z = 5.55, p < 0.001, R = 0.650).

Self-rated active listening increased significantly for four statements. A large effect was observed in each of the following cases: S13 "During the conversation, I use phrases like " you mean that...", "I understand that..." (Z = 4.31, p < 0.001, R = 0.,582), S14 "During

Table 4. Mean values (±SD) of the self-rated index in students in terms of communication skills used in situations of establishing the rules of cooperation with the patient before and after the course

Women		Men		Total	
Before	After	Before	After	Before	After
5.79 ± 0.819	6.30 ± 0.680***	5.78 ± 0.633	6,02 ± 0,591**	5.79 ± 0.742	6.18 ± 0.654***

*** – significantly different than before (p < 0.001); ** – significantly different than before (p < 0.05).

Table 5. Mean values (±SD) of the self-rated communication skills index in students in terms of managing the patient in the therapy process before and after the course

Women		Men		Total	
Before	After	Before	After	Before	After
5.52 ± 0.660	6.07 ± 0.819***	5.47 ± 0.698	5.86 ± 0.732***	5.50 ± 0.672	5.98 ± 0.785***

*** – significantly different than before (p < 0.001).

Table 6. Mean values (±SD) of the self-rated index of students' active listening skills in communication with patients before and after the course

Women		Men		Total	
Before	After	Before	After	Before	After
5.12 ± 0.767	6.00 ± 1.017***	5.02 ± 0.688	5.57 ± 0.756***	5.07 ± 0.732	5.82 ± 0.935***

*** – significantly different than before ($p < 0.001$).

the conversation, I give information to the interviewee/patient about how I perceive him or her: "I see that you like this solution", "It seems to me that you are dissatisfied" ($Z = 5.32$, $p < 0.001$, $R = 0.746$, S15 "During the conversation, I guide the interlocutor to the main threads, I summarize: *So far we have talked about ..., Does this mean that ..., Let's return to the main threads of our conversation* ($Z = 4.87$, $p < 0.001$, $R = 0.634$), and S16 "I am able to help boost my patients' self-esteem in different ways" ($Z = 6.63$, $p < 0.001$, $R = 0.630$). In the case of the statements S17 "When I talk to the patient I maintain eye contact with them" there was little effect and the changes were not significant ($Z = 1.56$, $p = 0.119$, $R = 0.253$). In the last case, the self-rated social skills of the students surveyed were found to be relatively high before the course (before: 5.78; after: 6.01).

Discussion

Research confirms that active methods such as simulating conversations with customers, modeling correct behavior, and providing feedback along with noticing the areas with knowledge deficits foster the development of high levels of trust, communication competence, confidence, and creativity. Methods that support physiotherapy students' engagement in the learning process, both in the university and during clinics, affect their self-esteem and confidence [16]. It needs to be highlighted that, simulating conversations with customers, modeling correct behavior, they must be closely related to practice and examples from clinics [16].

Initiating collaboration and sharing knowledge during physiotherapy studies promotes the development of communication, teaching, self-education, and leadership competences [25].

Workshops and training of communication skills allow students to improve competences related to non-verbal communication, which helps respond to the needs of the interlocutor in real-time and is crucial in successful relation. The researchers have also found no statistically significant differences between men and women [20, 21]. The impact of communication skills workshops on self-reflection, self-observation and admitting mistakes, and better social relationships has also been confirmed [20, 21]. Both our and other studies found that communication skills training improves the ability to cope with pressure from other people. In our study, this refers to pressure from patients, but in studies by other researchers, this pressure may be from peers [7, 20, 21].

Analysis of pre – and post-test results also reveals the skills that have not improved. It was found that for some of them, self-rated skills before the course were high and, probably for this reason, have not increased any further. These include expressing a positive assessment of the patient's performance, communicating the purpose of treatment to the patient, and maintaining eye contact with the patient.

The high self-rated skills among physiotherapists concerning social competences, including communication, are also confirmed by the results of research conducted by Polish authors. In 2015, our evaluation of self-rated social competences and emotional intelligence among physical education students showed its lower level, not much higher than the average statistical results for the population [3, 12].

It should be emphasized that the specific age of the respondents is related to the problems of adolescence, adaptation to the environment, and social challenges. Studies carried out in these age groups confirm the impact of communication workshops on the development of competences in building relationships with others [16].

Although indices in all four of the identified areas increased significantly, the greatest impact of the course was found in the area of active listening. A large effect size ($R > 0.5$) was observed here for four of the five skills. The students rated their ability to use verbal techniques of active listening. The respondents did a lot of exercises that enabled them to remember, understand, and use these techniques in different situations. We are aware that it is the verbal aspect of communication that constitutes a unity with the non-verbal area, and that they together determine the effectiveness of the use of these tools. This conclusion is also supported by other studies, which have indicated

that important elements learned from the workshop include alternative forms of verbal and non-verbal communication and control of emotions [2, 15, 23]. Nevertheless, we believe that an important first step in the development of this sphere of communication has been made.

The use of the online environment and digital tools in education, including communication training, are innovative solutions, whereas their impact on the development of communication skills in students requires further research [7, 17, 22, 24].

