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Teaching Strategies in Gymnastics as Predictors of Students' Holistic Development

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ABSTRACT

The aim of this research was to examine whether teaching strategies in gymnastics predict students' holistic development across the physical, cognitive, social, and emotional domains in a Philippine state university. The study used a descriptive correlational design involving 22 Human Kinetics instructors and 78 third year Physical Education major students at Batangas State University Pablo Borbon Campus. A validated researcher made questionnaire was administered to assess perceptions of gymnastics instruction and the strategies used in teaching. Descriptive findings revealed that gymnastics instruction was strongly perceived to contribute to students' multidimensional development, with particularly notable contributions to physical and social domains. Teachers reported using a balanced combination of student centered and teacher directed strategies, with self-directed instruction, discussion, and demonstration methods emerging as the most used approaches. Correlational analysis showed that teaching strategies were significantly associated with students' physical and social development, while no significant relationships were found in the cognitive and emotional domains or in teachers' responses. These findings indicate that while instructional strategies in gymnastics effectively predict observable physical and interpersonal outcomes, cognitive and emotional development may be influenced by additional factors beyond teaching methods alone. The reliance on self-reported data and the correlational design are acknowledged as limitations. In conclusion, the study highlights the importance of strategically designed

gymnastics instruction in promoting holistic development in tertiary Physical Education programs.

Keywords: teaching strategies; gymnastic; physical development; cognitive development; social development; emotional development

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Introduction

Holistic development remains a central objective of higher education, particularly in the Philippine context where state universities and colleges are mandated to promote total human formation through both curricular and co-curricular programs. This mandate recognizes that education must move beyond intellectual preparation and intentionally cultivate students who are physically capable, cognitively engaged, emotionally resilient, and socially responsible. In alignment with this broader educational goal, Physical Education (PE) serves as a strategic platform for integrating these domains through structured movement experiences that promote physical fitness, enhance executive functioning and academic performance, strengthen emotional regulation and self-esteem, and develop essential social skills such as cooperation, leadership, and conflict resolution (Montes Mata et al., 2025). Contemporary approaches further emphasize the value of culturally responsive pedagogy and the integration of positive education principles in PE, which foster student well-being by nurturing positive emotions, meaningful engagement, and supportive relationships within inclusive learning environments (Campoamor-Olegario et al., 2025).

Building on this perspective, holistic development in higher education emphasizes the interconnected growth of the body and mind, recognizing the body as an active site of learning rather than a passive instrument. In this regard, embodied pedagogy positions movement as central to experiential learning and social engagement, enabling students to construct meaning through physical participation and interaction (Ulep, 2025). Through embodied experiences, learners develop not only motor competence but also self-awareness, collaboration skills, and reflective capacities. Therefore, Physical Education becomes a vital academic space where physical literacy, emotional regulation,

and social responsibility are cultivated simultaneously, reinforcing the broader educational mission of producing well rounded individuals.

Focusing on specific PE activities, within Philippine state universities, gymnastics is commonly integrated into the Physical Education curriculum as part of movement based and skill-oriented courses. Gymnastics instruction emphasizes body control, flexibility, strength, coordination, rhythm, and spatial awareness, which are core components of motor proficiency. Research indicates that participation in structured gymnastics programs enhances physical fitness, contributes to overall health and well-being, and encourages lifelong engagement in physical activity (Pavelko & Ponomarov, 2024). Beyond these physiological benefits, gymnastics fosters discipline, focus, and perseverance, qualities that are essential for academic success and personal growth (Pereira et al., 2024). Moreover, the mastery of progressively challenging skills strengthens confidence and self-esteem, as students experience tangible evidence of improvement through practice (Moreira et al., 2020). These attributes align closely with the principles of holistic education, wherein physical competence supports psychological and social development.

