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The Development of Competencies for Sports Coaches in International Schools

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Research Article

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Abstract

Background/purpose. This study aimed to develop and examine the consistency of competencies for Sports Coaches in International Schools (SCI)

Materials/methods. The study of competencies was conducted using in-depth interview techniques with five experts. The research instrument was a semi-structured interview form, analyzed using analytic Induction. The development of competencies was conducted using the Delphi technique with 17 selected experts. The research instruments were open-ended questionnaires and rating scale questionnaires. The consistency of experts' opinions was analyzed using the median and interquartile range. The consistency of competencies was examined with 264 SCI. The research instrument was a rating scale questionnaire. Data were analyzed using Second-order Confirmatory factor analysis.

Results. 1) The study of competencies revealed that knowledge competencies comprised six main terms, skill competencies comprised seven main terms, ethical competencies comprised four main terms, and personal characteristic competencies comprised five main terms. 2) In developing the competencies, the expert group agreed with the constructed competencies, and their opinions were consistent, passing all criteria. 3) Examine the consistency of competencies for SCI shows that p-value of 0.21, relative $\chi 2$ of 1.07, GFI of 0.93, AGFI of 0.91, NFI of 0.97, CFI of 1.00, Standardized RMR of 0.03, and RMSEA of 0.01. It was concluded that the null hypothesis was accepted, indicating that the research model was consistent with the empirical data.

Conclusion. The results contribute to the understanding of competencies for SCI and emphasize important indicators suitable for developing SCI competencies and establishing policies for universities that offer international physical education programs.

1. Introduction

Human resource development aimed at enhancing competencies for navigating change, multicultural integration, and evolving socio-economic conditions is vital for educational institutions to align with labour market demands. This objective closely aligns with Thailand's 13th National Economic and Social Development Plan (2023–2027), which prioritizes strengthening national resilience by equipping individuals, society, and the economy to respond effectively to global shifts. The plan underscores the importance of equitable access to quality development, emphasizing human capital advancement through knowledge, technology, innovation, and environmentally sustainable practices. A key focus is restructuring the production and service sectors toward an innovation-driven economy by cultivating a workforce with the skills, behaviours, and ethical values necessary for the modern era. Moreover, it promotes lifelong learning, social protection, and the development of a high-potential workforce capable of contributing to national productivity and social cohesion (Office of the National Economic and Social Development Council, 2023).

The Thailand National Sports University has implemented a policy for its Faculty of Education to establish a Bachelor of Education in Physical Education (International Program), aiming to support the expansion of the sports industry, an emerging global economic sector. This initiative aligns with Thailand's broader strategy to position the sports industry as a driver of economic development. As outlined by the Office of the Permanent Secretary, Ministry of Tourism and Sports (2019), Group 7 institutions that specialize in sports education play a vital role in this process and must prioritize internationalization in curriculum and instruction. The university faces the challenge of producing graduates equipped to meet the demands of a multicultural society, the ASEAN Economic Community, and the evolving sports labour market. Graduates are expected to serve as physical education teachers in both domestic and international curriculum schools, as well as certified coaches and referees at the international level. This initiative supports the 7th National Sports Development Plan (2023–2027), which tasks the university with enhancing the capabilities of all educators' physical education graduates, current PE teachers, and general educators by equipping them with skills in basic, competitive, and professional sports. The plan further emphasizes the need to develop a standardized, competency-based curriculum to strengthen all personnel across the sports ecosystem, including teachers, coaches, volunteers, administrators, and other industry stakeholders. The ultimate goal is for sports professionals to achieve international certification or its equivalent, thereby becoming a key force in advancing sports development at all levels (Ministry of Tourism and Sports, 2023). The Thailand National Sports University needs to develop sports personnel with competencies to become international sports leaders, in alignment with its vision of being "a quality higher education institution in sports in the ASEAN region." The development of the Bachelor of Education program in Physical Education (International Program) will provide opportunities for students to apply their knowledge in further developing the quality of sports in Thailand.

As of 2024, Thailand hosts 249 international schools, serving a total of 77,734 students (International Schools Association of Thailand, 2024). These institutions accommodate a diverse student body, with approximately 30–50% comprising foreign nationals, typically children of expatriates working in Thailand. Additionally, a significant proportion of Thai students is enrolled, reflecting the growing demand for international education in the country. These schools predominantly offer English-medium instruction, with parents opting for international education to equip their children with globally competitive knowledge, skills, and cultural competencies often at a lower cost than overseas study. Unlike Thai national schools, which follow the national core curriculum and allocate limited time to physical education, international schools implement foreign curricula, primarily the International Baccalaureate (British) or Common Core State Standards (American) frameworks (The American School of Bangkok, 2023; St. Andrews, 2024). Physical

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education and sports hold significant curricular and extracurricular importance in international schools, promoting lifelong wellness and providing pathways for athletic development. Talented students often compete in regional events such as those organized by FOBISIA, with sports coaches playing a vital role in nurturing students' athletic potential.

The development of students in physical education, sports, and health at international schools is central to the core role and responsibility of highly competent International School Sports Coaches. These professionals demonstrate excellence in teaching physical education based on international school curricula, have the capability to organize diverse sports activities that meet global standards, coach school athletic teams for inter-school competitions, and develop high-potential student-athletes. They are characterized by fluent English proficiency, a deep understanding of multicultural student backgrounds, cross-cultural communication expertise, adaptability to diverse cultural contexts, effectiveness in dynamic, varied environments, and a commitment to staying current with international educational standards. Churchville (2025). It has been noted that international school leaders place great importance on participation in sports and health activities, and on supporting gifted learners within international school environments. Lervold, et al. (2025). The relationship between coaches and athletes is a crucial factor that affects coaching effectiveness and athlete satisfaction. Positive relationships between coaches and athletes are characterized by trust, respect, and open communication, which help promote athlete motivation and performance. Coaches who prioritize building strong, supportive relationships with athletes often create an environment conducive to optimal performance. They develop comprehensive strategic planning to enhance sports development, with emphasis on personalized approaches and meaningful, advanced learning experiences that are inclusive of all students. Sports coaches play a crucial role in the health of sports participants. Therefore, having competencies that align with the international school context, including the ability to manage sports participants, support health, educate, evaluate, motivate, cooperate, prevent, communicate, serve as role models, and practice self-management, is essential for implementing physical education, sports, and health programs in international schools (Marek et al., 2025; Barros, et al., 2025). The application of technology in sports instruction and athlete training enhances teaching effectiveness and aligns with the digital age context. Consistent with this, Al-Shehri et al. (2025) highlight the necessity of improving AI integration in teaching, learning, and assessment through actionable recommendations that strengthen faculty competencies in AI applications, thereby responding to the growing demand for educational efficiency.

