Improving student learning outcomes in sports massage and sports injury prevention handling courses through a project based learning model using active learning methods

Ugi Nugraha*, Yonifia Anjanika, Sugih Suhartini
Jurusan Pendidikan Olahraga, Fakultas Ilmu Keguruan dan Pendidikan, Universitas Jambi,
INDONESIA.

ABSTRACT

Problems: The massage course is one of the practical courses that students in the Department of Sports and Health Education must take with the requirement of passing basic anatomy and exercise physiology courses. Based on observations of 4th semester Sports Coaching students in the Theory and Practice lecture on the Sports Massage Handling Sports Massage Handling Sports Injury Prevention course, the learning method used is still conventional, namely the lecturer still dominates the learning process. Passive learning methods are certainly less effective and do not involve students in teaching and learning activities so that students tend to be passive. **Purpose**: The aim of this research is to determine the improvement in student results in the Sports Massage and Sports Injury Prevention courses through the Project Based Learning (PBL) Model Using Active Learning Methods. **Methods**: This type of research is classroom action research, with two cycles. The instrument used in this research was the Sports Massage course and the treatment of sports injury prevention. The subjects in this research were 4th semester Sports Coaching students, totaling 33 students. The data analysis technique used is descriptive statistics with percentages. **Result**: Based on the research results, the test results for the success of sports massage practice were obtained using the Student Active Learning Method approach. The Project Based Learning (PBL) model achieved achievement in pre-action, only 7 students (21.21%) completed, in cycle 1 results 18 students (54.54%) completed with an average score of 57.58%, and in cycle 2 saw an increase in learning outcomes as many as 29 students (87.88%) successfully completed it. **Conclusion:** Learning outcomes in cycle II obtained from reflection: students have started to get used to learning that uses a project or practice approach with injury cases, students are more active and creative in the learning process.

Keywords: learning outcomes, sports massage, injury management, project-based learning, active learning methods

Corresponding Author:
Ugi Nugraha
Jurusan Pendidikan Olahraga, Fakultas Ilmu Keguruan dan Pendidikan, Universitas Jambi,
INDONESIA.
Email: ugi.nugraha@unja.ac.id

Introduction

Activities in sports, especially for athletes, have high intensity to reach peak performance so that the body's work exceeds normal (Syukur. 2021). This activity makes the body fit and the level of fatigue is also high, so a recovery program is needed to reduce an athlete's fatigue (Mubarak. 2021). Recovery is returning the body's condition to normal, ready to carry out the next activity (Arifushalat. 2019), this understanding is very important for athletes and coaches in carrying out training programs to get the best results or achievements (Abdillah. 2018). Recovery has an active method, namely doing light activities aimed at recovery and passive, namely exercises that do not involve activity or complete rest aimed at recovery (Fahmi. 2019., Laksana et al. 2019).

The most widely used passive recovery technique is sports massage. Massage has become increasingly popular among consumers and doctors to relieve many complaints, and is widely available in most regions (Marhadi, 2022). Massage is the application of massage techniques carried out as soon as possible after an event to reduce muscle tension, pain and recovery time (Musrifin. 2021). The right

pressure in massage can help maximum recovery for athletes (Hasibuan. 2020., Setiawan et al. 2023). Consistent practice is needed to train the feeling of a masseur's fingers so that it has a beneficial effect (Kusuma & Anhar. 2020). Massage is an art of hand movement which has the aim of gaining fitness, recovering from injuries, curing disease, and supporting sports and work performance. The mechanical effect of hand movements during this massage will create a feeling of calm, comfort, relaxation, and create a refreshing feeling in the body. the recipient (Hadi. 2021). In Indonesian, the word massage has been adapted to become massage. The perpetrator or person who provides massage treatment is called masseur for men and masseus for women (Jusuf et al. 2020).

