

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

National Paralympic Committee Indonesia (NPCI) East Java manages disability sports competitions across East Java Province. However, competition management faces three major challenges: (1) the absence of technology-based competition management systems; (2) limited understanding of disability classification among coaches and officials leading to frequent misplacement of athletes; and (3) infrequent competency enhancement activities for district/city NPCI coaches and officials. This community service (PkM) activity aimed to accompany coaches and officials from NPCI across East Java in using a website-based competition management system, implemented directly during the East Java Provincial Paralympic Championship (Peparprov II) 2024, June 13–17, 2024, at the Oentoeng Poedjadi Athletics Track, FIKK Universitas Negeri Surabaya. A total of 92 coaches and officials from 29 districts/cities participated actively. Evaluation of training quality using a 19-item instrument across four aspects showed an overall average of 4.49 (89.9%), categorized as very good, with presenter competence receiving the highest score (4.51; 90.3%). Website usability evaluation using 19 items across four dimensions showed an overall average of 4.12 (82.5%), categorized as good, with ease of use and content dimensions receiving the highest scores (4.15; 83.0%). Outcomes achieved include improved competencies of coaches and officials, successful implementation of the website system during Peparprov II, mass media publication, and a formal cooperation agreement between FIKK Unesa and NPCI East Java.

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1. INTRODUCTION

The National Paralympic Committee of Indonesia (NPCI) is an organization responsible for collecting, fostering, and coordinating all competitive sports activities for people with disabilities in Indonesia. Since officially receiving approval as a Legal Entity Association through the Decree of the Minister of Law and Human Rights of the Republic of Indonesia Number AHU-0020126.AH.01.07.TAHUN 2015, NPCI stands parallel to the Indonesian National Sports Committee (KONI). At the provincial level, NPCI East Java is tasked with managing the development and organization of disability sports championships that cover four main classifications: Blind Disability, Physical Disability, Intellectual Disability, and Deaf-Mute Disability.

Disability sports have strategic value that goes beyond mere competitive achievement. (Kiuppis, 2018) emphasizes that participation in sports is a fundamental human right, yet many people with disabilities still have limited access to organized sports activities. In Indonesia, data

shows that although 1,985 athletes with disabilities participated in 12 sports at the 16th Papua National Paralympic Games (Peparnas XVI), the number of participants at the provincial level is still limited to 416 athletes, and at the district level, only 156 athletes with disabilities (NPCI East Java, 2023; NPCI Pasuruan Regency, 2023). This participation gap is partly due to suboptimal championship management.

Damanik & Machdum (2019) in their research on NPCI districts showed that empowering groups of people with disabilities through sports is significantly influenced by the competence of coaches and administrators. When coaches and officials lack experience, the effectiveness of group empowerment is significantly reduced. This strengthens the argument that improving the competence of NPCI coaches and officials is not merely a technical issue, but also touches on broader aspects of empowerment and the rights of people with disabilities.

At the technical level of championship management, an information technology-based management system is an urgent need. (Li, 2024) emphasized that an integrated championship data management system can significantly improve the accuracy, efficiency, and quality of competition implementation. Furthermore, Wen & Wang (2022) in their research on large-scale sports championship information systems stated that championship information systems function as the "central nerve" of event implementation, serving the needs of the competition, command, media, and public simultaneously. Without a reliable system, championship implementation is vulnerable to administrative errors that are detrimental to athletes.

The issue of disability classification in Paralympic sports is highly complex. Fliess Douer et al. (2021) in their Delphi study on wheelchair basketball classification identified various challenges and opportunities within the classification system, including the need for a deeper understanding by officials and coaches. Barrera-Garcimartín et al. (2025) also emphasized that eligibility and classification systems in disability sports are essential for the development of Paralympic sports and have a direct impact on athletes' career success.

From the perspective of sports official development, Cunningham et al. (2022) found in a 30-year systematic review that the training and development of sports officials significantly impact the quality of competition management. Sunde et al. (2023) added that improving officials' competence and confidence through structured training programs directly contributes to the quality of decision-making and long-term official retention. However, structured competency improvement programs for NPCI coaches and officials at the district/city level are still rarely implemented.

Based on the situation analysis and literature review above, this Community Service (PkM) activity is designed to address three main problems of the East Java NPCI: (1) the absence of a technology-based championship management system; (2) limited understanding of coaches and officials in disability classification; and (3) minimal competency improvement activities. The approach used is direct assistance in the use of the championship management website in the context of a real championship — Peparprov II in 2024 — so that learning is authentic and has a direct impact. The purpose of this article is to report the implementation process, evaluation results, and outcomes achieved from this PkM activity.