Given these considerations, the researcher aims to develop sports coaching competencies tailored to international schools, with the goal of informing competency development among students at the Thailand National Sports University. The research questions guiding this study are: 1) What indicators constitute the competencies of sports coaches for international schools? And 2) are the competencies of sports coaches for international schools developed in this study congruent with the empirical data?. This study seeks to align coaching competencies with the unique context of international schools in Thailand and current educational trends, ensuring their practical relevance to sports personnel development. The initiative is closely linked to the enhancement of curriculum management in the Bachelor of Education in Physical Education (International Program), incorporating the 2022 Higher Education Qualifications Framework (Higher Education Standards Committee, 2022), which outlines four key competency areas: 1) Knowledge, 2) Skills, 3) Ethics, and 4) Personal characteristics. These competencies serve as a foundational framework to strengthen the preparation of future sports coaches and support the effective implementation of internationalized physical education programs. Furthermore, the research findings can be applied to develop physical education teachers in international schools to possess competencies that align with appropriate contexts and are responsive to current educational changes through systematic investigation and validation.

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2. Literature Review

Sports coaches play a vital role in fostering athletes' holistic development physically, mentally, emotionally, and socially through a broad range of responsibilities. To be effective, coaches must continually enhance their knowledge, technical skills, behavior, and attitudes. Kao et al. (2017) highlight key competencies such as motivation, strategic thinking, technical expertise, and management skills. A coach's positive attitude and ability to provide informed guidance also contribute significantly to building athletes' trust. Programs like Life Kinetik have been shown to strengthen coaches' psychological competencies for application in training (Novan et al., 2020). Coaching effectiveness depends on the ability to tailor methods to athletes' individual needs and the coach's own philosophy (Leeder, 2022). According to Hodges and Lohse (2022), essential factors in coaching include task difficulty, motivation, and specificity, with training designed to support learning, skill transfer, and performance maintenance. Nenko et al. (2022) further emphasize that professional coaching involves intentional, communicative activities aimed at goal achievement, requiring the exchange of knowledge and the development of relationships essential to the profession. Consequently, the professional training of coaches must involve a structured process of acquiring cultural awareness, specialized knowledge, and practical experience necessary for effective practice.

Every accomplished sports coach recognizes that effective pedagogical and interpersonal practices are equally as critical as technical proficiency in sport-specific skills and strategies. Contemporary coaching theory and practice encompass a range of essential and evolving themes, including leadership, athlete learning, emotional dynamics in coaching, the role of culture in constructing meaning, quality assurance in coaching, talent identification and development, and the philosophical foundations underpinning sports coaching. This is consistent with research on sports-related competencies conducted by Berndt (2022), who found that sport is an important economic activity and that understanding the role of teams and managers is necessary, yet managers, specifically their brand personas, are the focus. The findings show the construction of the brand persona in three main dimensions pertinent to his role as a manager. The first is the performance in the managerial role in which Arsène Wenger is appointed, the second is associated with the person (including emotions and self-expression), and the third is the context (i.e., football) in which the manager operates. Chankuna and Sukdee (2025) introduced the Performance Index for Personal Fitness Trainers, a validated assessment tool designed to evaluate four key coaching dimensions: knowledge, physique and attitude, sales success, and management skills. Grounded in expert input and empirical validation, the PIPFT highlights the interconnectedness of coaching competencies, showing that knowledge enhances both physical preparedness and professional demeanor, which in turn impact client engagement and managerial performance. This structured rubric underscores the need for evidence-based evaluation in professional training, supporting career growth and quality assurance in the fitness industry. In conclusion, sports coaches need up-to-date knowledge of physical education and sports, and apply knowledge of technology and sports innovation development to ensure sustainability. They must possess appropriate skills for teaching physical education and sports, work effectively, communicate motivationally, and cope with the changing global situations of the current era. They should be individuals with virtue, morality, and ethics, and have characteristics as sports leaders and good role models. AI integration in the sports sector has led to notable advancements in performance optimization, fan engagement, and strategic decision-making. Nevertheless, it poses important ethical concerns and challenges requiring careful consideration. With capabilities spanning machine learning to real-time feedback systems, AI empowers coaches to analyze complex data and enhance their decision-making. Jud and Thalmann (2025) Current research on AI in sports coaching has been largely confined to specific aspects or

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technological case studies. The findings demonstrate a notable gap in addressing managerial considerations and the integration of digital coaches within the sports domain.

The study of research on the competencies of sports coaches for international schools (SCI) has defined the competencies as follows: 1) Knowledge competencies (KL), 2) Skills competencies (SK), 3) Ethics competencies (ET) 4) Personal characteristic competencies (PC), as shown in the conceptual framework as shown in Figure 1.

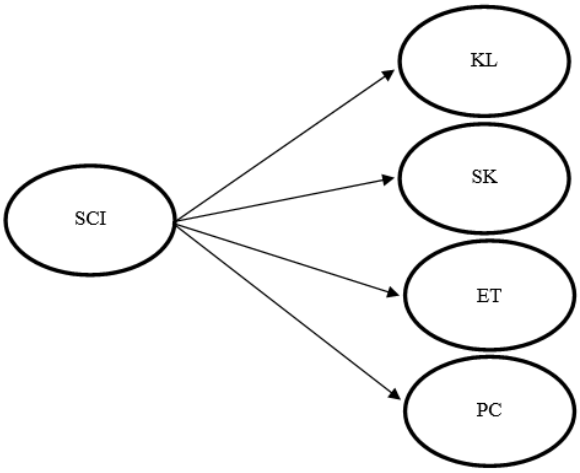

Figure 1. Conceptual Framework

3. Methodology

The research on developing competencies for sports coaches in international schools follows a Research and Development (R&D) model. It aims to study, develop, and examine the consistency of competencies for sports coaches in international schools. The research hypothesis is that the competencies developed for sports coaches in international schools are consistent with the empirical data. The researcher has divided the research methodology into 3 phases as follows:

3.1. Phase 1 (R1): Studying the competencies of SCI using the In-depth Interview technique

1) The informant group for studying the competencies of SCI, using the In-depth Interview technique, consists of 5 experts selected by purposive sampling. The qualification criteria for the informants are: having at least a master's degree in Physical Education, Sports, Sports Coaching, Health, and Recreation from abroad, or having been an exchange student at a foreign university for not less than 1 year, or having worked in a research position for a foreign university after completing a doctoral degree, with a working period of 6 months or more (Postdoctoral).

