

Implementation of the sport education model to strengthen physical education students' soft skills in higher education

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Abstract

Strengthening soft skills is an essential objective of physical education in higher education, as prospective physical education teachers are required to demonstrate leadership, collaboration, and professional responsibility. The Sport Education Model (SEM) is a pedagogical approach that provides authentic learning experiences by engaging students as participants, coaches, referees, and team managers. This study aimed to analyze the implementation of SEM and its association with the development of soft skills among students in the Physical Education, Health, and Recreation (PJKR) program, given the limited studies examining SEM in Indonesian higher education. A qualitative descriptive method was employed with 60 students from STKIP Taman Siswa Bima as participants. Data were obtained through observations, interviews, and student reflection journals collected over one semester. The patterns of change in students' soft skills during the observation period were described by converting observation and reflection indicators into percentage distributions. The results showed that leadership (68%), teamwork (50%), communication (54%), responsibility (48%), and problem-solving (52%) each had a percentage pattern. These percentages represent the distribution of observed behaviors across the five soft-skill dimensions recorded during the learning period and indicate observable developments in leadership, teamwork, communication, responsibility, and problem-solving within the higher education context examined. The findings reveal patterns of collaborative interaction, role engagement, and interpersonal communication during the learning process, reflecting the presence of these five soft-skill dimensions. SEM is a contextually appropriate instructional approach for supporting these soft skills dimensions among physical education students in comparable higher education settings, based on the observed patterns.

Keywords: Sport education model, soft skills, higher education, leadership skills.

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INTRODUCTION

Physical education in higher education plays a crucial role in shaping graduates who are not only professionally skilled but also equipped with strong social abilities (Giménez-Meseguer et al., 2022). Students are expected to master motor skills, as well as soft skills such as leadership, cooperation, communication, responsibility, and problem-solving (Rasyid et al., 2022). These competencies are particularly essential because physical education graduates are prepared to become prospective teachers, coaches, and sport facilitators whose professional roles require leading groups, delivering instructional communication effectively, managing team dynamics, and maintaining professional responsibility in learning and training contexts (Killian et al., 2021). Therefore, leadership, communication, teamwork, and responsibility are not peripheral attributes but core competencies within higher sports education, as they directly support graduates' readiness to manage learning processes, guide participants, and respond to social and institutional demands. Experience-based learning approaches, such as team-based sport activities, are considered relevant for fostering these competencies through sustained interaction, shared responsibility, and role-based participation. Similar findings have also been reported in Indonesian studies, which show that integrating soft skills into physical education supports the development of communication, collaboration, and responsibility among students (Salvador-Garcia et al., 2023).

Within this framework, pedagogical approaches that emphasize structured interaction and authentic participation are considered more capable of fostering social development than conventional instructional models. The Sport Education Model (SEM), originally developed by Siedentop, offers a season-based structure in which learning is organized into extended instructional units resembling a sport season. This structure enables sustained collaboration among students, encouraging shared goal setting and collective responsibility. The use of permanent team membership creates stable social groups that require ongoing coordination

and accountability. At the same time, role rotation, such as acting as players, coaches, referees, or managers, generates situational demands for leadership enactment, strategic communication, decision-making, and conflict resolution. Through these interconnected components, SEM establishes repeated and socially embedded opportunities for the enactment of soft skills during authentic game activities. In Indonesia, the implementation of the Sport Education Model has been associated with increased learning motivation, active participation, and classroom engagement in physical education (Ramadhan & Effendy, 2021). Previous studies have also reported associations between SEM and social interaction, collaboration, and responsibility across various physical education contexts (Arikan, 2020; Cho, 2020; Susanta et al., 2025).

However, most previous studies examining SEM and students' social outcomes have been conducted at the school level or focused on general outcomes such as motivation and participation. Empirical studies that specifically analyze how SEM implementation relates to the development of distinct soft skill dimensions, leadership, teamwork, communication, responsibility, and problem solving, among higher education physical education students, remain limited, particularly within the Indonesian context. Moreover, these studies predominantly emphasize motivational outcomes or general indicators of social interaction, without systematically mapping specific soft skill dimensions. The implementation process of SEM has also rarely been analyzed in depth to explain how its pedagogical components operate to foster the emergence of specific soft skills. As a result, empirical research that systematically analyzes SEM implementation and explicitly examines these five dimensions within an integrated analytical framework in higher education settings remains scarce.