2. IMPLEMENTATION METHOD

Activity Plan

This Community Service Program (PKM) activity is designed using a participatory mentoring approach that integrates theoretical presentations, demonstrations, and hands-on practice within a real-life event context. Unlike conventional training, which is separated from practice, this approach allows participants to experience authentic learning, where knowledge and skills are built through active participation in managing a real championship. (Cardoso et al., 2020) state that programs that integrate real-life competition with capacity building are proven to be more effective in improving participants' competencies in the sports field.

The implementation of PkM includes eight stages: (A) needs planning — identifying partner problems and training needs; (B) determining materials — preparing training content with

the East Java NPCI management; (C) selecting instructors — determining speakers based on expertise; (D) recruiting participants — coordinating with the district/city NPCI; (E) presenting materials — delivering competition management theory and website usage; (F) case studies and simulations — discussing real cases and simulating system usage; (G) exchanging experiences — panel discussions between participants and resource persons; and (H) direct practice and evaluation — actual use of the website during Peparprov II and measuring quality.

Participants and Location

The activity was held on June 13–17, 2024, at the Oentoeng Poedjadi Athletic Field, Faculty of Sport and Health Sciences (FIKK), Surabaya State University. The activity was integrated with the 2024 Provincial Paralympic Championship (Peparprov) II. A total of 92 NPCI coaches and officials from 29 districts/cities throughout East Java participated, consisting of 77 men (83.7%) and 15 women (16.3%). The activity was officially opened by the Dean of FIKK Unesa, Dr. Dwi Cahyo Kartiko, S.Pd., M.Kes., who also acted as the Head of the PkM Team.

Supporting Materials

The mentoring material was prepared by a team of lecturers from FIKK Unesa together with practitioners from NPCI East Java, covering three main components. First, the basic concept of disability classification in Paralympic sports according to NPCI and International Paralympic Committee (IPC) standards, including the classification of Blind, Physically Disabled (including amputees, les autres, paraplegia, and cerebral palsy), Intellectual, and Deaf-Mute. Second, the standard procedures for managing disability sports competitions include participant registration, classification verification, scheduling of race numbers, and reporting of results. Third, the use of the NPCI East Java championship management website developed by the PkM team, including features for participant registration, classification management, scheduling, and real-time results reporting.

Evaluation Instruments

The evaluation was conducted using two instruments. First, the training implementation quality instrument with 19 items covering four aspects: (A) Material (4 items); (B) Implementation (5 items); (C) Facilities (4 items); and (D) Presenter Ability (6 items). Second, the website usability quality instrument with 19 items based on four dimensions developed from the usability concept: (A) Ease of Use (6 items); (B) Customization (5 items); (C) Download Delay (4 items); and (D) Content (4 items). These four dimensions are in line with the information system user satisfaction indicators proposed by (Fitria et al., 2024) and (Sidhawara, 2022), which emphasize that information system usability includes ease of use, usefulness, ease of learning, and user satisfaction. Both instruments use a Likert scale of 1–5. Categorization: 0–20% (very poor), 20–40% (poor), 40–60% (sufficient), 60–80% (good), and 80–100% (very good). Data were analyzed descriptively.

3. RESULTS AND DISCUSSION

Participant Profile

A total of 92 trainers and officials attended, representing all regencies/cities within the NPCI East Java network. The presence of participants from 29 regencies/cities reflects the comprehensive and representative reach of PkM. Participants' average experience as NPCI trainers or officials ranged from 1 to 25 years, with an average of around 5 years. This diverse background provided a rich dynamic in the experience exchange sessions and panel discussions.

Quality of Training Implementation

The quality of implementation was evaluated by all 92 participants using a 19-item instrument. Complete results are presented in Table 1.

Table 1. Results of the Evaluation of the Quality of the Implementation of NPCI Competition Management Training throughout East Java

No	Indicator	Rerata	%	Category
A. MATERI				
1	Systematic presentation of material	4,61	92,2%	Very well
2	Clarity/ease of understanding of the material	4,39	87,8%	Very well
3	Material contribution to increasing knowledge	4,53	90,7%	Very well
4	The benefits of the material can be used in competitions	4,49	89,8%	Very well
	Average Material Aspect	4,51	90,1%	Very well
B. IMPLEMENTATION				
5	Suitability of content to training objectives	4,48	89,6%	Very well
6	Conformity of material content with the schedule	4,50	90,0%	Very well
7	Punctuality in implementing training	4,48	89,6%	Very well
8	Facilitator's willingness to help participants	4,50	90,0%	Very well
9	The facilitator's readiness to help participants	4,53	90,7%	Very well
	Average Aspects of Implementation	4,50	90,0%	Very well
C. FACILITIES				
10	Audio-visual quality or props	4,54	90,9%	Very well
11	Suitability of audio-visual or props	4,38	87,6%	Very well
12	Room facilities (chairs, tables, and teaching aids)	4,45	88,9%	Very well
13	Room conditions (lighting, area, and ventilation)	4,45	88,9%	Very well
	Average Aspect of Facilities	4,45	89,1%	Very well
D. PRESENTIST'S ABILITY				
14	Mastery of the material	4,54	90,9%	Very well
15	Techniques used in delivering material	4,57	91,3%	Very well
16	Quality of answers and how to answer questions	4,46	89,1%	Very well
17	Language and sentences used by the speaker	4,47	89,3%	Very well
18	Intonation and speed of speech by the speaker	4,53	90,7%	Very well
19	Gestures (body movements) and facial expressions of the presenter	4,51	90,2%	Very well
	Average Aspect of Speaker Ability	4,51	90,3%	Very well
	TOTAL QUALITY OF IMPLEMENTATION	4,49	89,9%	Very well