With a lot of research discussing the beneficial effects after massage, there needs to be further development as a new science in the world of education adapted to the higher education curriculum. Currently, sports massage learning can be obtained in sports department lectures where the competencies are prepared. Students have skills as sports massage therapists/masseurs.

The massage course is one of the practical courses that students in the Department of Sports and Health Education must take with the requirement of passing basic anatomy and exercise physiology courses. This course has an important role in the athlete's recovery process to keep the body fit so that it has an important role in the world of sport. In this course, students are expected to have practical and theoretical abilities.

Based on observations of 4th semester Sports Coaching students in the Theory and Practice lecture on the Sports Massage Handling Sports Massage Handling Sports Injury Prevention course, the learning method used is still conventional, namely the lecturer still dominates the learning process. The learning pattern at each meeting is to explain the material, provide exercises and at the end of the lecture the lecturer provides an evaluation of the material that has been presented. Passive learning methods are certainly less effective and do not involve students in teaching and learning activities so that students tend to be passive, in other words the ongoing learning of the Sports Massage and Sports Injury Prevention course has not been effective in achieving the set learning process objectives.

Efforts to improve learning outcomes from learning massage movement technique skills cannot be separated from various factors that influence it (Irawan. 2022). In this case, creativity is needed from lecturers who can make students interested and like the learning process. It is necessary to plan and develop the application of appropriate learning methods so that students have the opportunity to interact and can obtain information from various sources so that optimal results can be obtained from learning massage movement technique skills. If students are used to studying, they only listen to the information explained by the lecturer without them knowing the actual conditions that occur in the field. In fact, they will later go into the field during practical field experience and enter the real world of work. Learning in higher education should focus more on understanding the material which is realized by applying the material according to the work environment that one will encounter. The most strategic and efficient learning method to overcome these things that can be used is the application of the PBL (Problem Based Learning) learning method because by applying this method.

The problem based learning (PBL) learning model or known as the problem based learning model is a learning model that uses real problems encountered in the environment (Riskayani. 2022., Nurtanto. 2020) as a basis for acquiring knowledge and concepts through the application of movement engineering skills. massage and solving problems in dealing with various kinds of sports injuries experienced by various athletes.

This Project Based Learning method is different from the role of educators in direct project-based learning which emphasizes the acquisition of ideas and the educator's ability to present problems, ask questions, and facilitate investigations and conversations (Irawan & Haryani. 2023). Project-based learning cannot be done without skills developed by educators (Ranti. 2023). In project-based learning, students learn, think critically, and solve problems skillfully, developing technical skills and a deep understanding of how to use real-world problems (Aji. 2020). In this project-based learning approach, the learning approach focuses on practical problem solving, teamwork, feedback, discussions and final reports.

In this research, the PJBL learning model used is based on the Active Learning method. The Active Learning method is to position the lecturer as someone who creates a conducive learning atmosphere or as a facilitator in learning, while students are students who must be active (Aditama et al. 2022, Ren et al. 2021). In the active learning process, interactive dialogue occurs between students and students, students and lecturers or students and other learning resources (Wulandari et al. 2022). In this active learning atmosphere, students are not burdened individually in solving the problems they face in learning. The aim of active learning is to make students active and conditioned when studying, creating a learning atmosphere that is dynamic, effective and efficient and far from a boring and boring

atmosphere (Rahayu & Budiman. 2020).

In massage learning, using the Active Learning method, students are not just silent or passive, but they are trained to be active, especially demonstrating massage skills. The application of this learning method is expected to facilitate students' understanding of the main material of Sports Massage techniques for Handling Sports Injury Prevention. In general, active learning learning methods are often used by lecturers and professors for students and students.

Method

The research carried out is Classroom Action Research (CAR) which focuses on efforts to change current real conditions towards expected conditions (Niemi. 2019). This research is a descriptive-quantitative analysis research which aims to improve and find solutions to real and practical problems in improving the quality of learning in the classroom which are experienced directly in interactions between lecturers and students who are studying. Each cycle includes planning, action, observation and reflection cycle.