2) The research instrument is a semi-structured in-depth interview guide with four questions about the competencies of SCI. Five experts verified the quality of the semi-structured interview guide to determine the Index of Item-Objective Congruency (IOC), which must be equal to or greater than 0.50 to be considered valid. The qualifications of the experts include: (1) having at least a master's degree in Physical Education, Sports, or related fields, (2) having completed an international sports coaching course, or being an international sports coach, or having at least one academic work related to sports coach competencies, or being a national and international sports coach training instructor. The IOC of the interview guide for sports coach competencies in international schools is 1.00.

3) Data collection involved studying concepts, documents, textbooks, and research related to the competencies of SCI, the roles of sports coaches, and the necessary abilities for current and future coaches. The collected data were synthesized to define the framework of competencies for SCI and

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to create a semi-structured in-depth interview guide. The researcher conducted face-to-face interviews with five selected informants, recorded and organized the data according to the predetermined interview guide, analyzed the data for consistency, and used the results to develop a questionnaire on SCI competencies.

4) Analytic Induction was used to analyze the data from expert interviews. Analytic Induction represents a methodological approach to interpreting and synthesizing conclusions from concrete instances or observable phenomena. This inductive process of data construction operates iteratively throughout the data collection phase, culminating in the formulation of conclusions once data saturation has been achieved. Experts provided opinions, detailed explanations about the importance and situations, as well as beliefs and various meanings related to the competencies of SCI. The data was recorded, collected, and categorized according to the interview guide. Data analysis was performed by finding data consistency.

3.2. Phase 2 (D1): Developing competencies of SCI using the Delphi technique

1) The informant group for developing competencies of SCI using the Delphi technique consists of 17 experts selected by purposive sampling. The qualification criteria for the sample group are as follows: (1) 7 sports coaches in international schools with at least 3 years of experience (2) 5 administrators or department heads related to physical education and sports teaching management, or head coaches in international schools with at least 3 years of experience (3) 5 university instructors teaching bilingual or international programs related to physical education, sports, coaching, health, and recreation for at least 3 years, or those with at least 1 year of experience as sports coaches abroad

2) Research instruments: (1) Open-ended questionnaire for the first round of the Delphi technique (2) Rating scale questionnaire for the second and third rounds of the Delphi technique Five experts verified the quality of the open-ended questionnaire to determine the Index of Item-Objective Congruency (IOC), which must be equal to or greater than 0.50 to be considered valid. The IOC of the questionnaire on competencies of SCI ranged from 0.80 to 1.00.

3) Data collection: The data from Phase 1 were used to create question guidelines. The researcher had five experts check the content validity of the open-ended questionnaire to find the IOC. Items with an IOC of 0.5 or higher were used in the open-ended questionnaire. This questionnaire was then used to survey 17 experts. The experts considered the consistency of the data using the Delphi technique for three rounds to reach a consensus on the findings and determine the competency components of SCI.

Round 1: Open-ended questionnaire to gather opinions from all 17 experts, with a 2-week response time.

Round 2: Rating scale questionnaire developed from Round 1 responses, sent back to all 17 experts to rate the importance of each item.

Round 3: Confirmation of experts' answers using the same rating scale questionnaire as Round 2, but including the median values and marking the expert's previous answers.

4) Data analysis: Analysis of indicators based on the opinions of 17 experts by calculating the median and interquartile range. Indicators with a median of 3.50 or higher and an interquartile range not exceeding 1.50 were selected.

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3.3. Phase 3 (R2): Examine the consistency of competencies of SCI using Confirmatory Factor Analysis (CFA)

1) The sample group consists of 264 sports coaches from international schools in the 2024 academic year. The sample size was determined using G*Power 3.1 software, with a goodness-of-fit test, an effect size of 0.05, a significance level of 0.05, and a power of 0.80, which yielded a minimum required sample of 226 participants (Cohen, 1988; Hair et al., 2019). To account for potential attrition, the sample size was further validated using the Rule of Thumb, with a 12:1 ratio of sample size to observed variables (Hair et al., 2019; Schumacker & Lomax, 2016). The sample was selected using Two-stage Sampling: 1) Sports coaches from international schools in Thailand with at least 3 years of experience. (2) 132 coaches each from schools using the International Baccalaureate curriculum and Common Core State Standards, totaling 264 coaches.

2) The research instrument is a 5-point Likert scale questionnaire on competencies of SCI. Five experts verified the quality of the instrument to determine the Index of Item-Objective Congruency (IOC), which ranged from 0.80 to 1.00. The reliability of the questionnaire was tested with 30 non-sample sports coaches, resulting in an Alpha Coefficient of 0.89.

3) Data collection involved creating a questionnaire based on indicators selected in phase 2 and administering it to 264 sports coaches from international schools.

4) Data analysis includes calculating the mean and standard deviation of competencies, using Joshi et al. (2015) interpretation criteria. Second-order Confirmatory Factor Analysis was performed using Maximum Likelihood estimation to verify the model's goodness of fit. Key statistics used include p-value, relative Chi-Square, GFI, AGFI, NFI, CFI, Standardized RMR, RMSEA, and construct reliability (ρc). (Joreskog & Sorbom, 1993; Diamantopoulos & Siguaw, 2000).

4. Results

1) The study on the competencies of SCI, conducted through in-depth interviews with five key informants, yielded the following findings: (1) Knowledge competencies were categorized into six main terms with 19 subtopics; (2) Skills competencies were organized under seven main terms with 26 subtopics; (3) Ethical competencies were identified through 4 main terms with 14 subtopics; and (4) Personal characteristic competencies were summarized into five main terms with 15 subtopics. These findings provide a detailed framework for understanding the multidimensional competencies required for SCI contexts.

