

## 21<sup>st</sup>-century Physical Education Teacher Education Students: Both Content Learners and Skill Builders

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### Abstract

21st-century skills are among the qualifications that teacher candidates should have in order to provide quality education, as in every business field. To achieve this, the renovation of educational programs and integration of those skills into the course process is recommended. Exploring the experiences of physical education teacher education students (PETE) in the learning ecosystem, which is created with peer mentoring in the movement education course, was the purpose of this research. In this case study, a movement education course was designed with three peer mentors and 25 peer learners. Data were collected through Instagram page posts, field notes, researcher meetings, and student reflections and then analysed with inductively constant comparison. It was found that peer mentors and peer learners showed flexibility and adaptability in working in their teams if teammates were making an effort and otherwise ignored each other. Because all peer groups prepared content and taught others, they used their productivity, and accountability was shown through reflections among peer mentors, peer groups and course leaders. So, PETE took responsibility for the learning process. Story-creating provided permanent learning, connected knowledge to daily life and raised awareness of PETEs. So, when the 21st-century skills are embedded in the nature of courses, quality education can be achieved.

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## **Introduction**

Rapid changes in our social life have become increasingly dynamic with the development of science and technology, and the possibility of uncertain and unpredictable situations requires careful design of educational processes and contents. The fact that many paradigms have been shaken due to the COVID-19 pandemic has also revealed the need for people to adapt to new skills faster in the new century (Güven & Bülbül, 2023). Embedding training programs for 21st-century skills, which are expected to meet the needs of the new century, within disciplines is recommended as a strategy for raising innovative individuals.

Skills like creative, critical, original thinking, communication and cooperation, leadership, time management, problem-solving, decision-making, and innovation to adapt to the developing world need to be developed in all areas (Korkmaz & Kalaycı, 2019). When the literature is viewed, these skills are called the 21st-century skills. In general, individuals who use these skills, which are called 21st-century skills, keep up with the social environment they live in, can produce solutions to the problems of the age they live in, do research, think critically, improve themselves, look at life from different perspectives, understand and use developing technology, and have the equipment to do social media readings and digital readings. It covers all the skills necessary for the individual to succeed in his professional and social life, in short, to live a better and more qualified life (Çiftçi et al., 2021). 21st-century skills are required for students to succeed in business, academic life and personal life.

As in every field of work, 21st-century skills are among physical education teacher education (PETE) students' qualifications to provide quality education (Erten, 2020). 21st -century skills are included as learning and innovation skills (creativity and innovation, critical thinking and problem-solving, cooperation, communication), information-media and technology skills (information literacy, media literacy, technology literacy) and life and career skills (flexibility and adaptation, entrepreneurship and self-orientation, social and intercultural skills, productivity and responsibility, leadership and responsibility) (P21, 2019). The development of such skills is nowhere as important as in developing countries because the lack of significant improvements in learning outcomes shows that improving the quality of teaching is urgent. (Kim et al., 2019) In

order to provide students with 21st-century skills, teachers with these skills must first be trained (Aydemir et al., 2020). Aware of the demand for these skills, educators are trying to equip students with the essential competencies of the 21st century, but the challenges of incorporating 21st-century skills into classroom education remain (Gumus, 2022). In addition, the classroom is where students observe their teachers' modelling of these skills and can apply them independently. Therefore, it is equally essential to prepare and train teachers in acquiring 21st-century skills and disseminating these skills (Kim et al., 2019).

This change may be possible if teacher education programs recognise the practical experience of PETE students as an essential factor in learning to become teachers and provide environments where PETE students can structure knowledge by interacting with their peers. (Saçmalioğlu, et al., 2017) The environments where 21st-century competencies are included in educational environments should be equipped with classrooms, mobile devices for research and books, and internet access should be provided. These environments can be defined as workshops, enriched libraries, active learning classes, and laboratories, and their number is increasing daily. (Çiftci et al. 2021) Spatial environments can be prepared in undergraduate programs, and different strategies should be applied in implementing undergraduate education programs, one of which may be peer mentoring. Peer mentoring practices can support these educational environments. Mentoring is a period of training in which a more experienced person serves as an advisor to a relatively less experienced person. Mentoring programs are constantly needed to support less experienced professionals (Shareef, 2023). The literature about mentoring has many benefits in terms of academic development, such as improving knowledge and skills, improving writing skills, increasing self-regulation skills, completing the program, ensuring academic productivity, creating a professional and researcher identity, increasing communication in the academic field, developing mentoring and teamwork skills, creating professional relationships, learning the department culture and unwritten rules, and understanding the importance of cooperation (Can et al., 2019; McConnell et al., 2019). In the course that provided the research environment, the course process was continued with the support of peer mentors. It has been shown that when peer learners and teachers interact, they need 21st-century learning skills and reveal these skills to complete given tasks. (Saçmalioğlu, 2017).