Extending the discussion further, the developmental benefits of gymnastics extend beyond individual physical gains to encompass cognitive and emotional dimensions. Studies demonstrate a positive relationship between motor skill proficiency and executive functioning, suggesting that improvements in coordination and balance may support cognitive processes essential for academic performance (Capio et al., 2024). Furthermore, engagement in gymnastics has been associated with enhanced emotional regulation, resilience, and perseverance, as learners navigate challenges and manage performance related anxiety (Reguera-López-de-la-Osa et al., 2023). Socially, gymnastics activities, particularly those involving group routines or peer support, promote teamwork, cooperation, and social competence (Sari & Widodo, 2025). Collectively, these multidimensional outcomes reinforce the argument that gymnastics functions not merely as a physical training activity but as a platform for integrated human development.

At the institutional level, in institutions such as Batangas State University, where Physical Education programs prepare future educators and professionals in sports and human movement, gymnastics serves both as a foundational skill area and as a pedagogical tool for modeling effective instructional practices.

However, the developmental impact of gymnastics does not depend solely on the activity itself but also on how it is taught. Specifically, the effectiveness of gymnastics as a developmental instrument is significantly shaped by instructional strategies that emphasize student engagement, progressive skill development, collaboration, safety, and reflective learning. Collaborative learning approaches, for instance, have been shown to enhance gymnastic competence, decision making skills, and learner satisfaction by fostering active participation and peer interaction (Ávalos Ramos et al., 2019). Similarly, participatory teaching styles, such as microteaching and guided practice, increase engagement and positive attitudes toward gymnastics (Delgado Ávalos et al., 2022). Innovative strategies, including video analysis and reflective feedback, further enrich learning experiences by promoting critical thinking and self-assessment (Mariano et al., 2019).

Despite these international findings, substantial evidence supporting the physical, cognitive, emotional, and social benefits of gymnastics exists, but limited empirical research has examined how specific instructional strategies within Philippine higher education influence students' holistic development outcomes. This gap is particularly relevant in the context of Batangas, where students come from diverse socio economic and educational backgrounds that may shape their learning experiences and developmental trajectories. Thus, understanding how gymnastics instruction contributes to holistic development within this localized setting is essential for aligning teaching practices with national educational mandates and institutional goals.

In light of this context, investigating gymnastics instruction in a Philippine state university contributes meaningfully to both local and international discourse on Physical Education effectiveness. Generating empirical evidence from Batangas provides insight into how instructional practices in gymnastics align with holistic education principles and informs potential improvements in curriculum implementation and pedagogical design.

Accordingly, this study examines the contribution of gymnastics instruction to students' holistic development in a Philippine state university in Batangas. Specifically, it assesses students' perceptions of gymnastics' impact on their physical, cognitive, social, and emotional development; identifies the instructional strategies utilized by teachers; and determines whether significant

relationships exist between these strategies and students' holistic development outcomes.

Materials and Methods

Research Design

This study employed a descriptive research design to determine how gymnastics instruction contributes to the holistic development of PE major students. The design was appropriate because it allowed the researchers to describe and analyze existing practices, strategies, and outcomes without manipulating any variables. It enabled an examination of instructors' teaching approaches and students' perceptions of their development across multiple aspects, which are physical, cognitive, emotional, and social. By using this approach, the study provided a contextualized understanding of gymnastics instruction within a tertiary physical education setting at Batangas State University Pablo Borbon Campus.

Participants, Sampling Technique, and Sample Size

The participants of this study included 22 Human Kinetics instructors and 78 third year PE major students (37 from class section 1 and 41 from class section 2). The researchers employed purposive sampling to ensure that participants were directly involved in gymnastics instruction or had relevant experience in gymnastics classes. Instructors were included if they were actively teaching courses related to Human Kinetics, while students were included if they were enrolled in third year PE programs and had participated in gymnastics activities. Participants who did not meet these criteria were excluded. In total, 100 respondents comprised the study sample, representing the population relevant to the research objectives.

Data Gathering Instrument

A researcher made questionnaire was used as the primary data gathering instrument. The questionnaire was developed following a structured process of creation, validation, administration, and scoring. During the creation phase, the researchers conducted an extensive review of literature on gymnastics instruction, holistic development, teaching strategies, and physical education to ensure the instrument's content was relevant and comprehensive. The questionnaire consisted of three sections: Part I assessed the teaching of

gymnastics and its impact on holistic student development; and Part II examined the strategies employed by instructors in teaching gymnastics.