2) Developing competencies of SCI Using the Delphi Technique. Based on input from 17 experts, analyzed using median and interquartile range, the study identified four core areas of competencies development:

Knowledge Competencies as follows: (1) Foundations of Physical Education and Sports Coaching: Demonstrates comprehensive knowledge of the principles of physical education and coaching, including human growth and development, motor learning and movement, adapted physical education for individuals with special needs and disabilities, and the philosophical foundations of coaching. (2) Principles of Sports Science: Reflects a thorough understanding of exercise and sport physiology for training and fitness optimization; sports psychology for enhancing mental performance; sports medicine concerning injury prevention, treatment, and rehabilitation; sports nutrition for appropriate nutrient intake during physical activity; and sports biomechanics for addressing and correcting movement inefficiencies in training and competition.(3) Principles of training program design: Demonstrates expertise in designing short-term, long-term, and individualized training programs to meet diverse athletic needs. (4) Rules, regulations, and organization of sports competitions: Exhibits knowledge of sports rules and regulations, competition management strategies, and legal frameworks relevant to sports. (5) Educational Management and

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Assessment: Possesses an understanding of instructional methodologies and assessment techniques applicable in physical education and coaching contexts. (6) Sports Technology and Innovation: Demonstrates understanding of contemporary sports technologies and innovation design principles to enhance athletic performance and coaching effectiveness.

Skill Competencies as follows: (1) Working professionally: Demonstrates key professional skills, including collaboration, proactive initiative, innovative thinking, autonomous learning, emotional regulation under stress, and a constructive mindset. (2) Team Management and Athlete Development: Exhibits skills in talent identification and recruitment, athlete development, team oversight, and efficient management of sports resources, including equipment and facilities. (3) Communication Skills: Demonstrates proficiency in English and other relevant foreign languages for professional use, the ability to motivate and persuade athletes, and skills in guiding athletes through challenges toward achieving goals. (4) Analytical and Problem-Solving Skills: Possesses the ability to analyze complex problems, assess challenges and opportunities from diverse perspectives, and implement systematic solutions. (5) Being an entrepreneur in physical education and sports: Demonstrates the ability to assess job market readiness, analyze competitive team performance, and devise strategies for competitive advantage. (6) Sporting and Coaching Proficiency: Exhibits skills in sport-specific techniques, instructional methods, training program planning, continuous learning, and athlete motivation strategies. (7) Physical, Sports, and Digital intelligence: Demonstrates competence in physical literacy, sport-related intelligence, and digital literacy relevant to contemporary coaching environments.

Ethical Competencies are as follows: (1) Coaching Ethics: Demonstrates adherence to ethical coaching responsibilities, fairness, equal treatment of athletes, commitment, perseverance, and patience in team development. (2) Civic Responsibility and Volunteerism: Reflects a strong ethical orientation toward generosity, compassion, respect for communal resources, and moral leadership. (3) Conflict of Interest Management and Public Interest Focus: Upholds ethical conduct through principled decision-making, avoidance of self-interest, and management practices characterized by transparency, accountability, and integrity. (4) Sportsmanship: Embodies ethical behavior in victory and defeat, including humility, grace, and forgiveness.

Personal Characteristic Competencies as follows: (1) Leadership in Sports and Exercise: Demonstrates traits such as effective communication, decision-making, critical thinking, exemplary behavior, and appreciation of individual differences. (2) Credible and Professional Demeanor: Exhibits a professional appearance, good physical health, and strong self-confidence. (3) Adaptability and Flexibility: Reflects the ability to interact respectfully with authority figures, adjust to various social and cultural contexts, and be receptive to diverse opinions. (4) Social Responsibility: Demonstrates punctuality, commitment to social equity, and concern for environmental sustainability. (5) Approachability and Supportiveness: Displays warmth and availability as a mentor and advisor, creating a safe and supportive environment for athletes.

3) The results of the confirmatory factor analysis (CFA) for the competencies of SCI indicated strong suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.920, suggesting excellent sample adequacy. Additionally, Bartlett's Test of Sphericity yielded a chi-square value of 5817.799, which was statistically significant ($p < .01$), confirming the dataset's appropriateness for factor analysis.

All factor loadings for the competencies of SCI were positive and statistically significant at the .01 level. Detailed results are presented in Table 1.

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Table 1. Analysis of Confirmatory Factor (first order) for competencies of SCI

Factor	Indicators	Factor Loading				R^2
		b	B	SE	t	
KL	1. Foundations of Physical Education and Sports Coaching	0.51	0.67	0.05	9.69**	0.33
	2. Principles of sports science	0.54	0.60	0.05	10.25**	0.36
	3. Principles of training program design	0.57	0.59	0.06	9.98**	0.35
	4. Rules, regulations and organization of sports competitions	0.68	0.61	0.06	10.45**	0.37
	5. Educational Management and Assessment	0.55	0.62	0.05	10.61**	0.38
	6. Sports technology and innovation	0.63	0.64	0.06	11.02**	0.41
SK	1. Working professionally	0.55	0.64	0.05	11.19**	0.41
	2. Team Management and Athlete Development	0.48	0.52	0.05	8.73**	0.27
	3. Communication Skills	0.64	0.59	0.06	10.09**	0.35
	4. Analytical and Problem-Solving Skills	0.53	0.68	0.05	9.86**	0.34
	5. Being an entrepreneur in physical education and sports	0.59	0.54	0.07	9.02**	0.29
	6. Sporting and Coaching Proficiency	0.52	0.55	0.06	9.31**	0.31
	7. Physical, Sports, and Digital intelligence	0.51	0.51	0.06	8.42**	0.26
ET	1. Coaching Ethics	0.71	0.66	0.06	11.41**	0.44
	2. Civic Responsibility and Volunteerism	0.69	0.68	0.06	11.81**	0.46
	3. Conflict of Interest Management and Public Interest Focus	0.89	0.66	0.08	11.41**	0.44
	4. Sportsmanship	0.58	0.58	0.06	9.47**	0.33
PC	1. Leadership in Sports and Exercise	0.66	0.56	0.07	9.14**	0.31
	2. Credible and Professional Demeanor	0.48	0.55	0.05	9.05**	0.31
	3. Adaptability and Flexibility	0.53	0.59	0.05	9.83**	0.35
	4. Social responsibility	0.56	0.55	0.06	9.04**	0.31
	5. Approachability and Supportiveness	0.51	0.67	0.05	9.69**	0.33

*** p < .01*

Analysis of confirmatory factor (second order) for competencies of SCI in International Schools found that relative χ2 at 1.07 (chi-square (χ2) was at 221.05; (probability-value [p-value] at 0.21); degrees of freedom (df) at 205); goodness of fit index (GFI) at 0.93; adjusted goodness of fit index (AGFI) at 0.91; Normal Fit Index (NFI) at 0.97; Comparative Fit Index (CFI) at 1.00 Standardized RMR

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at 0.03 and the root mean square error of approximation (RMSEA) at 0.01. Therefore, the research model is consistent with the empirical data, as shown in Table 2.