Based on this, this research aims to investigate the experiences of students who have just started the physical education and sports teaching program in the movement education course in the learning ecosystem created with peer mentoring. It has been discovered that PETE students, both peer mentors and peer learners, also use 21st-century competencies to acquire field knowledge.

## **Method**

### **Research Design:**

This research is designed as a case study. The case study is one of the qualitative research methods aimed at revealing people's direct actions and experiences in the social activities they are involved in (Mutch, 2005). Qualitative research methods are applied to uncover people's direct actions and experiences in a social activity they undertake (Mutch, 2005). Case studies are ideally conducted in natural settings without manipulating participants, and meanings are derived from different perspectives. This study uses a case study design to examine and uncover a phenomenon in its natural context. Among the types of case study designs, a single case holistic design (Yin, 2018) has been adopted in this study. A single-case holistic design explored teacher candidates' learning experiences in student and peer mentor roles during a movement education course.

### **Context and Participants:**

The research was conducted in a first-year movement education course (14 weeks) at the Faculty of Sports Sciences of a university in Türkiye. As a research environment, the facilities within the facilities of the faculty, the faculty garden and the gymnasium were used. The study participants were PETE students (3 peer mentors and 25 first-year peer students) and the course lecturer. One of the peer mentors was in the final year of university and had previously served as a peer mentor in different education programs. The other two peer mentors were both in their third year of university studies and had conducted research as online peer mentors during the pandemic period. All names in the research have been used as synonyms.

### **Research Process:**

In the “movement education course”, which was the research context, a course design was created for how basic movement skills can be taught. For the first ten weeks, the focus was on one category

of fundamental movement skills in each lesson, and PETE students were engaged in experiencing the teaching process. Storytelling was utilised during this process. Peer mentors created a narrative structure by combining well-known series, cartoons, or digital game narratives with relevant basic movement skills for each lesson.

Before the lessons, peer learners were informed about the story structure to be used that week under the title of "Invitation to the lesson" on the Instagram and Discord channels created for the course, and a list of things to do for the course and a list of needs for the course were shared. This information included what would be done in the lesson and a list of requirements. Then, students were provided to prepare for the lesson by sharing how to apply the fiction of that week, which basic movement skills to study, and reading resources. Finally, two hours before the lesson, a reminder was sent with the title "Pre-Lesson" about the number of groups to be worked on that day and the location of the lesson.

During the lesson, four task cards were shared with the story fiction for each week from the social media account of the lesson. The duration is determined for each task card, and peer learners can perform these tasks with their groups. The completion of each task was monitored by peer mentors on social media accounts. At the end of the tasks, the reflection of the lesson was made together with the instructor, peer mentors and peer learners.

After the lesson, reels from Instagram composed of recorded images from each lesson were shared on social media accounts, and reflections were obtained from peer learners. Peer mentors and the course lecturer also conducted weekly meetings after each lesson to evaluate the lesson process.

In the last four weeks of the research, each peer group of learners applied their storytelling teaching design to their peers. Peer learning groups have become ready for teaching by receiving peer mentors' feedback while preparing their designs. They used every stage from pre-lesson to post-lesson in their teaching.

Throughout this research process, peer mentors provided feedback and support to peer learners in both in-class and out-of-class environments. In this way, both peer groups could experience all 21st-century skills in the context created.

### **Data Sources and Analysis:**

Various data collection sources were used throughout the research process. Peer mentors took field notes during the lesson every week, recorded reflection notes about the practices at the end of the lesson, and collected data by holding weekly meetings with the lecturer. Data were collected with audio recordings, social media messages, weekly short films, feedback from peers who learned during the course processes, and online reflections at the end of each lesson. In case studies, using more than one data collection tool to identify the case or situation is recommended. In addition, it should be handled in a holistic and detailed way. The data were analysed by inductive continuous comparison.