During the validation phase, the draft questionnaire was submitted to the researchers' adviser and selected Human Kinetics faculty for content and face validation. Feedback regarding clarity, relevance, and alignment with the research objectives was incorporated into the final draft. Suggestions from the adviser were also included to enhance readability and appropriateness of the items. Following validation, a pilot test was conducted among 20 PE major students who were not included in the final sample to assess the instrument's reliability. The internal consistency of the questionnaire was determined using Cronbach's alpha, which yielded a value of 0.87, indicating acceptable reliability. These results confirmed that the instrument was consistent and suitable for use in the main data collection.

Data Gathering Procedure

Before administering the questionnaire, the researchers secured formal permission from the department head of Batangas State University Pablo Borbon Campus. The purpose and objectives of the study were explained to all participants, and respondents were informed that their participation was voluntary and that their responses would remain confidential. The validated questionnaire was personally administered by the researchers to ensure proper completion. Respondents were guided in filling out the questionnaire, and completed forms were collected immediately to maintain data accuracy and integrity. The researchers followed a systematic procedure of distribution, supervision, and retrieval to ensure that all questionnaires were properly answered and suitable for analysis.

Scoring and Data Analysis

Responses were scored using a four-point Likert scale, with 4 = Strongly Agree, 3 = Agree, 2 = Disagree, and 1 = Strongly Disagree. Data were analyzed using both descriptive and inferential statistics to address the study objectives. Weighted mean scores were computed to determine the level of agreement on teaching strategies and students' holistic development. Ranking was employed to assess the relative importance of respondents' perceptions regarding gymnastics instruction. To examine the relationship between instructors' teaching strategies and students' holistic development, Pearson r correlation

coefficient was applied. All inferential tests were evaluated at a 0.05 level of significance. Statistical analyses were performed using SPSS, ensuring accuracy, reproducibility, and reliability of the results.

Results

Assessment of Respondents on Students' Holistic Development Through Gymnastics

Table 1. Physical Development

Indicators	Teacher WM	Teacher VI	Teacher R	Student WM	Student VI	Student R
1. I give 30-minute exercise to know if they will last long in a certain task without undue fatigue.	3.16	A	3	3.86	SA	1
2. I let my student do a wide range of movement in the activities.	3.36	SA	1	3.80	SA	2
3. I provide lifting exercises for my students to know how much effort they would exert in the performance.	3.16	A	5	3.40	SA	5
4. I prefer balancing activities to test their equilibrium.	3.10	A	2	3.52	SA	4
5. I prefer 50-meter sprint to test their speed.	3.22	A	4	3.68	SA	3
Composite Mean	3.20	A	–	3.65	SA	–

In the physical aspect, the highest mean for teachers was wide range of movements (WM = 3.36, SA), and the lowest was balancing activities (WM = 3.10, A). For students, the highest mean was the 30-minute exercise (WM = 3.86, SA), and the lowest was lifting exercises (WM = 3.40, SA). The composite mean was 3.20 (A) for teachers and 3.65 (SA) for students.

Table 2. Cognitive Development

Indicators	Teacher WM	Teacher VI	Teacher R	Student WM	Student VI	Student R
1. I always review my student about the past lessons.	3.70	SA	1	3.82	SA	1
2. I strictly implement and follow the rules and regulations in gymnastics.	3.66	SA	2	3.74	SA	2
3. I give my student allotted time to think new ideas for their performance.	3.52	SA	4	3.62	SA	4
4. I give specific assignments for the advanced lesson in gymnastics.	3.46	SA	5	3.48	SA	5
5. I remind my student to listen attentively in the discussion of different stunts in gymnastics.	3.56	SA	3	3.70	SA	3
Composite Mean	3.58	SA	–	3.67	SA	–

In the mental aspect, the highest mean for teachers was reviewing past lessons (WM = 3.70, SA), and the lowest was advanced assignments (WM = 3.46, SA). For students, the highest mean was reviewing past lessons (WM = 3.82, SA), and the lowest was advanced assignments (WM = 3.48, SA). The composite mean was 3.58 (SA) for teachers and 3.67 (SA) for students.