Online courses are highly rated in terms of their content quality, but the lack of relationship and communication with the instructor causes their effectiveness to be rated much lower [11, 14]. Therefore, we believe that it was important for the workshops that the instructor knew the students from previous classes, which facilitated the online classes, and presumably had an impact on reducing loneliness and anxiety [6].

It should be emphasized that the effectiveness of communication classes depends on the pedagogical skills of the instructor, the use of examples from clinical practice, the introduction of communication classes after the first experiences with patients, the inclusion of clinical experience in the classes, the inclusion of feedback from an expert, and resting the evaluation of the subject on the acquired skills rather than theoretical knowledge [16].

Conclusions

1. Online workshops based on the use of interactive methods can be effective in shaping communication skills of both female and male physiotherapy students.
2. Developing communication skills of physiotherapy students related to acting in opposition to the patient or a situation that has arisen, when it is necessary to oppose or express an opinion contradicting the opinion of the patient, probably requires a longer duration of impact than in our experiment and links with the practices of students in clinics.
3. We see a strong need to conduct research on the development of communication skills among physiotherapy students and on content as well as methods and forms of didactic work.
4. In the study of communication competences of physiotherapy students, it seems necessary to prepare a tool that will examine the specificity of the relationship with the patient in the clinic. Limitations to the current study and recommendations for future work.

We are aware that the research results presented here are based on a single learning experience (online workshop) and do not provide the basis for broader generalization. For this reason, our conclusions are made only based on the results obtained for the population studied. The limitation is also due to the lack of a control group. This organization of research is partly justified by the short duration of the experiment, which reduces the influence of confusing factors and that the classes were a compulsory course, therefore it was decided not to differentiate the methods. In our assessment, the conditions for voluntary and anonymous participation in the research were ensured and thus reduce the disruptive effect on the results. Students were informed that the course was compulsory, but that the examination was voluntary and that there was no subject grade.

Furthermore, the tool used in the study was developed in the pandemic settings and has not been fully validated for accuracy due to a limitation in the use of psychometric tests to the online form. The statements used in the tool provide insights into possible differences in student self-ratings between the pre – and post-workshop surveys and are specific to the work of physiotherapists. However, it is impossible to draw conclusions about the level of communication skills of the respondents based on the results, and therefore to make comparisons with the standards of these competences examined and determined using standardized tools. As the communication skills of physiotherapy students are taught online, there is a need to develop tools to measure the skills that make up these competencies. Such a tool should meet both psychometric requirements and contain contents that correspond to the specificity of the physiotherapist's work with a patient. We plan to further study the students who have participated in our workshops during their clinical placements to verify the use of the communication skills they have learned in the process. We believe that the improvement in the methodology of evaluation of pedagogical work is crucial for the development of methods and contents used in the education of physiotherapy students. We also hope that our proposal, although prepared under very demanding conditions, will be a valuable step in this field.

Conflict of interest: Authors state no conflict of interest.

References

1. Affouneh S, Mahamid F.A., Berte D.Z., Shaqour A.Z., Shayeb M. (2021) Efficacy of a training program for social skills in reducing addictive Internet behaviors among Palestinian university students. *Psicologia: Reflexão e Crítica*, 34. DOI: 10.1186/s41155-021-00185-w.
2. Bušelić V., Pažur K. (2019) Developing ICT students' generic skills in higher education: towards a model for competence assessment and evaluation. Proceedings of