### **Results – Bulgular**

In this study, which investigated the experiences of PETE students in gaining 21st-century skills through peer mentoring, three themes were generated. In the first theme, it was observed that the peer learners allowed the members who made an effort while doing group work to continue working; otherwise, they excluded them from the group. Even though peer mentors may encounter issues in group work, they have to continue their tasks until they are completed, not to relinquish their job responsibilities. In the second theme, peers in the learner role and peer mentors produced storytelling course content. As a result, what they learned has become more permanent, and their awareness of being a teacher has increased. In the final theme, using narrative content connected to real life (using series, cartoons, or television show stories) has enabled teacher candidates to establish connections between what they have learned and their daily lives, making the learning more enduring.

#### ***Accept if there is an effort or ignore while working in peer groups.***

In the first theme, while the peer learners did not want their friends who did not make an efforts in group work in their teams and excluded them from their groups, the peer mentor group divided the responsibilities of the work to be done when they encountered a problem about making efforts and shared tasks for everyone. In this way, they completed all their tasks. When it was necessary to do group work, both candidate teachers had to use their communication, cooperation, and teamwork competencies. At the beginning of the process, both groups had different problems. When peer

students felt they had not established a fair collaboration in group activities, they reconsidered whether to include their teammates. There have been some changes within the groups.

*"She was not contributing to the tasks, so we did not want her in our group."(Selin-peer learner)."*

*"We were in the same group before, but while doing the tasks, she said she did not want to do it and did not bring any of her belongings. We did not want to work with her either, and we took her out of the group." (Esra-peer learner).*

However, peer learners tried to find a solution by undertaking the tasks of their friends in their groups or by spending more time and making sure that they understood them if they were making an effort even if they had deficiencies in doing the tasks. As a result, the group was able to complete their production.

*"When we did task-based group work, we merged more with the class and it caused us to make an effort to meet with our classmates who we disagree with in the class for a common purpose" (Seda-peer learner).*

*"When I worked with a group who put effort into the lesson, we greatly supported each other. We learnt the truth by discussing many skills we know and do not know. I looked at many issues from a different angle. I already knew how to share, but I shared even more. We helped each other with the necessary materials for the lesson, and we established harmony. We have learnt not to act apart from each other. To make an effort, to always strive for the better and many other things." (Ebrar - peer learner).*

*"In order to learn more actively in the lesson, knowing that I need to make an effort to think faster during the lesson, to distinguish what I know or what I think I know, how I should behave when I come together as a group, this course process has been beneficial. However, there were friends in the group who were less aware of the situation than I was. This reflected negatively on our work. We then found a friend who could make more effort instead of her. " (Selin - peer learner)*

On the other hand, peer mentors exhibited different thoughts and behaviours about communication breakdown and taking responsibility from the beginning of the process. However, since the peer mentors were responsible for preparing the course content and guiding their peers during the

lessons, using their accountability skills towards the course instructor, they managed to harmonise by incorporating adaptability, weekly leader rotation, and flexibility skills right from the beginning while completing tasks together.

*"Even though we have reached the third week, we cannot work with the same focus as my peers. So, there is a tension that arises. Even though I am not happy with this situation, this lesson had to be prepared somehow."* (Idil - peer mentor).

*"We could never reach Nursima on our first attempt to call. Rather than continuing to try to reach Nursima, we decided to take on all responsibilities with Idil. Then, she also started to involve herself with us because otherwise, she was falling behind in her other classes while doing mentoring"* (Hale- Peer mentor).

*"When we did not do some of our tasks properly, we had conflicts among ourselves, and this inevitably put me off preparing content. But since we also needed to do the tasks, we decided that everyone should prepare their content"* (Nursima - Peer mentor)

### ***Being a Productive Hero Matters***

The peer mentors prepared each lesson's content throughout the process, and, in their free time outside of course, they created content on social media for their peers. They discussed with the lecturer the content for every content creation. This process allowed them to enhance their accountability competence (such as preparing content accurately, convincing the instructor, etc.) while also experiencing the responsibility of becoming a teacher for the first time in a natural educational setting during their undergraduate education. Although this process was initially challenging for them, the fact that they were in the role of teachers enabled them to continue producing throughout the semester. Additionally, an active Instagram account was used within the scope of the course. After each lesson, peer instructors created a reel to share the week's lesson process. Teachers working from this platform, experts from the university or PETEs from other universities commented. Thus, by interacting with other stakeholders in the field through this platform, their accountability skills also worked for a wider audience.