In addition to supporting social development, SEM strengthens students' motivation and engagement through a season-based structure with stable team membership and systematic role rotation. The extended season format requires students to set collective goals and sustain responsibility across sessions, while stable teams create interdependence

that demands coordination, communication, and conflict resolution. Role rotation, such as serving as a coach, referee, or manager, requires students to lead discussions, make decisions, and evaluate performance, thereby fostering leadership and problem-solving skills. These structured mechanisms create learning conditions in which accountability to team goals and role expectations supports the enactment of soft skill behaviors. Within Indonesian higher education, previous SEM studies have generally focused on motivation, participation, and overall engagement. At the same time, discussions of soft skills have often addressed individual aspects separately without an integrated analytical framework. Therefore, it is necessary to examine how SEM implementation relates to the development of multiple soft skill dimensions within a single analytical context.

Based on this background, this study aims to analyze the implementation of the Sport Education Model (SEM) in higher education and examine its relation to the development of five soft skill dimensions leadership, teamwork, communication, responsibility, and problem-solving among Physical Education students. This study addresses the identified gap by providing context-specific evidence from Indonesian higher education and by analyzing SEM learning roles, team structures, and instructional stages as patterns associated with the five predefined soft skill dimensions. Methodologically, this study employs a descriptive qualitative approach, supported by triangulated data from observations, interviews, and reflective journals, to analyze interaction patterns, behavioral indicators, and role enactment processes. The findings are expected to provide practical insights for lecturers in designing SEM-oriented learning activities that intentionally structure roles, team dynamics, and instructional stages to support the development of essential soft skills in future physical education teachers.

METHOD

A descriptive qualitative research design was employed to gain an in-depth understanding of the implementation of the Sport Education Model (SEM) and its influence on students' soft skills as reflected in observable

behavioral changes during the learning process. This design was chosen because it allows researchers to examine students' learning behaviors, interaction patterns, and role performance over time, particularly through comparisons between the early and final phases of the semester and the identification of recurring developmental themes emerging from observations, interviews, and reflective journals. Through this approach, the influence of SEM was analyzed not as a causal measurement, but as a qualitative pattern of change in students' leadership, teamwork, communication, responsibility, and problem-solving behaviors throughout the implementation period.

The study was conducted in the Physical Education Study Program at STKIP Taman Siswa Bima over one academic semester during the 2024/2025 academic year. The population consisted of all students enrolled in the Physical Education Study Program. A total of 60 students participating in the SEM learning unit were selected as the research sample. Purposive sampling was applied. Participants who were actively involved throughout the SEM instructional cycle were selected to ensure observation of the complete implementation process.

Data were collected through observation, in-depth interviews, and students' reflective journals during a one-semester Sport Education Model (SEM) learning cycle (16 weeks), which consisted of four stages: team formation and role assignment (Weeks 1–2), skill and strategy practice (Weeks 3–8), formal competition (Weeks 9–14), and reflection and evaluation (Weeks 15–16). During team formation, students were organized into stable teams and assigned roles such as players, coaches, referees, and managers, contributing to leadership (role coordination), teamwork (task negotiation), and responsibility (role acceptance). The practice stage required collaborative planning and strategy adjustment, supporting teamwork, communication, and problem-solving. The competition stage involved decision-making in game situations and rule enforcement, strengthening leadership in action, responsibility, and situational problem-solving. The reflection stage facilitated peer feedback and performance

evaluation, contributing to communication skills and collective problem-solving. Observations were conducted in each session to document behavioral indicators of leadership, teamwork, communication, responsibility, and problem-solving. In contrast, interviews were conducted at the end of the semester, and reflective journals were collected weekly to capture students' experiences across SEM stages.

The instruments used in this study consisted of an observation guide, an interview protocol, and a reflective journal rubric, each designed to capture complementary aspects of students' soft-skill development during SEM implementation. The observation guide was used in every SEM session to document behavioral indicators of leadership, teamwork, communication, responsibility, and problem-solving during practice and competition activities. At the same time, the interview protocol was administered at the end of the learning cycle to explore students' experiences, role enactment, and interaction patterns across SEM stages. Students completed the reflective journal rubric weekly to record personal experiences, challenges, role performance, and perceived soft-skill development. All indicators were developed based on five predefined soft-skill dimensions and operationalized into observable behaviors and reflective prompts aligned with SEM characteristics. Prior to implementation, the instruments were reviewed by three experts in physical education pedagogy to evaluate the clarity of indicators, alignment with the targeted soft-skill dimensions, and contextual suitability. To maintain consistency in observations, calibration discussions were held among observers before data collection to standardize the interpretation of behavioral indicators, and observation records were periodically cross-checked to ensure agreement in documenting students' behaviors.