Source: PkM evaluation data, June 2024

Based on Table 1, all aspects of implementation quality fall into the excellent category (>80%). The aspect of presenter ability received the highest score (4.51; 90.3%), followed by the material aspect (4.51; 90.1%), implementation (4.50; 90.0%), and facilities (4.45; 89.1%). Overall, the total implementation quality reached an average of 4.49 (89.9%) in the excellent category.

The items with the highest scores were material delivery techniques (4.57; 91.3%) in the speaker's ability aspect, and material presentation systematics (4.61; 92.2%) in the material aspect. High scores on both of these items indicate that the material was delivered in a structured, clear, and easily understood manner by participants with diverse educational backgrounds.

These findings are consistent with the argument (Cunningham et al., 2022) that sports official training programs designed based on real needs and delivered by competent experts produce significant impacts. (Sunde et al., 2023) added that tangible and relevant improvements in official competency through structured training contribute to long-term official motivation and retention—an important implication for the sustainability of the NPCI East Java development program.

The facilities aspect received the lowest score of the four aspects (4.45; 89.1%), although it remained in the excellent category. The audio-visual suitability item scored the lowest (4.38; 87.6%) across all instruments. This is understandable considering the activity took place on an athletic field, which naturally has limited audio-visual facilities compared to classrooms or auditoriums. However, this score was still well above the good category threshold (80%), so it did not significantly impact the overall effectiveness of the activity.

Quality of Use of the Championship Management Website

The championship management website developed by the PkM team includes key features such as online participant registration, disability classification management, race scheduling, results recording, and final reporting. These features were designed to address the challenges NPCI East Java has faced in manually managing the championship. An evaluation of website usage by 92 participants is presented in Table 2.

Table 2. Results of the Evaluation of the Quality of Use of the NPCI East Java Championship Management Website

No	Indicator	Rerata	%	Category
A. EASE OF USE				
1	Ease of use of 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 participant registration process	4,11	82,2%	Good
5	Easy access to menus and classification features	4,13	82,6%	Good
6	Overall ease of use of the website	4,11	82,2%	Good
	Rata-rata Ease of Use	4,15	83,0%	Good
B. CUSTOMIZATION				
7	Flexibility of data management for disabled athletes	4,09	81,7%	Good
8	Flexibility of setting race numbers and classes	4,08	81,5%	Good
9	Disability classification customization capabilities	3,93	78,7%	Good
10	Flexibility of match scheduling arrangements	4,20	83,9%	Good
11	Customizability of competition result reports	4,18	83,7%	Good
	Rata-rata Customization	4,10	81,9%	Good
C. DOWNLOAD DELAY (Access Speed)				
12	Website main page loading speed	4,17	83,5%	Good
13	Data download speed and participant list	4,13	82,6%	Good
14	Athlete classification data upload speed	4,03	80,7%	Good
15	Overall system access speed	4,04	80,9%	Good
	Rata-rata Download Delay	4,10	81,9%	Good
D. CONTENT (Accounts)				
16	Completeness of disability classification information	4,12	82,4%	Good

17	Completeness of data on competition numbers and classes	4,09	81,7%	Good
18	Accuracy and clarity of competition results information	4,15	83,0%	Good
19	Overall readability and appearance of the content	4,24	84,8%	Good
	Rate-rate Content	4,15	83,0%	Good
	TOTAL QUALITY OF WEBSITE USE	4,12	82,5%	Good

Source: Website usage evaluation data, June 2024

Based on Table 2, the overall quality of website use reached an average of 4.12 (82.5%) in the good category. The ease of use and content dimensions received the same highest scores (4.15; 83.0%), followed by customization (4.10; 81.9%) and download delay (4.10; 81.9%).