Table 2. Goodness of Fit Index in Analyzing Confirmatory Factors (second order) for the Model of Competencies for SCI

Fit Indicates	Perfect Fit	Acceptable fit	Study Finding	Result
p-value	> 0.05	-	0.21	Perfect fit
relative χ2	< 2.00	2.00-5.00	1.07	Perfect fit
GFI	≥ 0.95	0.90-0.94	0.93	Acceptable fit
AGFI	≥ 0.95	0.90-0.94	0.91	Acceptable fit
NFI	≥ 0.95	0.90-0.94	0.97	Perfect fit
CFI	≥ 0.95	0.90-0.94	1.00	Perfect fit
Standardized RMR	< 0.05	0.05-0.08	0.03	Perfect fit
RMSEA	< 0.05	0.05-0.08	0.01	Perfect fit

Analysis of factor weight found that the weights were all positive with a statistical significance of .01. Knowledge competencies (KL) has a standard component weight value of 0.99, and skill competencies (SK) has a standard component weight value of 0.99, followed by ethical competencies (ET) with a standard component weight value of 0.96 and personal characteristic competencies (PC) has a standard component weight value of 0.93. as shown in Table 3 and Figure 2.

Table 3. Analysis of Confirmatory Factors (Second Order) for the Model of Competencies for SCI

Factor	Factor Loading				R^2
	b	B	SE	t	
KL	0.99	0.99	0.10	9.54**	0.97
SK	0.99	0.99	0.09	10.14**	0.98
ET	0.96	0.96	0.12	8.24**	0.92
PC	0.93	0.93	0.10	9.24**	0.87

*** p < .01*

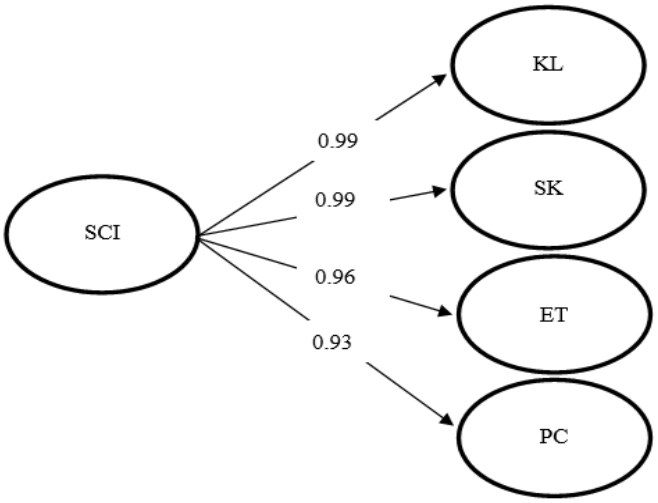

Figure 2. The Factors (Second Order) for the Model of Competencies for SCI

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The analysis of construct reliability found that Knowledge competencies (KL) have a high level of construct reliability (ρc = 0.78). Skill competencies (SK) have a high level of construct reliability (ρc = 0.78). Ethical competencies (ET) have a construct reliability of a high level ρc = 0.72). Personal characteristic competencies (PC) have a high level of construct reliability (ρc = 0.70), as shown in Table 4.

Table 4. Construct Reliability (ρc) for Latent Variables in Analysis of Confirmatory Factors (Second Order)

Latent Variable	Construct reliability (ρc)
KL	0.78
SK	0.78
ET	0.72
PC	0.70

5. Discussion

1. Knowledge competencies is identified as the most critical component for SCI. These coaches must possess a robust foundation in physical education and coaching principles, including developmental and learning theories, and specialized knowledge for teaching individuals with disabilities. Equally essential is their understanding of sports science, encompassing exercise and sports physiology for crafting effective training regimes and enhancing physical fitness; sports psychology for supporting mental well-being and motivation; sports medicine for injury prevention and rehabilitation; sports nutrition to ensure appropriate dietary intake; and sports biomechanics to address and rectify movement inefficiencies during training and competition. Moreover, coaches must be proficient in designing training programs tailored to short-term, long-term, and individual needs. They must also understand the rules and regulations governing sports competitions, the legal frameworks surrounding sports, effective competition management, and the integration of modern educational strategies, measurement and evaluation techniques, and sports technology and innovation. This multifaceted knowledge base supports coaches in applying, analyzing, and creatively utilizing content in real-world coaching scenarios. It is consistent with the Higher Education Standards Committee (2022), who describe knowledge competency as knowledge gained through formal education, practical experience, and reflective learning. This foundation is vital not only for professional performance but also for sustainable living in the digital era. Novan et al. (2020) emphasized the significance of sports psychology in motivating athletes and reducing anxiety. Jang et al. (2024) similarly stressed the importance of integrating sports science knowledge, biomechanics, physiology, and nutrition to develop sustainable coaching practices in Korea. This aligns with Jud and Thalmann (2025) highlighted the growing role of AI in coaching, underscoring the evolving knowledge demands on sports coaches to navigate new technologies and ethical challenges.

