

Assistance in the Use of a Website-Based Disability Sports Competition Management System for NPCI Coaches and Officials throughout East Java

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Abstract

The National Paralympic Committee of Indonesia (NPCI) East Java oversees the organization of sports competitions for individuals with disabilities throughout the East Java province. Nonetheless, this organization encounters three significant challenges: (1) the lack of a system based on technology for managing competitions; (2) insufficient knowledge among coaches and officials regarding disability classification, leading to frequent athlete misplacements; and (3) few opportunities for skill development for NPCI coaches and officials in various districts and cities. This Community Service (PkM) initiative seeks to support NPCI coaches and officials across East Java in utilizing a competition management system based on a website, which will be implemented during the 2024 Provincial Paralympic Championships (Peparprov) II, taking place from June 13 to June 17, 2024, at the Oentoeng Poedjadi Athletic Field, FIKK, Surabaya State University. A total of 92 coaches and officials from 29 districts and cities actively took part. The evaluation of implementation quality through a 19-item tool covering four aspects showed an average total of 4.49 (89.9%), classified as excellent, with the presenters' capability receiving the top score of 4.51 (90.3%). The assessment of website usage quality using 19 items across four dimensions indicated an average total of 4.12 (82.5%) in the good category, with the dimensions of ease of use and content achieving the highest ratings (4.15; 83.0%). The results included enhanced skills for coaches and officials, the functioning of the management system during Peparprov II, publications in mass media, and a partnership agreement between FIKK Unesa and NPCI East Java.

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1. INTRODUCTION

The National Paralympic Committee of Indonesia (NPCI) is the entity in charge of supporting, overseeing, and managing competitive sports for individuals with disabilities in Indonesia. Since it was officially recognized as an Association with the Decree of the Minister of Law and Human Rights No. AHU-0020126.AH.01.07.TAHUN 2015, NPCI has worked closely with the Indonesian National Sports Committee (KONI). At the provincial level, NPCI East Java handles the growth and management of sports competitions for individuals with disabilities, focusing on four primary categories: visual impairment, physical disabilities, intellectual challenges, and deafness.

Sports for persons with disabilities hold significant importance beyond just competitive success. (Kiuppis, 2018) points out that being part of sports is a basic human right; however, many individuals with disabilities still face obstacles in joining organized sports. In Indonesia, statistics reveal that even though 1,985 disabled athletes took part in 12 different sports during the 16th National Paralympic Games (Peparnas) in Papua, only 416 athletes were involved at the provincial level, and just 156 at the district level (NPCI Jatim, 2023; NPCI Kab Pasuruan, 2023). This disparity in participation is partly due to inadequate management of sports events.

Research by (Damanik & Machdum, 2019) on NPCI's districts indicated that enhancing groups of individuals with disabilities through sports is greatly impacted by the skills of coaches and administrators. The effectiveness of empowering these groups diminishes when coaches and officials lack sufficient experience. This reinforces the idea that enhancing the skills of NPCI coaches and officials is not just a technical concern, but also relates to broader issues of empowerment and the rights of individuals with disabilities.

On the technical side of managing sports events, there is an urgent requirement for a management system based on information technology. (Li, 2024) highlighted that a comprehensive data management system for championships can greatly enhance the precision, effectiveness, and quality of competition execution. Moreover, (Wen & Wang, 2022) in their study on information systems for major sports events noted that such systems act as the crucial backbone of event management, catering to the requirements of events, administration, media, and the public simultaneously. In the absence of a dependable system, events become susceptible to administrative mistakes that can negatively impact athletes.

The classification of disabilities in Paralympic sports is extremely intricate. (Fliess Douer et al., 2021) in their Delphi study related to wheelchair basketball classification pointed out various hurdles and prospects within the classification framework, which include the necessity for officials and coaches to have a better understanding. (Barrera-Garcimartín et al., 2025) also stressed that eligibility and classification processes in sports for individuals with disabilities are vital for the advancement of Paralympic sports and have a direct effect on the success of athletes' careers.

From the viewpoint of the development of sports officials, (Cunningham et al., 2022) conducted a systematic review spanning 30 years which revealed that the training and development of sports officials greatly influences the effectiveness of competition management. (Sunde et al., 2023) further noted that enhancing the skills and self-assurance of officials via organized training programs significantly affects decision-making quality and the long-term retention of officials. Nevertheless, structured programs aimed at enhancing competency for NPCI coaches and officials within districts or cities are still quite uncommon.

Considering the situational analysis and review of existing literature, this Community Service (PkM) project was created to tackle three key challenges facing NPCI East Java: (1) the absence of a technology-oriented championship management system; (2) a limited grasp among coaches and officials about disability classification; and (3) a lack of activities focused on improving competencies. The method employed involved hands-on mentoring in utilizing the championship management website within the framework of an actual championship—Peparprov II in 2024—to ensure that the learning was genuine and had a tangible effect. This article aims to detail the implementation process, assess the results, and outline the achievements from this PkM initiative.