*"I do not want to break Öznur teacher's trust in us. Ultimately, we must put a sufficient and ready product in her hands. That is why I am trying to communicate with my peer mentor friends and prepare effective and good course content."* (Idil-peer mentor).

*"Even though the discussions we had among ourselves while preparing the lesson content sometimes negatively affected my motivation, my excitement for being a teacher and my promise to Öznur teacher came to mind, and I picked up myself again. I have to work with this group and put a product out."* (Nursima-peer mentor)

*"The thought of being unable to bring products to the classroom, the thought that we may experience disruptions during the lesson, is enough to make us feel embarrassed. We should not confront Öznur teacher with such a problem."* (Hale -peer mentor)

On the other hand, the peer learner group had only the task of completing the activities in the lessons in the first weeks. But in this process, they had the opportunity to observe how to teach from their peers. In the last weeks, they carried out the task of teaching. This way, they could narrate their own teaching designs with their teams. They could collaborate with their groups, engage in teamwork, and use technology skills. Thus, they experienced both teaching and using what they learned in practice.

*"We tried to work more systematically and planned because we would teach in the class. Having the responsibility for the lessons we taught to our friends and our teacher contributed to our teaching experience."* (Ömer-peer learner)."

*"When we start preparing the lesson, using storytelling encourages us to think about creating a lesson plan. It allows us to produce new content. It adds productivity and creativity to us while preparing fiction specific to the subject we will prepare, so we learn better, and it is catchy. "*  
(Hakkı-peer learner)

### ***I Realised The Connection Between What I Learned In The Course and My Own Life.***

As the last theme, it was observed that the peer learners quickly integrated the knowledge and skills of the fundamental movement skills they acquired with the lessons' stories into their daily lives and that the storytelling fiction came to their minds while performing that skill. In this theme, peer

learners have mentioned that they learn at their own pace and in the way they want, stating that they now understand what movements mean when they see someone playing in the park in their daily lives and realise the significance of the movements they use in their daily routines. They have also mentioned that they now pay more attention while watching movies, interpreting the movements in their minds. They believe that this way they will remember the information they learn, and when they watch movies they have seen before with this perspective, they notice new things. The reason for this is the opportunity given to teacher candidates to be active in production and teaching, which has influenced this situation.

*"The use of well-known games or movies in the activity makes it more memorable because what we learned in the lesson now comes to our minds when we see that game or movie. This helps retain the information more effectively by creating associations between the content and familiar experiences."*(Emincan - peer learner).

*"I think that the knowledge in the lesson teaches students to think differently about making a more enjoyable and more permanent learning, not only with storytelling but also with storytelling through games"* (Sumeyye - peer learner)

*"Using games initially captures the student's interest, and it helps reinforce what the student has learned or is currently learning through game designs."* (Ahmet -peer learner).

*"Gamification and storytelling should always be used as reinforcing tools. People tend to forget what they hear, but they do not forget what they do."* (Aylin - peer learner)

In addition, rather than in traditional classroom environments, students' interest in the lesson was increased with different story fiction and gamification plans in different locations every week, and peer learners stated that they set an example for them in the lessons they will teach when they become teachers in the future by realising themselves when they make self-evaluation. The reason is that PETE students' other courses are taught in a traditional classroom environment with a straight lesson style and that the lessons taught using storytelling and gamification create awareness with increasing interest.

*"If I am going to be a teacher of this generation, I must be an innovative, adaptable teacher." I have learned that I should remember the question of 'What can I do differently and new?'* rather

*than sticking to the old ways as it used to be. It has provided a process of generating new content and continues to provide how I can benefit my students best" (Selin- peer learner)."*

*Our learning through these activities and the creativity they bring to us are also preparing the groundwork for the activities we will assign to students in the future." (Musa- peer learner)*

*"These activities encourage us to use our imagination, gain experience, and enhance our problem-solving skills, allowing us to adapt and apply solutions quickly in any challenging situation, thus adding an extra dimension beyond theoretical lessons." (Çağrı- peer learner)*

*"In terms of teaching, it has an extra dimension beyond the theoretical lessons in terms of finding a solution in every difficult condition in terms of imagination and gaining experience and adapting it quickly to that moment." (Çağan - peer learner)*