2. Skill competencies represents a critical component in the professional development of sports coaches in international school settings. Coaches in these contexts must demonstrate proficiency in a broad spectrum of skills, including, but not limited to, professional conduct, teamwork, proactive engagement, risk-taking, the application of innovative ideas, self-directed learning, emotional and stress regulation in high-pressure situations, positive thinking, team leadership, and athlete potential development. Additionally, they must be adept in managing resources such as materials, equipment, and facilities; communicating professionally in English and other relevant foreign languages; motivating athletes to confront and overcome challenges; engaging in systematic problem-solving; and demonstrating competencies in physical education, sports entrepreneurship, coaching expertise, lifelong learning, athlete training and motivation strategies, and the integration of physical, athletic,

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and digital intelligence. This emphasis on skill competency aligns with the frameworks of the Higher Education Standards Committee (2022), who define competency as the result of continuous learning, practice, and mastery. These skills are necessary not only for improving coaching performance within international schools but also for fostering personal development and contributing to societal progress in the digital era. Such competencies are vital for navigating a rapidly evolving technological landscape and encompass higher-order cognitive skills such as analysis, synthesis, critical and creative thinking, and systematic reasoning alongside interpersonal competencies that support democratic values, collaboration, mutual respect, and professional encouragement. This perspective is also supported by Kao et al. (2017), who emphasize that the competencies and psychological strategies of sports coaches significantly influence athletes' trust and performance. Similarly, Lyle and Cushion (2016) highlight the pivotal role of coaches in athlete success, asserting that effective coaching necessitates comprehensive knowledge, practical skills, and relevant experience to guide athletes toward their goals. Furthermore, Jones et al. (2017) advocate for future research on the growing trend of self-employment among sports coaches. They suggest exploring the career paths and entrepreneurial trajectories of coaches, particularly within international contexts, given the emotional dimensions of the sports profession that distinguish it from other industries. This includes examining the psychological and social attachments that drive individuals to pursue coaching careers, as well as analyzing the factors contributing to the successes and failures of coaches operating within global and local entrepreneurial ecosystems. These insights could serve as a foundation for future research on the evolving role of sports coaches in community-based and international sport entrepreneurship. Mischenko et al. (2021) asserted that the digital competence components of sports coaches are crucial to sports coaching, especially skills in using computer programs to manage training processes and deliver distance learning. Digital competence training was therefore provided for sports coaches. Following the completion of the project, findings revealed that the integrative-activity component indicators of coaches' digital competence increased by 1.88 times, while the number of coaches motivated to develop digital competence doubled ($p < 0.05$).

3. Ethical competencies ranks as the third most critical dimension in the professional profile of sports coaches in international schools. These coaches are expected to demonstrate integrity in their conduct, a clear understanding of their professional responsibilities, and a strong commitment to fulfilling their roles with diligence. They emphasize fairness, cultivate team development to its fullest potential, exhibit public-mindedness and a spirit of volunteerism, manage conflicts of interest with an orientation toward the collective good, and consistently embody the principles of sportsmanship. This perspective aligns with the findings of Dohsten et al. (2020), who emphasized the importance of ethical and moral responsibility in sustaining effective coaching practices, particularly in the context of elite athlete development. Similarly, Wang (2024) further supports this view, highlighting a positive correlation between coaches' ethical behavior and their effectiveness as role models. Key elements such as ethical decision-making, moral transfer, fair play, and team-wide ethical values were found to be strongly associated with enhanced athletic performance. Moreover, the study indicates that ethical leadership by coaches significantly contributes to the ethical development of athletes, suggesting that fostering ethical leadership among coaches may positively influence athletes' moral growth. Diller (2024) extends the discussion to the emerging landscape of digital and AI-assisted coaching, where ethical challenges such as data security, algorithmic bias, and emotionally sensitive interactions must be carefully managed. The largely unregulated nature of digital coaching heightens the risk of ethical lapses, underscoring the need for coach training, supervision, and selection processes grounded in robust ethical standards. In light of these developments, an integrated approach that combines human coaches with AI systems is recommended to ensure ethical safety while enhancing human empathy and intuition with technological innovation.

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4. Personal characteristic competencies is considered the least critical among the core competencies required of sports coaches in international schools; however, it remains a foundational aspect of coaching effectiveness. Coaches in these environments are expected to embody a range of personal traits, including leadership in sports and physical activity, assertiveness, decisiveness, and critical thinking. They must serve as positive role models, appreciate individual differences, maintain credibility and professionalism in appearance and behavior, uphold physical fitness and health, and display self-confidence, adaptability, and cultural sensitivity. Moreover, they should be receptive to others' perspectives, socially responsible, punctual, supportive of social equity and environmental stewardship, approachable, and capable of offering guidance in both athletic and personal contexts creating an environment in which athletes feel supported, safe, and motivated. This view corresponds with Orunbayev (2023), who emphasized the behavioral qualities, principles, and operational methods required of coaches and sports team managers. Effective coaches must demonstrate leadership, act as mentors in transferring organizational knowledge and experience, address broader social and environmental concerns, foster camaraderie, and tailor their behavior to varying circumstances with empathy and fairness. Similarly, Wang (2024) highlighted the importance of accommodating athletes' evolving physical capabilities and individual differences, noting that a coach's ability to adjust flexibly to such changes is vital for optimizing athletic performance, particularly in sports like basketball. Martens and Vealey (2023) underscored the necessity of understanding athletes' psychological and physical demands, especially in the context of year-round training and performance pressure, stating that coaches must earn athletes' respect and trust, and that their guidance carries significant weight in athlete development. McGuckin et al. (2022) explored how different leadership styles, transformational versus transactional, reflect distinct coaching objectives, such as instilling confidence or establishing authority. These insights contribute to a broader understanding of how leadership behaviors are intentionally deployed in real-world coaching environments. Zandi et al. (2021) further reinforced the centrality of the coach-athlete relationship, identifying it as a critical determinant of successful coaching outcomes. Topçu (2025) also emphasized the evolving role of coaching in facilitating personal and professional development. Through the promotion of self-awareness, goal-setting, and behavioral transformation, coaching enhances decision-making capabilities, emotional intelligence, and creative problem-solving. These qualities enable individuals, both coaches and athletes, to navigate complex, dynamic environments with resilience and confidence. As the coaching profession continues to evolve, its impact on communication, leadership, and holistic well-being grows increasingly significant for individuals and organizations alike. Furthermore, sports coaches in international schools must adapt to diverse social and cultural contexts, given that students represent multiple ethnicities. Failure to embrace cultural diversity can result in stress and impede their professional effectiveness. Al-Jarrah (2025) found that linguistic and cultural barriers are significant sources of stress for teachers. Educators must invest considerable effort in developing cross-cultural understanding and navigating communication challenges while managing the substantial variation in students' competency levels.