Table 3. Social Development

Indicators	Teacher WM	Teacher VI	Teacher R	Student WM	Student VI	Student R
1. I always remind my student in every group work activity to willingly consider different ideas or opinions from other students.	3.66	SA	1	3.84	SA	1
2. I allow them to exchange information or express new ideas, thoughts, and feelings to other students.	3.62	SA	2	3.72	SA	3
3. I prepare group activities in which they will work together to come up with a better idea.	3.32	SA	5	3.58	SA	5
4. I remind my student to have respect with each other.	3.52	SA	4	3.64	SA	4
5. I let my student show their leadership skill in every group work.	3.58	SA	3	3.82	SA	2
Composite Mean	3.54	SA	–	3.72	SA	–

In the social aspect, the highest mean for teachers was reminding students to consider different opinions in group work (WM = 3.66, SA), and the lowest was preparing group activities (WM = 3.32, SA). For students, the highest mean was considering different opinions (WM = 3.84, SA), and the lowest was preparing group activities (WM = 3.58, SA). The composite mean was 3.54 (SA) for teachers and 3.72 (SA) for students.

Table 4. Emotional Development

Indicators	Teacher WM	Teacher VI	Teacher R	Student WM	Student VI	Student R
1. I compliment my student when they did a good job and acknowledge their hard work in their performance.	3.66	SA	1	3.86	SA	1
2. I prepare pep talk for my student every meeting.	3.34	SA	5	3.72	SA	3
3. I encourage my student when they mess-up.	3.46	SA	4	3.62	SA	4
4. I always cheer my student for a good performance.	3.54	SA	3	3.52	SA	5
5. I remind my student to avoid distraction and focus in their performance.	3.60	SA	2	3.76	SA	2
Composite Mean	3.52	SA	–	3.70	SA	–

In the emotional aspect, the highest mean for teachers was complimenting students (WM = 3.66, SA), and the lowest was preparing pep talks (WM = 3.34, SA). For students, the highest mean was complimenting students (WM = 3.86, SA), and the lowest was cheering for good performance (WM = 3.52, SA). The composite mean was 3.52 (SA) for teachers and 3.70 (SA) for students.

Strategies Utilized by Respondents in Teaching Gymnastics

Table 5. Strategies Utilized by Teachers in Teaching Gymnastics

Strategies	Teacher WM	Teacher VI	Teacher R	Student WM	Student VI	Student R
1. Discussion method – for history, rules, regulations, safety precautions, and terminologies in gymnastics.	3.58	SA	2	3.86	SA	1
2. Self-directed instruction – taking learning of gymnastics into the students' own hands and applying prior knowledge.	3.70	SA	1	3.78	SA	3
3. Demonstration method – execution of different and difficult skills and positions in gymnastics.	3.56	SA	3	3.74	SA	4
4. Direct instruction – focusing on how to use different facilities and equipment in gymnastics.	3.50	SA	5	3.70	SA	5
5. Indirect instruction – student-centered instruction for difficult activities and performances in gymnastics.	3.52	SA	4	3.62	SA	6
6. Assertive approach – managing student behavior while performing gymnastics.	3.46	SA	6	3.64	SA	7
7. Group managerial approach – responding immediately to student behavior to prevent problems during group activities.	3.44	SA	7	3.80	SA	2
Composite Mean	3.54	SA	–	3.73	SA	–

For teaching strategies, the highest mean for teachers was self-directed instruction (WM = 3.70, SA), and the lowest was group managerial approach (WM = 3.44, SA). For students, the highest mean was discussion method (WM = 3.86, SA), and the lowest was indirect instruction (WM = 3.62, SA). The composite mean was 3.54 (SA) for teachers and 3.73 (SA) for students.