Table 1. Instrument Grid for Soft Skill Observation and Reflection

Soft Skill Dimension	Indicators
Leadership	Decision-making, directing team activities, and initiative in strategic planning
Teamwork	Cooperation, role fulfillment, conflict resolution
Communication	Clarity of message, feedback exchange, and interpersonal interaction
Responsibility	Task completion, accountability, commitment to team goals
Problem Solving	Strategy adjustment, situational interpretation, critical decision-making

Data Analysis

Data were analyzed using the interactive qualitative analysis model proposed by Miles and Huberman, comprising data reduction, data display, and conclusion drawing (Qomaruddin & Sa'diyah, 2024). During the data reduction stage, raw data from observations, interviews, and reflective journals were initially coded by identifying behavioral expressions and statements related to soft skills, such as leading team discussions, coordinating tasks, communicating strategies, fulfilling assigned roles, and responding to game-related problems. For example, statements such as "organizing team discussion before the match" and observed behaviors such as "assigning tasks to members" were coded as initiating coordination, which were then grouped under the category role-based leadership and subsequently interpreted as the broader theme of leadership development during structured team interaction. In the data display stage, the coded data were grouped into categories corresponding to the five soft-skill dimensions: leadership, teamwork, communication, responsibility, and problem solving, and organized in matrices and descriptive summaries to facilitate comparison across SEM stages. Finally, during the conclusion drawing and verification stage, recurring patterns and relationships among categories were interpreted to identify thematic patterns of soft-skill development throughout the SEM implementation. Triangulation was conducted by cross-checking observation records, interview responses, and reflective journal entries to confirm the consistency of the findings. Verification was further carried out through iterative data review and peer discussion among the research team to examine and reconcile discrepant data.

RESULT

The results present the differences in students' soft-skill scores between the initial and final observation periods. A summary of the quantitative data is presented in Table 3.

Table 2. Differences in Students' Soft Skills Between Initial and Final Observation

Soft Skills	Initial (%)	Final (%)	Difference (percentage points)
Leadership	40	68	28
Teamwork	32	50	18
Communication	38	54	16
Responsibility	30	48	18
Problem Solving	35	52	17

Table 3 shows the comparison of soft-skill scores between the initial and final observations. Leadership increased from 40% to 68%, a 28-percentage-point increase. Teamwork increased from 32% to 50%, an 18-point increase. Communication increased from 38% to 54%, a 16 percentage-point increase. Responsibility changed from 30% to 48%, an 18-percentage-point increase. Problem-solving increased from 35% to 52%, a 17-point increase. These values show variation in the magnitude of percentage differences across the five measured soft-skill dimensions.

The distribution of percentage differences is visualized to provide a clearer comparison among the five soft-skill dimensions (see Figure 1). Figure 1 shows the percentage differences for leadership (28 percentage points), teamwork (18 percentage points), responsibility (18 percentage points), problem solving (17 percentage points), and communication (16 percentage points).