6. Conclusion

Based on the research findings, the competencies of SCI consist of 4 components and 22 indicators. The results contribute to the understanding of competencies for SCI and emphasize important indicators of competencies suitable for developing the competencies of Sports Coaches in international schools and for establishing policies for universities that offer international physical education programs. Therefore, the research findings should be presented to international school administrators to inform the development of sports coaches' competencies appropriate to international school contexts through systematic planning, evaluation, and development to enhance athletes' potential. Additionally, these findings should be presented to the administrators at Thailand National Sports University to serve as guidelines for curriculum development in international

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programs with a major in sports coaching. This can be implemented by establishing knowledge, skill, ethical, and personal characteristic competencies as learning outcomes for students and graduates. Universities that produce sports coaches, with graduates who tend to work in international schools, can also use this to manage their curricula to increase students' competencies, especially in knowledge and skill competencies. Additionally, this can be used as information to create training courses to develop SCI competencies. This research has resulted in the development of sports coach competencies for international schools through a research process and empirical data verification. Therefore, these competencies are well-suited to the conditions and context of sports coaches in international schools. Faculty members teaching courses related to sports coaching can use these SCI competencies as examples in their teaching. Furthermore, those interested in developing research related to sports coach competencies can use this to study and develop competencies for other types of sports coaches in the future.

7. Suggestion

The competencies developed by SCI are an important part of establishing concepts and standards for sports teaching practices and managing school sports competitions. This research has not yet focused on approaches and methods for developing competencies to achieve proficiency in each area, which affects the effectiveness of sports teaching.. Future research should examine approaches to developing competencies in SCI and develop models related to success as a sports coach in international schools. This may include developing training programs, evaluating sports teaching models, developing operational strategies for success as a sports coach at international schools, and utilizing SCI innovations, among others. Additionally, research should examine the competencies of sports coaches by separating them into individual sports categories, such as football coaches, volleyball coaches, etc. Alternatively, studies could examine the competencies of other personnel related to sports, such as sports referees and sports team managers, especially in the context of international schools in Thailand. The study's findings are based solely on data from Thai international schools, limiting cross-cultural generalizability. The limitation of this research is that data collection was conducted only with international schools in Thailand. Future recommendations suggest that data collection should be conducted with international schools across different countries.

Declarations

Author Contributions. Thitipong Sukdee: Conceptualization, Literature review, Creating tools for Research, Methodology, Data collection, Data analysis, Methodology, Corresponding author editing, and manuscript preparation. Panuwat Sriwan: Literature review, Create tools for Research, Data collection. All authors have read and approved the final version of the article for publication.

Conflicts of Interest. The authors declare no conflict of interest.

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Ethical Approval. The researcher clearly explained the purpose and procedures of the study to the participants and obtained consent from the sample by selecting the group that met the research objectives. The researcher submitted an ethics request for a research project involving human subjects, which was reviewed by the Ethics Committee and licensed under Certificate No. EDU 033/2567. All subjects will be informed of the conditions and will voluntarily participate in the study. The researcher would explain the research details himself and give the participant a written consent form to sign, consenting to be a sample. The researcher protected the samples in accordance with their rights to be informed as research participants, i.e., obtaining sufficiently accurate information before deciding to participate in the research, using fictitious names instead of real names, and not

revealing the names of those involved or affecting the sample. All names were fictitious, and results were presented in conclusive form without affecting the sample.

Data Availability Statement. The data supporting the results reported in this study are available from the corresponding author upon reasonable request.

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References

Al-Jarrah, J.M. (2025). Teacher Stress andBurnout in Teaching English as a ForeignLanguage. *Educational Process: InternationalJournal, 18*, e2025430.https://doi.org/10.22521/edupij.2025.18.430

Al-Shehri, S. M. A., Albahiri, M. H., & Alhaj, A. A. M. (2025). Redefining Teaching Faculty Roles at King Khalid University in the Fifth Industrial Revolution: An Artificial Intelligence Perspective. *Educational Process: International Journal, 18*,e2025498.https://doi.org/10.22521/edupij.2025.18.498

Barros, K., Vuillemin, A., Rostan, F., Lemmonier, F., Guillemin, F., Tezier, B., & Van Hoye, A. (2025). Defining health promoting sports coaches skills: A systematic review. *International Journal of Sports Science & Coaching*, *20*(3), 1268-1286. https://doi.org/10.1177/17479541251320830

Berndt, A. (2022). The brand persona of a football manager–The case of Arsène Wenger. International *Journal of Sports Marketing and Sponsorship, 23*(1), 209-226. https://doi.org/10.1108/IJSMS-01-2021-0018

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences (2nd ed.)*. Routledge. https://doi.org/10.4324/9780203771587

Diamantopoulos, A. and Siguaw, J.A. (2000). *Introducing LISREL*. London: Sage Publications. https://doi.org/10.4135/9781849209359

Chankuna, D., & Sukdee, T. (2025). Innovative Performance Evaluation of Personal Fitness Trainer: Rating Scale Development of Performance Index. *The Open Sports Sciences Journal, 18*(1), 1-7, https://doi.org/10.2174/011875399X378003250517182857

Churchville, A. L. (2025). Supporting Gifted and Twice-Exceptional Learners in International Schools: Strategies for Inclusion and Holistic Development. In *Diversity and Inclusion Challenges for Leaders of International Schools* (pp. 183-224). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3373-0867-8.ch006

Dohsten, J., Barker-Ruchti, N., & Lindgren, E. C. (2020). Caring as sustainable coaching in elite athletics: *Benefits And challenges. Sports Coaching Review, 9*(1), 48-70. https://doi.org/10.1080/21640629.2018.1558896

Diller, S. J. (2024). Ethics in digital and AI coaching. *Human Resource Development International, 27*(4), 584–596. https://doi.org/10.1080/13678868.2024.2315928

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis (8th ed.)*. Cengage Learning Emea.

Higher Education Standards Committee. (2022). *Announcement of the Higher Education Standards Committee on the details of learning outcomes according to higher education qualification standards B.E. 2565*. (2022, September 4). Royal Thai Government Gazette. Volume 139, Special Section 212. Page 35.