For more details regarding the Classroom Action Research cycle, below is a description of the research cycle, which is as follows:
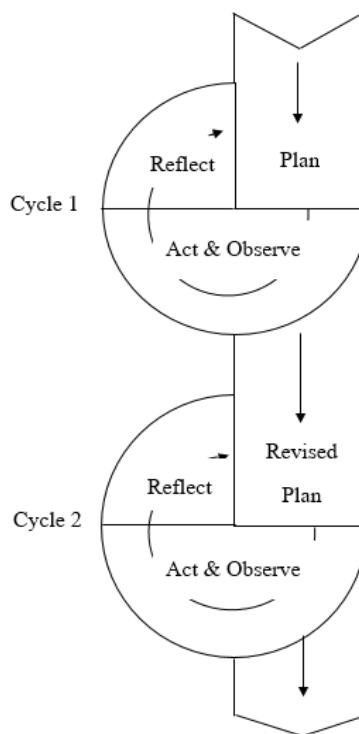

Figure 1. Research Flow

Result

The research, which was carried out in the massage room of the Department of Sports Education and Sports Coaching, UNJA, began with observation activities on how students carry out basic sports massage techniques and preventive treatment for sports injuries in September 2023. The observation was aimed at finding out how lecturers teach massage and how students carry out treatment techniques. sports injury prevention.

The results of the initial test carried out on Sports Coaching students numbered 33 students, only 7 students completed it. This pre-action activity was carried out by 33 students, 28 male students and 5 female students. The results of the sports massage practice test and the handling of sports injury prevention by students in pre-action activities are presented in the form of a bar chart, for more details can be seen in the following picture:
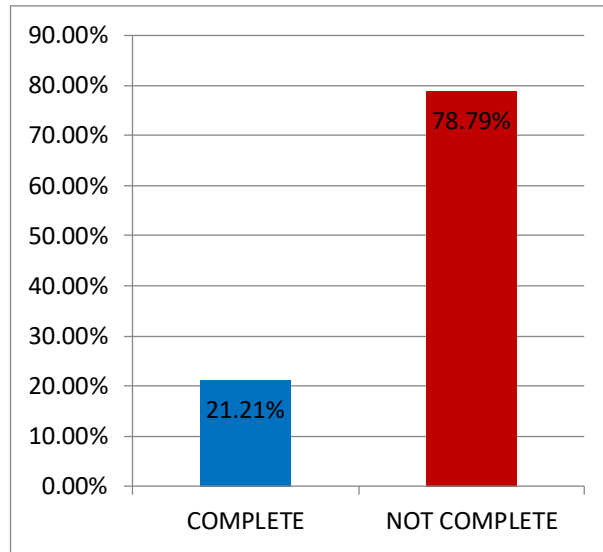
Figure 1. Pre-action Bar Chart

Based on the results of the pre-action test, an average score of 57.58 was obtained. The number of students who achieved completion was only 7 students (21.21%) and 26 students who had not achieved the completion score (78.79%). From the pre-action tests carried out, it was discovered that there were several students who were unable to perform sports massage techniques and handle sports injury prevention correctly, from basic techniques to injury management techniques.