## **Discussion**

In the initial findings of the research, it was observed that peer mentors took responsibility for teaching despite disagreements that occurred during the process and completed their tasks professionally until the end. PETE students who were assigned responsibilities also completed their tasks, even though they were still learning. There are expectations for individuals to take responsibility in their relevant fields within the scope of entrepreneurship and responsibility skills (Kale, 2022). The peer learner group applied the option to stay together until the task was completed only if everyone made an effort. If team members did not make an effort, they preferred to exclude that person from the group. Since the teacher candidates in both groups were at different levels and had different responsibilities in the research, these different problem-solving methods may have emerged. For 21st-century skills, there is a need for interactive environments that allow students to collaborate with their peers and are generally based on tasks or project-based interactions rather than traditional classroom settings (Saçmalıoğlu, 2017). In this research, peer learners and peer mentor groups experienced these competencies in an interactive process. It has been revealed that integrating 21st-century skills into the practices of teacher candidates is practical for them to experience the natural context.

In the second finding of the research, one of the motivations for peer mentors to fulfil their assigned responsibilities was being accountable and responsible to the course instructor and peer learners.

These two 21st-century skills are also included as life and career skills that teacher candidates will need in their professional lives (P21, 2019). Moreover, teachers' accountability and sense of responsibility are predefined roles they must fulfil throughout their teaching careers (Huang et al., 2019). Therefore, when these skills are embedded in the nature of teacher education courses, it is believed that teacher candidates will be better prepared when they start their careers.

Regarding the final finding of the research, PETE students mentioned that when they applied the fundamental movement skills taught in the course in their daily lives or encountered them, they remembered the narrative structure used in the course. Thus, it was observed that with the storytelling structure, information became more enduring and easily remembered. Additionally, it was seen that storytelling was much more effective in increasing the permanence of the knowledge students learned than the existing method (Özkuzukıran et al., 2020). During the application, students in the experimental group improved their knowledge in the course, explored the external world better, and had the opportunity to concretise abstract information, resulting in increased success and a certain level of permanence (Köse et al., 2020). Furthermore, they approached TV series or movies they had previously watched or would watch for the first time from a different perspective, noticing skills they had not previously recognised. When 21st-century skills are included in the process through storytelling and gamification, it was observed that PETE students increased their awareness and engaged in self-assessment.

## **Conclusion**

Just as 21st-century competencies are essential in every field, it is important to provide realistic experiences to teacher candidates to be developed in the teaching profession as well. In this way, teacher candidates achieve their own personal and professional awareness. In this research, when natural environments that will reveal 21st-century skills are provided, prospective teachers can gain skills and experience against the difficulties and problems they may encounter in their professional lives. It is essential to ensure that these natural environments, away from the traditional classroom environment, make lessons more remarkable and lasting through group work and interactive tasks. At the same time, the permanence of the knowledge and skills learned at the faculty ensures that PETE students are prepared for their professional lives in a more harmonious and experienced

manner. Thus, a quality education can be achieved in which 21st-century skills are embedded in the nature of the courses.

With the peer mentoring application, teacher candidates had the opportunity to experience real field experience during their undergraduate education, where the teaching environment was limited. At the same time, they actively experienced skills like group work, leadership etc. In this way, they were introduced to aspects they were unaware of themselves, and they also experienced awareness of their professional knowledge by leaving their comfort zones. In addition, PETE students in the first year of the undergraduate program received support from the peer mentor when communicating with the lecturer they met for the first time. Thus, it has been revealed that peer mentoring is in a structure that can also serve as a bridge between students and teaching staff.

It is found that the use of storytelling in the teaching process is effective for peers in the role of learners both to ensure permanent learning and to relate it to experiences in daily life. It is also observed that active participation is provided simultaneously when the lesson context is created with storytelling. PETE students can quickly transfer what they have learned here to other contexts.

### **Recommendations**

It will make it easier for PETE students preparing for the physical education teaching profession to transfer their learning to their lives by experiencing these skills to graduate from undergraduate education as competent individuals. It is recommended that this process, implemented in the context of a course, be integrated into the undergraduate program and sustainable for teacher candidates at every grade level. Although peer mentoring has been increasingly included in applications in recent years, it is recommended to make it sustainable by extending it to the entire preparation processes for the profession, such as the undergraduate program. At the university level, when storytelling is included in the educational design, it is found that learning is permanent, and the connection of information with everyday life is easier to establish. It is recommended to conduct long-term studies, especially in contexts of prospective teachers who will work with students in the future.

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