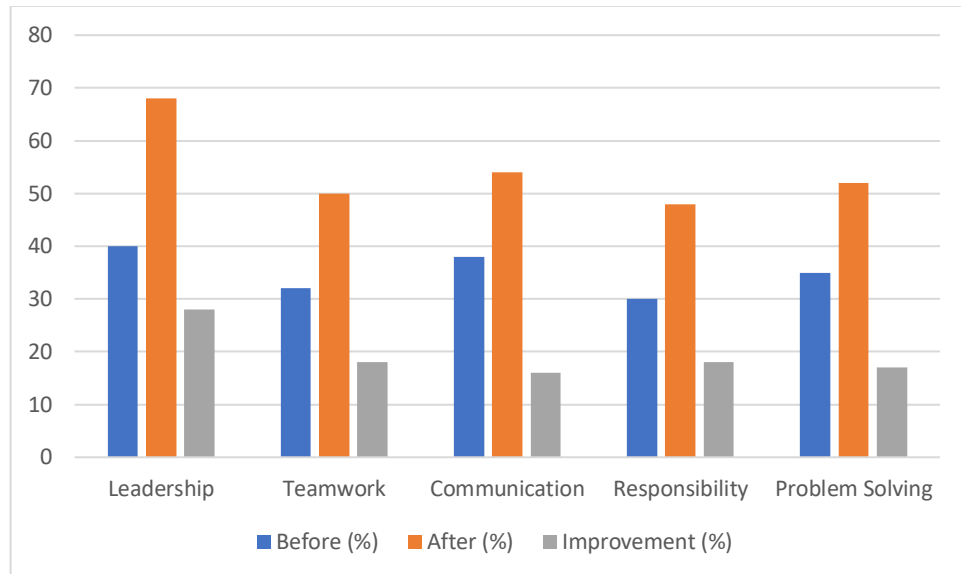


Figure 1. Comparison of Soft Skills Before and After SEM Implementation

In addition to the quantitative results, qualitative data analysis produced five thematic categories describing the changes experienced by students during the SEM implementation. These categories include leadership, teamwork, communication, responsibility, and problem-solving.

1) Leadership

Leadership-related behaviors were documented through observable interaction patterns during team activities. Students were observed initiating team discussions before matches, organizing team coordination, assigning tasks to team members, directing warm-up and practice activities, and reminding teammates of assigned responsibilities. Decision-making behaviors were evident when students acting as team leaders or coaches proposed tactical options, selected player positions, determined game strategies, and confirmed team agreement prior to execution. Coordination among team members was reflected in verbal instructions during play, non-verbal signaling, and monitoring of teammates' role execution, as recorded in observation notes and reflective journals.

2) Teamwork

During SEM implementation, students were observed dividing tasks within their teams, including assigning responsibilities for training preparation, equipment management, and match organization. Team

members provided assistance to peers during drills, coordinated roles based on team agreements, and maintained participation throughout scheduled team activities. Patterns of teamwork were reflected in task distribution, role coordination, and forms of support among team members during practice and competition sessions.

3) Communication

During SEM activities, students engaged in verbal exchanges during team meetings, practice sessions, and formal competitions. Observation data indicate that students expressed ideas about game strategies, role assignments, and performance adjustments. At the same time, peer-to-peer communication involved delivering instructions, asking questions, clarifying rules, and exchanging feedback during and after gameplay. Reflective journals recorded descriptions of students communicating opinions, responding to teammates' suggestions, and participating in group discussions across different learning stages. Communication patterns were also reflected in the frequency of idea-sharing, questioning, response exchanges, and feedback delivery during practice sessions and in-game coordination.

4) Responsibility

Students carried out assigned roles such as coach, referee, or manager during team activities. Responsibility-related behaviors were identified through consistent attendance in SEM sessions, completion of assigned tasks within agreed timeframes, adherence to designated team roles, and sustained involvement in team preparation and competition activities. Observational records noted patterns of task completion, role execution, and compliance with team agreements during practice and match situations.

5) Problem Solving

Problem-solving behaviors were observed when students adjusted team strategies in response to changing match situations, interpreted game conditions before selecting actions, and discussed alternative approaches

during time-outs or after unsuccessful plays. Students negotiated solutions when encountering role coordination issues, time management challenges, or disagreements related to decision making. These behaviors were documented through observation records, reflective journals, and team deliberation sessions during gameplay activities.

DISCUSSION

The findings of this study indicate that implementing the Sport Education Model (SEM) is associated with observable patterns across five soft-skill dimensions. Quantitative data show that leadership demonstrated a 28% increase, followed by teamwork and responsibility (18%), problem solving (17%), and communication (16%). These numerical patterns are supported by qualitative themes derived from observations, interviews, and reflective journals, which document role execution, interaction patterns, communication exchanges, and decision-making processes during learning activities. The convergence of these data indicates that SEM learning experiences characterized by sustained team membership, role rotation, and structured sport-based activities are associated with repeated interaction and task engagement across the instructional period.