Significant Relationship Between Teaching Strategies and Students' Holistic Development

Table 6. Relationship Between Teaching Strategies and Students' Holistic Development

Aspect	Teacher Pearson -r	Teacher p-value	Teacher H_0 Decision	Teacher Interpretation	Student Pearson -r	Student t p-value	Student H_0 Decision	Student Interpretation
Physical	-0.043	0.764	Accept	Not Significant	0.371	0.008	Reject	Significant
Mental	-0.073	0.616	Accept	Not Significant	0.073	0.616	Accept	Not Significant
Social	0.154	0.285	Accept	Not Significant	0.496	0.000	Reject	Significant
Emotional	0.108	0.457	Accept	Not Significant	0.121	0.401	Accept	Not Significant

Significant at $p < 0.05$

Significant relationships were observed only for students in the physical aspect ($r = 0.371$, $p = 0.008$) and social aspect ($r = 0.496$, $p = 0.000$). No significant relationships were found in the mental or emotional aspects for students, nor in any aspect for teachers.

Discussion

The study revealed that gymnastics plays a significant role in promoting the holistic development of PE major students, influencing their physical, cognitive, social, and emotional domains. Gymnastics activities that emphasize endurance, speed, and a wide range of motion provide opportunities for students to enhance functional fitness and motor skills, highlighting the structured nature of physical education as a key factor in student development. These findings align with Liu (2023), who emphasized that structured physical activity programs improve muscular strength, coordination, and cardiovascular endurance, and Sultanova (2025), who noted that flexibility and speed exercises support balanced physical development and overall well-being.

In terms of cognitive development, the integration of structured review sessions, adherence to rules, and opportunities for independent problem-solving significantly enhanced students' engagement and critical thinking. This supports the findings of Pill and SueSee (2017), who argued that curricula incorporating critical inquiry and problem-solving foster creativity and the practical application of cognitive resources. Moreover, research by Haqmal et al. (2025) indicates strong correlations between physical education participation and problem-solving abilities, academic performance, and personal growth, suggesting that cognitive development in PE is closely linked to both academic and personal outcomes. These findings underscore the potential of gymnastics

to strengthen decision-making, analytical skills, and overall intellectual engagement.

Social development emerged as another critical dimension of holistic growth, with cooperative and group-based activities fostering communication, collaboration, and leadership skills. Students' participation in structured group tasks enhanced their interpersonal relationships and respect for peers. Additional studies support these results, showing that engagement in sports improves teamwork, conflict resolution, and communication skills (Albán Pazmiño et al., 2024), while leadership opportunities during group activities promote self-efficacy and social competence (Archana, 2021). Finally, emotional development was supported through positive reinforcement, encouragement, and guidance during performance, which helped students manage stress and maintain motivation. Further research reinforces those structured sports and gymnastics activities enhance students' ability to cope with performance anxiety (Guadamud, 2024) and increase motivation to participate in physical activities through instructor and peer support (Bernate & Fonseca, 2025).

In terms of the strategies utilized by teachers in teaching gymnastics. The study revealed that teachers employ a combination of student-centered and teacher-directed strategies to facilitate gymnastics instruction, aiming to support holistic student development across cognitive, physical, social, and emotional domains. Among the strategies, self-directed learning and discussion methods were perceived as particularly effective by both teachers and students. These approaches emphasize student autonomy, encourage critical thinking, and foster active engagement in the learning process. This aligns with the literature on active learning strategies, which highlights their role in promoting deeper cognitive and psychosocial growth (Lobato Cordero & Sánchez-Encalada, 2025).

Teacher-directed strategies, such as demonstration and direct instruction, remained crucial for teaching complex gymnastics techniques. Explicit modeling and step-by-step guidance help students acquire skills safely and efficiently, supporting motor learning principles emphasized by Woods and Copur-Gencturk (2024). Additionally, assertive and group managerial approaches highlight teachers' attention to classroom behavior and organization, ensuring a safe, productive, and supportive learning environment (Gómez Rijo et al., 2023).