2. IMPLEMENTATION METHOD

This Community Service Program (PkM) initiative employs a mentoring strategy that actively involves participants through theoretical discussions, demonstrations, and practical application within a real event setting. Unlike traditional training methods that separate learning

from application, this approach enables individuals to gain genuine experience, as knowledge and abilities are enhanced through direct engagement in organizing a real championship. (Cardoso et al., 2020) assert that initiatives combining real competitions with skill development have shown greater success in enhancing the capabilities of participants within the sports arena.

The implementation of PkM involves eight phases: (A) needs assessment—recognizing the partner's challenges and training requirements; (B) content development—creating training materials with the East Java NPCI administration; (C) instructor selection—choosing speakers based on their qualifications; (D) participant outreach—working with the district/city NPCI to recruit attendees; (E) content delivery—presenting theoretical aspects of competition management and website navigation; (F) case discussions and simulation—reviewing real scenarios and practicing system usage; (G) experience sharing—facilitating discussions between attendees and experts; and (H) practical application and assessment—using the website during Peparprov II and measuring quality.

The event occurred from June 13 to 17, 2024, at the Oentoeng Poedjadi Athletic Field, Faculty of Sport and Health Sciences (FIKK), Surabaya State University. This event was part of the 2024 Provincial Paralympic Championships (Peparprov) II. A total of 92 NPCI coaches and officials representing 29 regencies/cities from East Java attended, which included 77 men (83.7%) and 15 women (16.3%). The Dean of FIKK Unesa, Dr. Dwi Cahyo Kartiko, S.Pd., M.Kes., who also led the PkM team, formally inaugurated the event.

The mentoring content was developed by a group of lecturers from FIKK Unesa and NPCI East Java professionals and comprised three key elements. First, an introduction to the disability classification system in Paralympic sports as per NPCI and International Paralympic Committee (IPC) guidelines, which include categories for visual impairment, physical disabilities (covering amputees, les autres, paraplegia, and cerebral palsy), intellectual disabilities, and deaf-mute individuals. Second, the established protocols for organizing disability sports events, including participant registration, classification checks, race scheduling, and result documentation. Third, the application of the NPCI East Java championship management website created by the PkM team, which features tools for participant registration, classification management, scheduling, and real-time results reporting.

The evaluation was carried out using two assessment tools. The first was a training implementation quality assessment with 19 items addressing four areas: (A) Content (4 items); (B) Execution (5 items); (C) Facilities (4 items); and (D) Speaker Effectiveness (6 items). The second was a website usability assessment, also with 19 items, drawing from four usability dimensions: (A) User-Friendliness (6 items); (B) Personalization (5 items); (C) Speed of Access/Download Delay (4 items); and (D) Information Quality (4 items). These dimensions align with the satisfaction indicators for information system users put forth by (Fitria et al., 2024) and (Sidhawara, 2022), highlighting that usability is determined by ease of use, functionality, learning simplicity, and user satisfaction. Both assessment tools utilized a Likert scale ranging from 1 to 5, with categorization as follows: 0–20% (very poor), 20–40% (poor), 40–60% (adequate), 60–80% (good), and 80–100% (excellent). Data analysis was performed descriptively.

3. RESULTS AND DISCUSSION

Research Results

All 92 participants assessed the quality of the implementation through a tool consisting of 19 items. The full findings are shown in Table 1.

Table 1. Findings from the Assessment of the Quality of NPCI Competition Management Training Implementation in East Java

No.	Indicator	Mean	%	Category
A. TRAINING MATERIALS				
1	Systematic organization of the training materials	4.61	92.2%	Excellent
2	Clarity and ease of understanding of the training materials	4.39	87.8%	Excellent
3	Contribution of the training materials to improving participants' knowledge	4.53	90.7%	Excellent
4	Usefulness of the training materials for competition implementation	4.49	89.8%	Excellent
Average-Training Materials		4.51	90.1%	Excellent
B. TRAINING IMPLEMENTATION				
5	Relevance of the training content to the training objectives	4.48	89.6%	Excellent
6	Appropriateness of the training content with the schedule	4.50	90.0%	Excellent
7	Punctuality of the training implementation	4.48	89.6%	Excellent
8	Facilitators' willingness to assist participants	4.50	90.0%	Excellent
9	Facilitators' responsiveness in assisting participants	4.53	90.7%	Excellent
Average-Training Implementation		4.50	90.0%	Excellent
C. FACILITIES				
10	Quality of audio-visual equipment and teaching aids	4.54	90.9%	Excellent
11	Suitability of audio-visual equipment and teaching aids	4.38	87.6%	Excellent
12	Adequacy of training room facilities (chairs, tables, and teaching aids)	4.45	88.9%	Excellent
13	Condition of the training room (lighting, space, and ventilation)	4.45	88.9%	Excellent
Average-Facilities		4.45	89.1%	Excellent
D. TRAINER COMPETENCE				
14	Mastery of the training materials	4.54	90.9%	Excellent
15	Effectiveness of the trainer's instructional techniques	4.57	91.3%	Excellent
16	Quality of responses to participants' questions	4.46	89.1%	Excellent
17	Clarity and appropriateness of the trainer's language	4.47	89.3%	Excellent
18	Voice intonation and speaking pace of the trainer	4.53	90.7%	Excellent
19	Trainer's body language and facial expressions	4.51	90.2%	Excellent
Average-Trainer Competence		4.51	90.3%	Excellent
OVERALL TRAINING QUALITY		4.49	89.9%	Excellent