The results of sports massage technique tests and sports injury prevention management for Sports Coaching Students in cycle I activities are presented in the form of a bar chart, for more details can be seen in the following picture:
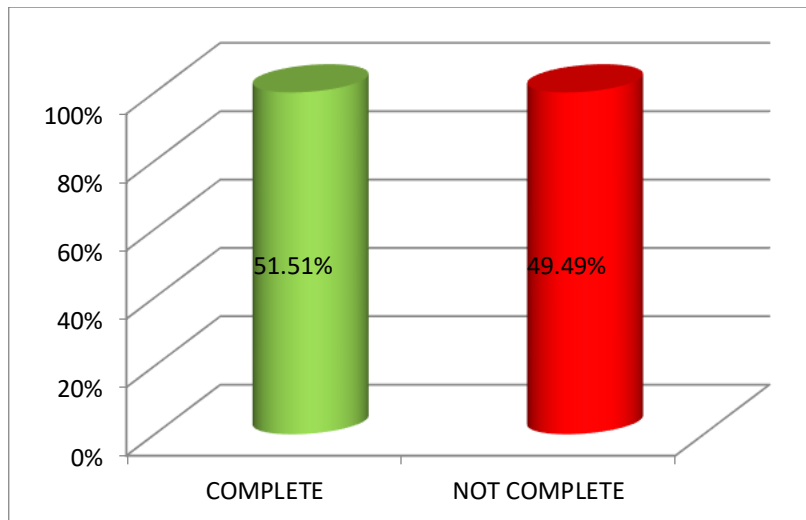

Figure 2. Bar diagram of cycle 1 results

Based on the results of the pre-action test, an average score of 57.58 was obtained. The number of students who achieved completeness was only 17 students (51.51%) and 16 students (48.49%) who had not achieved completeness. The results of learning about sports massage techniques and preventative care for sports injuries show that there are still some students who still experience difficulties, especially in carrying out preventive care for sports injuries. Because in cycle I the students had not yet achieved the completion score, namely 75% of students who completed, the research was continued in cycle II.

The results of sports massage technique tests and sports injury prevention management for Sports Coaching Students in cycle II activities are presented in the form of a bar chart, for more details, see the following picture:
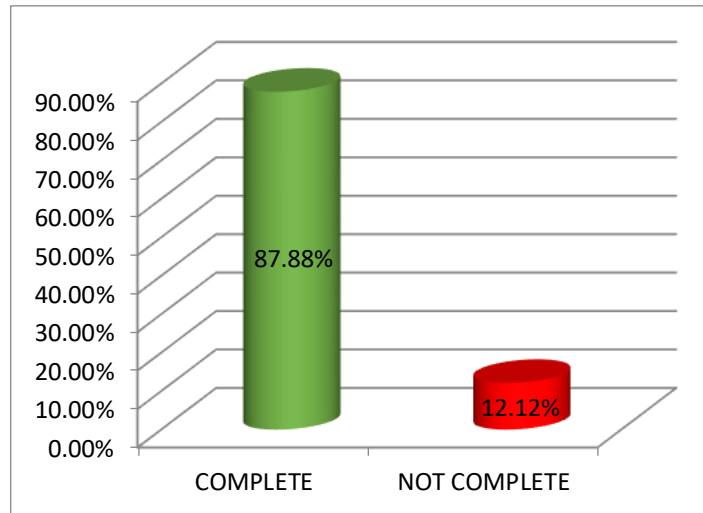
Figure 4. Bar diagram of cycle 2 results

Based on the results of the second cycle test, an average value of 79.76% was obtained. The number of students who achieved the completion score was 29 students (87.88%) and only 4 students who had not achieved the completion score (12.12%). Based on these results, students have met the completion score, so the research is considered successful.

Discussion

In cycle I, learning was carried out by carrying out sports massage and handling sports injuries in cases of swollen ankles, in the form of practice with one other friend. This learning model emphasizes basic massage techniques such as effleurage, friction, petrisage. In this first cycle, the research lecturer has carried out learning in accordance with the RPS, but the students are still hesitant and not ready to carry out massage practice activities and prevent injury treatment for swollen ankles. From the results of discussions and questions and answers, it was concluded that students still need to practice sports massage as often as possible.

During the implementation of the action, it turned out that students were not used to drawing conclusions from the activities carried out, during practice and discussions it was still dominated by one or two students and there was still material that the students had not yet mastered.