the Central European Conference on Information and Intelligent Systems. Varazdin: 67-75 http://archive.ceciis.foi.hr/app/public/conferences/2019/Proceedings/ELA/ELA4.pdf.
3. Czechowski M., Femiak J., Kuk A. (2014) Social competences and emotional inteligence of future PE teachers. *J. Phys. Educ. Health – Social Perspective*, 3(5): 19-28.
4. Delany C., Bragge P. (2009) A study of physiotherapy students' and clinical educators' perceptions of learning and teaching. *Med. Teach.,* 3: 402-411. DOI: 10.1080/01421590902832970.
5. Delany C., Watkin D. (2008) A study of critical reflection in health professional education: Learning where others are coming from. *Adv Health Sci. Educ*., 14(3): 411-429. DOI:10.1007/s10459-008-9128-0.
6. Doyumğaç I., Tanhan A., Kiymaz M.S. (2021) Understanding the Most Important Facilitators and Barriers for Online Education during COVID-19 through Online Photovoice Methodology International. *Int. J. Educ. Technol. High. Educ.*, 10(1): 166-190. DOI: 10.5430/ijhe.v10n1p166.
7. Fang X., Miller J., Su W., Wang Y. (2011) Internet-based intervention for the treatment of online addiction for college students in China: A pilot study of the Healthy Online Self Helping Center. *Cybersychology. Behav., Soc. Netw.,* 14(9): 497-503. DOI: 10.1089/cyber.2010.0167.
8. Forbes R., Nolan D. (2018) Factors associated with patient-satisfaction in student-led physiotherapy clinics: a qualitative study. *Physiother. Theory Pract.*, 34(9): 705-713. DOI: 10.1080/09593985.2018.1423592.
9. Gokel O., Dagli G. (2017) Effects of Social Skill Training Program on Social Skills of Young People. *Eurasia J. Math. Sci. Technol. Educ.,* 13(11): 1305-8223. DOI: 10.12973/ejmste/79615.
10. Gordon T., (2000) Parents effectiveness Training In Action The Proven Program for Raising Responsible Children. New York: Random House USA Inc.
11. Jaworowska A., Matczak A. (2001) Kwestionariusz Inteligencji Emocjonalnej INTE, Schutte N.S., Malouff J.M., Hall L.E., Hagherty D.J., Cooper J.T., Golden C.J., Dornheim L. Podręcznik. Warszawa: Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego.
12. Kuk A., Czechowski M., Femiak J. (2015) Social competence and emotional intelligence of future PE teachers and their participation in psychological workshops. *Hum. Mov.*, 16(3): 163-170. DOI: 10.1515/humo-2015-0042.
13. Longhini J, De Colle B., Rossettini G., Palese A. (2021) What knowledge is available on massive open online courses in nursing and academic healthcare sciences education? A rapid review, *Nurse Education Today,* 99: 104812. DOI: 10.1016/j.nedt.2021.104812.
14. López-Carril S.L., Fajardo P.E., Jiménez M.A. (2021) Physical Activity Using Social Media During the COVID-19 Pandemic: The Perceptions of Sports Science Students. *Phys. Cult. Sport Stud. Res*., 92: 19-31. DOI: 10.2478/pcssr-2021-0022.
15. Nizami R., Latif M.Z., Wajid G. (2017) Preferred Learning Styles of Medical and Physiotherapy Students. *Ann. King Edward Med. Univ.*, 23(1): 73-76. DOI: 10.21649/akemu.v23i1.1511.
16. Parry R.H., Brown K. (2009) Teaching and learning communication skills in physiotherapy: What is done and how should it be done? *Physiother.,* 95: 294-301. DOI: 10.1016/j.physio.2009.05.003.
17. Paven M., Clayton R., Kermarrec G. (2021) Learning to teach and play futsal using digital tablets: What knowledge do sports science students mobilize? *Phys. Cult. Sport Stud. Res*., 91: 34-46. DOI: 10.2478/pcssr-2021-0017.
18. Reith-Hall E., Montgomery P. (2019) Protocol: Communication skills training for improving the communicative abilities of student social workers: A systematic review. *Campbell Syst. Rev.*, 15(3): e1038. DOI: 10.1002/cl2.1038.
19. Rossettini G., Turolla A., Gudjonsdottir B., Kapreli E., Salchinger B., Verheyden G., Palese A., Dell'Isola A., Xerri de Caro J. (2021) Digital Entry-Level Education in Physiotherapy: A Commentary to Inform Post-COVID-19 Future Directions. *Med. Sci. Educ.*, 31(6): 2071-2083. DOI: 10.1007/s40670-021-01439-z.
20. Shayana N., Gatabb T.A. (2012) The effectiveness of social skills training on students' levels of Happiness. *Procedia Soc. Behav. Sci.*, 46: 2693-2696. DOI: 10.1016/j.sbspro.2012.05.548.
21. Semma G.B.G., Kumar V. (2018) Impact of social skills training on self-esteem among male and female adolescent students. *J. Posit. Psychol.*, 9 (1): 147-151. DOI: 10.15614/ijpp.v9i01.11761.
22. Soundy A. Hemmings L., Gardiner L., Rosewilliam S., Heneghan N.R., Cronin K., Reid K. (2021) E-learning communication skills training for physiotherapy students: A two phased sequential mixed methods study, *Patient Educ. Couns.,* 104: 204-205. DOI: 10.1016/j.pec.2021.01.022.
23. Stewart J., Shanmugam S., Seenan Ch. (2016) Developing 21st century graduate attributes: incorporating novel teaching strategies in a physiotherapy curriculum. *Eur. J. Physiother.*, 18 (3): 194-199. DOI: 10.1080/21679169.2016.1181205.
24. Turhan B., Yakut Y. (2020) The opinions of physiotherapy students on online anatomy education during Covid-19 pandemic. *Anatomy,* 14(2): 134-138. DOI: 10.2399/ana.20.776029.

25. Unger M., Keiller L., Inglis-Jassiem G., Hanekom S.D. (2014) Teaching my peers: Perceptions of tutors in physiotherapy practical skills training. *Afr. J. Health Prof. Educ.,* 6(2): 203-206. DOI:10.7196/AJHPE.497.
26. Veasuvalingam B., Arzuman H. (2014) Physiotherapy Students' Perception of their Educational Environment: A study to identify the areas of concern for remedial measures at two Schools of Physiotherapy in Malaysia. *Educ. Med. J.*, 6(3): 30-39: DOI:10.5959/eimj.v6i3.233.
27. Ytreberg B., Aars M. (2015) Emotions in true peer teaching and learning: Physiotherapy students' experiences. *Eur. J. Physiother,* 17: 9-18. DOI: 10.3109/21679169.2014.983443.

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