Source: PkM evaluation data, June 2024

According to Table 1, every element of implementation quality was rated as excellent (>80%). The aspect concerning the speaker's ability achieved the top score (4.51; 90.3%), closely followed by the material aspect (4.51; 90.1%), the organization (4.50; 90.0%), and the facilities (4.45; 89.1%). In summary, the average implementation quality was 4.49 (89.9%), placing it firmly in the excellent range.

The items that received the highest ratings were the techniques for delivering material (4.57; 91.3%) within the speaker's ability category, and the systematic manner of presenting the content (4.61; 92.2%) within the material category. The elevated scores for these two elements suggest that the material was shared in a clear, structured, and easily understandable way for participants from various educational backgrounds.

This outcome aligns with the viewpoint (Cunningham et al., 2022) that training programs for sports officials that address genuine needs and are led by skilled professionals have a notable effect. (Sunde et al., 2023) added that clear advancements in official competency through organized training support long-term motivation and retention for officials—this is a crucial factor for the sustainability of the East Java NPCI development initiative.

The facilities aspect had the lowest score among the four factors (4.45; 89.1%); however, it still fell within the excellent classification. The audio-visual suitability item received the lowest score (4.38; 87.6%) across all evaluations. This situation is understandable since the event took place in an athletic field, which inherently offers fewer audio-visual options compared to classrooms or auditoriums. Nevertheless, this score remained well above the threshold for the good category (80%) and did not significantly affect the overall success of the event.

The championship management platform created by the PkM team offers essential functionalities like online signup for participants, management of disability classifications, planning of races, recording of results, and final reporting. These functions were intended to help solve the difficulties that NPCI East Java has encountered in handling the championship manually. Table 2 includes an assessment of the website's use by 92 participants.

Table 2. Findings from the Review of the Effectiveness of the NPCI East Java Championship Management Website

No.	Indicator	Mean	%	Category
A. EASE OF USE				
1	Ease of using the website interface	4.16	83.3%	Good
2	Ease of page navigation	4.26	85.2%	Good
3	Ease of searching for participant/athlete information	4.13	82.6%	Good
4	Ease of the competition participant registration process	4.11	82.2%	Good
5	Ease of accessing classification menus and features	4.13	82.6%	Good
6	Overall ease of using the website	4.11	82.2%	Good
	Average-Ease of Use	4.15	83.0%	Good
B. CUSTOMIZATION				
7	Flexibility in managing athletes with disabilities' data	4.09	81.7%	Good
8	Flexibility in configuring competition events and classifications	4.08	81.5%	Good
9	Ability to customize disability classifications	3.93	78.7%	Good
10	Flexibility in scheduling competition events	4.20	83.9%	Good
11	Ability to customize competition result reports	4.18	83.7%	Good
	Average-Customization	4.10	81.9%	Good
C. SYSTEM RESPONSE TIME				
12	Loading speed of the website homepage	4.17	83.5%	Good
13	Speed of downloading participant and competition data	4.13	82.6%	Good
14	Speed of uploading athlete classification data	4.03	80.7%	Good
15	Overall system access speed	4.04	80.9%	Good
	Average-Response Time	4.10	81.9%	Good

D. CONTENT				
16	Completeness of disability classification information	4.12	82.4%	Good
17	Completeness of competition event and classification data	4.09	81.7%	Good
18	Accuracy and clarity of competition results information	4.15	83.0%	Good
19	Overall readability and presentation of website content	4.24	84.8%	Good
Average-Content		4.15	83.0%	Good
OVERALL WEBSITE USABILITY QUALITY		4.12	82.5%	Good

According to Table 2, the overall usability quality of the website achieved an average score of 4.12 (82.5%), placing it in the good category. Both the ease of use and content sections received the same top scores (4.15; 83.0%), followed by customization (4.10; 81.9%) and download time (4.10; 81.9%).