Hodges, N. J., & Lohse, K. R. (2022). An extended challenge-based framework for practice design in sports coaching. *Journal of Sports Sciences, 40*(7), 754–768. https://doi.org/10.1080/02640414.2021.2015917

International Schools Association of Thailand. (2024). *ISAT Presents*. Retrieved from https://www.isat.or.th/

Jang, J., So, W. Y., Cho, N., & Shin, M. (2024). The Hierarchy of Sustainable Sports Coaching Competencies in Korea. *Sustainability, 16*(2), 718. https://doi.org/10.3390/su16020718

Jones, P., Jones, A., Williams-Burnett, N., & Ratten, V. (2017). Let's get physical: Stories of entrepreneurial activity from sports coaches/instructors. *The International Journal of Entrepreneurship and Innovation*, *18*(4), 219-230. https://doi.org/10.1177/14657503177418

Joreskog, Karl G.; & Sorbom. (1993). *LISREL 8 Structural Equation Modeling with the SIMPLIS Command Language.* Chicago: Scientific Software International. https://doi.org/10.4135/9781849209359

Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert Scale: Explored and Explained. *Current Journal of Applied Science and Technology, 7*(4), 396–403. https://doi.org/10.9734/BJAST/2015/14975

Jud, M., & Thalmann, S. (2025). AI in digital sports coaching – a systematic review. *Managing Sport and Leisure*, 1–17. https://doi.org/10.1080/23750472.2024.2449016

Kao, S. F., Hsieh, M. H., & Lee, P. L. (2017). Coaching competency and trust in coach in sport teams. *International Journal of Sports Science & Coaching*, *12*(3), 319-327. https://doi.org/10.1177/1747954117710508

Leeder, T. M. (2022). Behaviorism, Skinner, and Operant Conditioning: Considerations for Sport Coaching Practice. *Strategies, 35*(3), 27–32. https://doi.org/10.1080/08924562.2022.2052776

Lervold, K., Haugan, J. A., Østerås, M. G. O., & Moen, F. (2025). Exploration of Factors Predicting Sport Coaches' Perceived Performance. *Sports*, *13*(3), 83. https://doi.org/10.3390/sports13030083

Lyle, J., & Cushion, C. (2016). *Sport coaching concepts: A framework for coaching practice*. Routledge. https://doi.org/10.4324/9780203126424

Marek, P., Krawczyński, M., & Lenartowicz, M. (2025). The role of the coach developer in developing sports coaches' competencies. *Journal of Kinesiology and Exercise Sciences*, *35*(109), 48-57. https://doi.org/10.5604/01.3001.0054.8538

Martens, R., & Vealey, R. S. (2023). *Successful coaching*. Human kinetics.

McGuckin, M. E., Turnnidge, J., Bruner, M. W., Lefebvre, J. S., & Côté, J. (2022). Exploring youth sport coaches' perceptions of intended outcomes of leadership behaviours. *International Journal of Sports Science & Coaching, 17*(3), 463-476. https://doi.org/10.1177/17479541221076247

Ministry of Tourism and Sports. (2023). *The 7th National Sports Development Plan (2023-2027)*. Bangkok: Ministry of Tourism and Sports.

Mischenko, N. Y., Kolokoltsev, M., Vorozheikin, A., Romanova, E., Tarasov, A., Aganov, S., & Karpova, S. (2021). Media project to improve digital competencies of sports coaches. Journal of Physical Education and Sport, 21(6), 3527-3533. https://doi.org/10.7752/jpes.2021.06477

Nenko, Y., Medynskyi, S., Maksymchuk, B., Lymarenko, L., Rudenko, L., Kharchenko, S., ... & Maksymchuk, I. (2022). Communication training of future sports coaches in the context of neurophysiological patterns. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 13*(1), 42-60. https://doi.org/10.18662/brain/13.1/268

Novan, N. A., Hidayah, N., Erawan, B., Komarudin, K., Awwaludin, P. N., & Mustaqim, R. (2020, February). Implementation of life kinetic mental training method in order to improve the competency of coaches in psychological training for athletes. *In 4th International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2019)* (pp. 256-259). Atlantis Press. https://doi.org/10.2991/ahsr.k.200214.067

Office of the Permanent Secretary, Ministry of Tourism and Sports. (2019). Thailand National Sports University Act B.E. 2562. (2019, May 22). Royal Thai Government Gazette. Volume 136, Section 67 A. Pages 1-30.

Office of the National Economic and Social Development Council. (2023). *The 13th National Economic and Social Development Plan (2023-2027)* Royal Thai Government Gazette.

Orunbayev, A. (2023). Approaches, behavioral characteristics, principles and methods of work of coaches and managers in sports. *American Journal of Social Sciences And Humanity Research*, *3*(11), 133-151. https://doi.org/10.37547/ajsshr/Volume03Issue11-16

Schumacker, R. & Lomax, R. (2016). *A Beginner's Guide to Structural Equation Modeling 4th ed*. New York: Routledge. https://doi.org/10.4324/9781315749105

St. Andrews. (2024). *What is the International Baccalaureate (IB) curriculum in international schools?.* Retrieved from https://www.standrewssukhumvit.com/th/what-is-the-international-baccalaureate-ib-program-in-an-international-school/

The American School of Bangkok. (2023). *International School, American Curriculum or British Curriculum How to choose appropriately?*. Retrieved from https://www.asbsk.ac.th/th/article/british-vs-american-curriculum/

Topçu, Ç. (2025). *Coaching in Communication Research*. IGI Global. https://doi.org/10.4018/979-8-3693-7959-2

Wang, C. (2024). Physical Characteristics, Functional Movements and Coaching Style in Basketball. *Journal of Education and Educational Research,* *7*(3), 208-213. https://doi.org/10.54097/paxm0q53

Wang, C. (2024). Ethical Leadership of Basketball Coaches and Moral Development of Athletes: A Feasible Program for the Development of Sports Ethics. *Journal of Education and Educational Research, 8*(1), 165-177. https://doi.org/10.54097/9redtr70

Zandi, H. G., Zarei, S., Besharat, M. A., & Zadeh, A. B. (2021). Iranian coaches forgiveness and relationship quality to their athletes. *International Sport Coaching Journal*, *9*(1), 74-81. https://doi.org/10.1123/iscj.2020-0099

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