The study indicates that effective gymnastics instruction requires a balanced pedagogical approach, integrating both student-centered and teacher-directed strategies. While students benefit from autonomy and peer interaction, teacher-guided demonstrations ensure skill accuracy and safety. Notably, slight differences in perception between teachers and students regarding which strategies were most impactful underscore the importance of continuous feedback and reflective teaching practices, allowing educators to refine methods and maximize student development across all domains. In sum, the combination of structured, interactive, and reflective strategies in gymnastics contributes not only to physical skill acquisition but also to cognitive engagement, social competence, and emotional growth, demonstrating the multifaceted role of teaching approaches in fostering holistic development in tertiary physical education.

When it comes to the significant relationship between teaching strategies and students' holistic development. The study revealed that teaching strategies in gymnastics were significantly related to students' physical and social development, while no significant correlations were observed in the mental and emotional domains. This indicates that strategies emphasizing structured physical engagement and collaborative group activities have a measurable impact on students' physical performance and social competencies. These findings are consistent with Montes Mata et al. (2025), who emphasized that targeted physical exercises improve muscular strength, coordination, and cardiovascular fitness, while team-based activities enhance cooperation, communication, and leadership skills.

The significant influence on physical development suggests that strategies such as demonstration, self-directed learning, and structured skill practice effectively improve students' strength, balance, flexibility, and overall motor coordination (Ziyatov, 2025). Likewise, social competencies are strengthened through cooperative group activities, peer collaboration, and interactive teaching approaches, fostering interpersonal skills and teamwork (De León Marín, 2024; Simangunsong et al., 2025). These results highlight the importance of combining physical and social engagement in gymnastics to maximize observable outcomes in these domains.

In contrast, the lack of significant relationships in the mental and emotional domains suggests that while teaching strategies may provide cognitive guidance

and emotional support, these areas are influenced by additional factors, such as individual motivation, prior knowledge, and external social or academic conditions. Rahardian et al. (2024) and De León Marín (2024) noted that cognitive and emotional development often requires complementary interventions—such as reflective activities, mentorship, or counseling—to fully foster growth. This discrepancy underscores the complexity of achieving holistic development solely through instructional strategies in gymnastics.

In general, the findings demonstrate that while pedagogical strategies in gymnastics are highly effective for promoting physical and social development, achieving a fully integrated holistic development necessitates additional approaches explicitly targeting cognitive and emotional growth. This emphasizes the need for a multifaceted instructional design in physical education that balances skill acquisition, collaborative engagement, and support for mental and emotional well-being.

Conclusions

This study concludes that teaching strategies in gymnastics play a meaningful role in fostering students' holistic development across physical, cognitive, social, and emotional domains. The findings indicate that gymnastics instruction is perceived to significantly support multidimensional growth, with particularly strong contributions to physical competence and social skills. A balanced integration of student centered and teacher directed approaches, such as self-directed learning, discussion, demonstration, and structured guidance, creates an instructional environment that enhances engagement, collaboration, skill acquisition, and personal development. The results partially support the working hypothesis, as teaching strategies were found to be significantly associated with students' physical and social development, while cognitive and emotional outcomes appear to be influenced by additional individual and contextual factors beyond instructional strategies alone. This study contributes to the academic community by providing empirical evidence that teaching approaches in gymnastics extend beyond motor skill development and can serve as predictors of broader aspects of student growth in tertiary physical education. However, the reliance on self-reported data, the correlational design, and the context specific sample limit causal inference and generalizability. Future research is recommended to use experimental or longitudinal designs, integrate objective assessment tools, and develop targeted instructional interventions that more

explicitly address cognitive and emotional development, thereby advancing a more comprehensive model of holistic education in physical education settings.

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Ethical Approval and Informed Consent

The study strictly adhered to ethical principles in research involving human participants. Participation was entirely voluntary, and respondents were informed of the study objectives, procedures, and their rights to withdraw at any time without penalty. Confidentiality and anonymity of respondents were maintained throughout the study. Formal approval to conduct the study was obtained from the department head prior to data collection. All collected data were securely stored and used solely for academic and research purposes. The study was conducted in accordance with the ethical principles outlined by the Commission on Higher Education Memorandum Order No. 15, Series of 2019, and followed general guidelines emphasizing respect for persons, beneficence, and justice in educational research.

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