A strong score for the ease of use dimension—especially the navigation ease item (4.26; 85.2%)—shows that the website layout is well-crafted and user-friendly, even for users who do not have a strong background in information technology. This result supports the usability principle put forth by (Surya et al., 2021), which suggests that higher usability scores of a system are linked to the advantages the system offers to its users. Additionally, (Fitria et al., 2024) verified that how easy users perceive a system to be affects their satisfaction with it, with those viewing a system as user-friendly being more satisfied and more inclined to keep using it.

Discussion

The content aspect received commendable ratings, particularly regarding the clarity of information presented (4.24; 84.8%) and the precision of competition outcomes (4.15; 83.0%). This suggests that the details available on the site are pertinent, precise, and straightforward—essential traits for sports competitions, where the correctness of data related to rankings and results is vital. Li (2024) pointed out that a dependable system for managing championship data should have strong capabilities for data recovery and trustworthy outcomes in competition management.

The aspect that received the lowest rating was the customization of disability classification (3.93; 78.7%) within the customization category. Although it remains within a satisfactory range (>60%), this score highlights the need to enhance this feature further. The intricacies of the Paralympic classification framework—which consists of a range of subclassifications according to types of disabilities and sports—pose a significant obstacle in the development of the system. (Fliess Douer et al., 2021) discovered in their Delphi research that the disability sports classification system is continually changing and demands high flexibility from its supporting systems. Thus, enhancing more flexible customization options for classification is a key focus for future development of the website.

In their assessment of a web-based learning management platform, (Sidhawara, 2022) found that usability and satisfaction were rated as "Feasible" with a score exceeding 79%. However, limitations were mostly seen in areas that required extensive customization. This aligns with the evaluation of the East Java NPCI site, where usability and content were highlighted as strengths, while customization emerged as an aspect requiring improvement. (Wen & Wang, 2022) stressed that an optimal championship information system should flexibly address the distinct demands of different sports and athlete classifications—a challenge that needs to be tackled in the future phases of website development.

One notable strength of this PkM activity is its direct connection to the real event of Peparprov II 2024. Throughout the five-day championship, participants not only learned how to use the website in theory but also engaged with it to handle the registration of 416 athletes from

29 different districts/cities, place athletes into suitable competition groups, and log and report competition results in real time. This represents the first instance of a provincial Paralympic championship in East Java being coordinated through a comprehensive digital system.

This hands-on learning method has shown its effectiveness in the area of capacity building in sports. (Cardoso et al., 2020) in their research on the Brazilian Paralympic sports initiative highlighted the value of programs that offer real-life competitive experiences as a more effective way to build capacity compared to training focused solely on theory. (Min & Soo Baek, 2023) also emphasized that in the sphere of disability sports, capacity enhancement that is designed to reflect real-world circumstances leads to a deeper and more applicable understanding.

This Community Service Program (PKM) activity yielded four primary results. Firstly, there was an enhancement in the skills of 92 NPCI coaches and officials from 29 regions and cities throughout East Java in overseeing technology-oriented sports events for individuals with disabilities. Secondly, a web-based system for managing championships was put into operation for Peparprov II in 2024, signifying a new phase of digital management for Paralympic events in East Java. Thirdly, the sharing of program activities through online platforms increased the outreach of the Community Service Program findings to a broader audience. Lastly, a Cooperation Agreement (PKS) was established between the Faculty of Sports and Community Service (FIKK) at Surabaya State University and the East Java NPCI (National Sports and Community Empowerment Association), providing a legal framework for the continued partnership between academic institutions and sports organizations for individuals with disabilities.

Sustainability of the program was a key focus in this initiative. The created championship management site is intended for independent use by East Java NPCI for future events. (Cunningham et al., 2022) point out that sustainable, organized, and need-oriented development programs for sports officials are more successful in enhancing quality and sustaining official competencies in the long run compared to makeshift programs.

4. CONCLUSIONS

The Community Service Program (PKM) aimed at Coaches and Officials of NPCI (National Sports Association) in East Java, which offered training on the use of a web-based system for managing sports competitions for people with disabilities, was carried out successfully. This initiative led to three significant discoveries. Firstly, the training's quality received an average score of 4.49 (89.9%), placing it in the excellent category, with the presenters' skills and material quality being the key strengths. Secondly, the management website for the tournament received an average score of 4.12 (82.5%), which is in the good category, highlighting user-friendliness and content as its main advantages, while the ability to customize disability classifications was identified as an area needing improvement. Thirdly, the integration of PkM with Peparprov II 2024 was shown to be effective as a practical learning experience, allowing 92 coaches and officials from 29 districts/cities to utilize the digital tournament management system in a genuine competition environment for the first time in East Java.

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