The soft-skill changes identified in this study are closely related to the core elements of SEM, namely social interaction, role rotation, and team-based instructional structure. Leadership, which increased by 28%, was reflected in behaviors such as initiating team discussions, assigning tactical roles, coordinating strategy adjustments, and confirming collective decisions before implementation. Social interaction within persistent teams corresponded with an 18% increase in teamwork and a 16% increase in communication, as indicated by patterns of task division, peer assistance, verbal exchanges, and feedback during practice sessions. Role rotation was associated with an 18% increase in responsibility, reflected in consistent attendance, adherence to assigned roles, and completion of team tasks. In comparison, the team-based structure was associated with a 17% increase in problem-solving, as observed in strategy adjustments and team deliberations during gameplay. These data-based patterns correspond with

previous findings that structured role engagement and collaborative learning environments are associated with interpersonal and cognitive skill development in physical education contexts (Priskila & Arief, 2024; Cho, 2020; Fantiro et al., 2025).

Improvements in leadership and responsibility observed in this study converge with key aspects of transformational leadership, particularly idealized influence and individual responsibility within team settings. The behavioral indicators documented in this study, including coordinating team strategies, assigning tactical roles, confirming decisions before implementation, and guiding peer discussions, represent the dimension of idealized influence as students functioned as reference figures directing collective action. At the same time, consistent task completion, adherence to designated roles, punctual attendance, and sustained participation reflect the dimension of individual responsibility, indicating accountability within team structures. These findings demonstrate that transformational leadership dimensions were enacted through observable coordination practices and role consistency within structured team-based learning situations in physical education (Wang et al., 2025).

Both quantitative and qualitative findings support cooperation and communication patterns identified in this study. Teamwork (18%) and communication (16%) correspond with documented patterns of task coordination, peer feedback exchange, and role negotiation within stable teams across the instructional period. Students worked with the same team members throughout the learning activities, allowing for repeated interaction, coordination, and feedback. Reflection journals indicate that students negotiated role distribution, discussed tactical adjustments after unsuccessful plays, and addressed disagreements through guided discussion. Interview data further reveal that students resolved differences by reassigning roles, clarifying responsibilities, and agreeing on collective strategies. These observed patterns correspond with previous studies indicating that long-term team structures facilitate interpersonal adaptation and collaborative communication, while reflection processes support the

articulation of ideas and collective problem solving (Saizew et al., 2021; Aprelyani, 2025; Serikbaykyzy et al., 2022; Xue et al., 2021).

Problem-solving behaviors also align with the quantitative pattern of 17%, supported by qualitative evidence documenting strategy adjustments, negotiation processes, and collective decision-making during gameplay. Students were observed modifying team formations, discussing alternative approaches during time-outs, interpreting game situations before selecting actions, and negotiating solutions when encountering role conflicts or rule disagreements. These behaviors were consistently documented in observation records and reflective journals, indicating recurring patterns of strategic adjustment and collaborative problem resolution. Similar patterns have been reported in dynamic sport-based learning environments, where changing game situations require continuous decision making and adaptive strategies (Serikbaykyzy et al., 2022; Xue et al., 2021).

The overall findings of this study show that the percentage patterns identified in leadership (28%), teamwork (18%), responsibility (18%), problem solving (17%), and communication (16%) correspond with qualitative themes describing role coordination, task distribution, peer feedback, and decision-making processes during learning activities. These patterns indicate that stable team membership and systematic role participation were consistently associated with documented interaction frequency and role-based engagement throughout the instructional period. Previous research has similarly reported that SEM is associated with social skill development and active engagement in physical education contexts (Tendinha et al., 2021; Farias et al., 2017; Agustan et al., 2020). Within the context of this study, the SEM served as an instructional framework for measurable soft-skill patterns relevant to higher education learning environments.

CONCLUSION

This study shows that, within the higher education physical education context examined, the Sport Education Model (SEM) was associated with observable patterns in students' soft skills, particularly leadership,

teamwork, communication, responsibility, and problem solving, emerging through structured learning experiences involving role rotation, stable team membership, and authentic game-based activities. The findings indicate percentage patterns in leadership (28%), teamwork (18%), responsibility (18%), problem solving (17%), and communication (16%), supported by qualitative themes describing role coordination, task distribution, peer feedback, and decision-making processes during the instructional period. Theoretically, this study links transformational leadership and experiential learning perspectives with observable behavioral indicators. Methodologically, it provides an integrated, percentage-based, and thematic qualitative analysis, and contextually, it offers empirical evidence from a single higher education institution implementing a single SEM learning cycle. Within this context, SEM is a suitable instructional model for supporting these soft-skill patterns. However, as the study is limited to a single institutional setting and uses a qualitative design, future research in comparable contexts with broader samples, diverse settings, or mixed-methods approaches is recommended to examine the consistency of these patterns.

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