A high score on the ease-of-use dimension—particularly the ease of page navigation item (4.26; 85.2%)—indicates that the website interface is well-designed and easy to use, even for participants without a strong information technology background. This finding aligns with the usability principle proposed by Surya et al. (2021, which states that a high system usability rating is positively correlated with the system's benefits for its users. Fitria et al., 2024) also confirmed that perceived ease of use significantly influences information system user satisfaction, where users who perceive a system as easy to use tend to be more satisfied and more motivated to use it continuously.

The content dimension scored highly, particularly for readability of content display (4.24; 84.8%) and accuracy of competition results information (4.15; 83.0%). This indicates that the information presented on the website is relevant, accurate, and easy to read—critical qualities in the context of sports championships where the accuracy of classification data and competition results is crucial. Li (2024) emphasized that a reliable championship data management system must have robust data recovery performance and reliable competition management results.

The item with the lowest score was disability classification customization (3.93; 78.7%) in the customization dimension. Although still in the good category (>60%), this score indicates the need for further development of this feature. The complexity of the Paralympic classification system—which includes various subclassifications based on disability type and sport—presents a unique challenge in system development. (Fliess Douer et al., 2021) found in their Delphi study that the disability sports classification system continues to evolve and requires high adaptive flexibility from its supporting system. Therefore, developing a more adaptive classification customization feature is a priority for future website development.

Sidhawara (2022), in an evaluation of a web-based learning management system, found that ease of use and satisfaction aspects were categorized as "Feasible" with a percentage above 79%, while weaknesses were generally found in aspects requiring high customization. This finding parallels the results of the evaluation of the NPCI East Java website, where ease of use and content were strengths, while customization was an aspect that needed development. Wen & Wang (2022) emphasized that an ideal championship information system must be able to adaptably accommodate the specific needs of various sports and athlete classifications—a challenge that must be addressed in the next iteration of website development.

Integration of PkM with Peparprov II: An Authentic Approach

One of the methodological advantages of this PkM activity is its integration with the actual event of Peparprov II 2024. During the five-day championship, participants not only learned to use the website theoretically, but also directly operated it to manage the registration of 416 athletes from 29 districts/cities, classify athletes into appropriate competition categories, and record and report competition results in real time. This is the first time a

provincial Paralympic championship in East Java has been managed using an integrated digital system.

This authentic learning approach has proven effective in the context of capacity development in sports. Cardoso et al. (2020), in their study of the Brazilian Paralympic sports initiative, emphasized the importance of programs that provide real-world competitive experiences as a more effective means of capacity development than purely theoretical training. Min & Soo Baek (2023) also emphasized that in the context of disability sports, capacity development tailored to real-world conditions results in deeper and more applicable understanding.

Output and Impact of Activities

This Community Service Program (PKM) activity produced four main outcomes. First, improving the competency of 92 NPCI coaches and officials from 29 regencies/cities across East Java in managing technology-based disability sports championships. Second, the implementation of a website-based championship management system at Peparprov II in 2024—marking a new era of digital-based Paralympic championship management in East Java. Third, the publication of activities in online media expands the dissemination of Community Service Program results to the wider community. Fourth, the signing of a Cooperation Agreement (PKS) between the Faculty of Arts and Sciences (FIKK) of Surabaya State University and NPCI East Java, as a legal basis for the continued collaboration between universities and disability sports organizations.

Program sustainability was emphasized in this activity. The developed championship management website was designed to be used independently by NPCI East Java for all subsequent events. (Cunningham et al., 2022) emphasized that sustainable, structured, and needs-based sports official development programs are more effective in improving the quality and maintaining official competence in the long term than ad hoc programs.

4. CONCLUSION

The Community Service Program (PKM) mentoring program for the use of a website-based disability sports competition management system for NPCI coaches and officials throughout East Java was successfully implemented. Three key findings emerged from this program. First, the quality of the training achieved an average rating of 4.49 (89.9%), in the excellent category, with the ability of the presenters and the quality of the materials as the strongest aspects. Second, the quality of the tournament management website achieved an average rating of 4.12 (82.5%), in the good category, with ease of use and content as the system's main strengths, while customization of disability classifications was an aspect that needed further development. Third, the integration of the PkM program with Peparprov II 2024 proved effective as an authentic learning approach, enabling 92 coaches and officials from 29 districts/cities to operate the digital tournament management system in a real competition context for the first time in East Java.

5. SUGGESTION

Based on the findings and reflections on the implementation, four recommendations can be put forward. First, the East Java NPCI needs to continue using the championship management website for all subsequent events, with regular feature updates based on user feedback. Second, the disability classification customization feature needs to be further developed to accommodate the ever-growing diversity of Paralympic classifications. Third, a similar mentoring program needs to be conducted periodically—at least once a year—given the rotation of coaches and officials at the district/city level. Fourth, FIKK Unesa and the East Java NPCI need to expand the scope of cooperation to include holistic development of athletes with disabilities, including the development of a talent scouting program based on digitized championship data.

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