In cycle II, sports massage and sports injury management were taught using a practical approach using the injury management method using the RICE technique for treating swelling on the feet. In accordance with the reflection in cycle I, the learning process was dynamic, and it was fun for lecturers and students to carry out learning happily. Students actively carry out practical activities and exchange ideas with their groups and between groups.

In the implementation of cycle II, it was discovered that students were able to carry out sports massage practice activities and handle sports injuries in cases of swollen ankles using the RICE method enthusiastically with an increase in effective activities as indicated by an increase in student learning outcomes with completion reaching 79.76%. Of the total number of Sports Coaching students, 29 have obtained learning outcomes above the completion score limit, namely 75. After carrying out action research for 2 cycles and each cycle a test was carried out to obtain learning outcomes for sports massage and sports injury prevention management.

Efforts to increase learning outcomes for sports massage and handling sports injuries were successful if seen from the increase in each cycle, which on average reached completion in each action cycle. The greatest increase in learning outcomes was in the second cycle. This occurred because students had begun to understand the concept of learning. with a project approach and feel happy in participating in learning so that the results obtained by students increase and the learning process goes according to plan and results are obtained as expected.

Conclusion

As a result of sharing ideas with collaborators regarding the implementation of the learning process and learning outcomes in cycle II, reflection results were obtained: students have started to get used to learning that uses a project or practice approach with injury cases, students are more active and

creative in the learning process. The research lecturer increasingly understands the weaknesses and continues to look for alternative solutions. The learning process is in accordance with the RPS and the lecturer has carried out his role in accordance with the learning model that has been determined. Overall, the learning objectives have been achieved according to the plan after carrying out actions in cycle II, which is a reflection of cycle I in cycle II. The results of students' learning about sports massage and sports injury management increased to the point that 29 students (87.88%) got a score above the completeness limit and were declared complete.

References

Abdillah, G. D., & Ashadi, K. (2018). Pemahaman pelatih sekolah sepakbola se kota madiun tentang physiological rocovery. *Jurnal Prestasi Olahraga*, *3*(1).

Aditama, W. B., Widiani, N., Zohdi, S., & Mukarromah, A. (2022). Implementasi Strategi Active Learning dengan Metode Reading Aloud dalam Meningkatkan Keterampilan Menyimak Siswa SD. *Journal of Science and Education Research*, *1*(1), 22-28.

Aji, R. B., Setiyawan, S., & Fahmi, D. A. (2020). The effectiveness of problem based learning model learning outcomes of basketball learning through audio visual media in class I ips 1 sma N 2 kendal students. *Journal of Sport Coaching and Physical Education*, *5*(1), 42-47.

Arifushalat, A. (2019). *Pengaruh Recovery Aktif dan Pasif Terhadap Denyut Nadi Pemulihan pada Atlet Sepak Bola SMA Negeri Keberbakatan Olahraga* (Doctoral dissertation, UNIVERSITAS NEGERI MAKASSAR).

Fahmi, H., & Ashadi, K. (2019). The comparation of sport massage and hydrotherapy cold water to physiological recovery. *JUARA: Jurnal Olahraga*, *4*(2), 196-209.

Hadi, B. S. (2021). Pengaruh Pemberian Perlakuan Sport Massage Terhadap Kebugaran Jasmani Pada Pemain Ukm Sepakbola Unila Di Universitas Lampung.

Hasibuan, M. H., & Jutalo, Y. H. (2020). Pengaruh Sport Massage Terhadap Penurunan Kadar Asam Laktat Pada Kop Sepak Bola Universitas Negeri Jakarta. *Jurnal Ilmiah Sport Coaching and Education*, *4*(1), 37-42.

Irawan, A. A. (2022). *Pengembangan Model Pembelajaran Savi Pada Mata Kuliah Massage Olahraga Berbasis Mobile-Learning* (Doctoral dissertation, UNIVERSITAS NEGERI JAKARTA).

Irawan, S., & Haryani, M. (2023). Dampak Media Pembelajaran Melalui Website Dalam Meningkatkan Hasil Belajar Dengan Model Pembelajaran PBL. *Global Journal Sports*, *1*(1), 243-253.

Jusuf, J. B. K., Raharja, A. T., Mahardhika, N. A., & Festiawan, R. (2020). Pengaruh teknik effleurage dan petrissage terhadap penurunan perasaan lelah pasca latihan Pencak Silat. *Jurnal Keolahragaan*, *8*(1), 1-8.

Kusuma, B., & Anhar, D. (2020). Sport Massage bagi Masyarakat Desa Sumberejo Kecamatan Kaliwungu Kabupaten Kendal 2020. *Join*, *1*(2), 65-67.

Laksana, B. D., Ugelta, S., & Jajat, J. (2019). Recovery kondisi Denyut Nadi dengan Joging dan Istirahat Dinamis. *Jurnal keolahragaan*, *5*(2), 12-19.

Marhadi, M., Agusman, A., Rahmah, R., & Bakar, A. (2022). Pengaruh sport massage, istirahat aktif dan pasif terhadap kecepatan renang 50 meter gaya crawl dan penurunan kadar asam laktat darah pada atlet renang kota palu. *BABASAL Sport Education Journal*, *3*(2), 94-102.

Mubarak, Y., Muttaqien, F., & Asnawati, A. (2021). Literature Review: Pengaruh Olahraga terhadap Heart Rate Recovery Penderita Hipertensi. *Homeostasis*, *4*(1), 155-162.

Musrifin, A. Y., & Bausad, A. A. (2021). Pengaruh Sport Massage Terhadap Kecemasan Olahraga Atlet Futsal Undikma. *Jurnal Ilmiah Mandala Education*, *7*(2).

Niemi, R. (2019). Five approaches to pedagogical action research. *Educational Action Research*, *27*(5), 651-666.

Nurtanto, M., Fawaid, M., & Sofyan, H. (2020, July). Problem based learning (PBL) in Industry 4.0: Improving learning quality through character-based literacy learning and life career skill (LL-LCS). In *Journal of Physics: Conference Series* (Vol. 1573, No. 1, p. 012006). IOP Publishing.

Rahayu, R., Subroto, T., & Budiman, D. (2020). Implementasi Model Pembelajaran Pada Olahraga Permainan Bolatangan. *Physical Activity Journal (PAJU)*, *1*(2), 107-114.

Ranti, S. P. (2023, December). Pengaruh Model Pembelajaran PJBL & PBL Terhadap Hasil Belajar Senam Irama. In *Seminar Nasional Keindonesiaan (FPIPSKR)* (Vol. 8, No. 01).

Ren, P., Xiao, Y., Chang, X., Huang, P. Y., Li, Z., Gupta, B. B., ... & Wang, X. (2021). A survey of deep active learning. *ACM computing surveys (CSUR)*, *54*(9), 1-40.

Riskayani, N. L. (2022). Model Pembelajaran Problem Based Learning (PBL) Meningkatkan Aktivitas

dan Hasil Belajar Teknik Dasar Passing Bola Basket. *Jurnal Pendidikan Jasmani, Olahraga dan Kesehatan Undiksha*, *10*(1), 1-7.

Syukur, N. I. (2021). Hubungan tingkat kecemasan dengan performa atlet kontingen pekan olahraga nasional xx provinsi sulawesi selatan (Doctoral dissertation, Universitas Hasanuddin).

Wulandari, I., Arnando, M., Amra, F., Sasmitha, W., Lawanis, H., Syampurma, H., ... & Zulbahri, Z. (2022). Pelatihan dan Penanganan Gangguan Psikologis Bagi Wasit Tenis Lapangan Sumatera Barat dalam Persiapan Penugasan Wasit pada Pekan Olahraga Provinsi Sumatera Barat 2022. *Jurnal Berkarya Pengabdian Masyarakat*, *4*(1), 54-59.