USFD Journal
of Physical Education Pedagogy and Sports Performance

Original Research Article

Development of Instructor's Manual for Physical Activity Towards Health and Fitness (PATHFit 2): Exercise-Based Fitness Activities

Alejandro L. Rayon
Lourdes College, Inc. | Camiguin Polytechnic State College
alejandro.rayon@lccdo.edu.ph

Received: May 2, 2025
Accepted: May 15, 2025
Published: June 30, 2025

USFD Journal Editors:

Oliver Napila Gomez, PhD
Mindanao State University
Marawi City

Alexander G. Dugan, MA TESOL
USFD PH OPC
Cagayan de Oro City

Cecille Napila Gomez
USFD PH OPC
Cagayan de Oro City

Abstract: Creating a well-crafted instructor's manual is both an art and a strategic response to educational disparities. This study presents the development and evaluation of a contextualized PATHFIT-2 Instructor's Manual designed to support the effective implementation of Exercise-Based Fitness Activities in rural higher education institutions in the Philippines, particularly in Camiguin Island. Addressing significant challenges such as inadequate facilities, limited access to updated instructional materials, and a lack of inclusive pedagogical strategies, the manual offers a structured, culturally responsive, and adaptable resource aligned with the Commission on Higher Education's Memorandum Order No. 39, Series of 2021. Grounded in the Technological Pedagogical Content Knowledge (TPCK) framework and Universal Design for Learning (UDL), the manual was designed using the Successive Approximation Model (SAM) and underwent expert validation. The manual features modular content, traditional Filipino games, QR-coded demonstrations, and inclusive assessment tools designed to cater to diverse learners. Evaluation results revealed high ratings in pedagogical design, contextual relevance, and assessment alignment, with recommendations for deeper theoretical integration and the development of reflective practice. This study contributes to sustainable and equitable PE instruction in resource-constrained environments and aligns with the Sustainable Development Goal (SDG). It advocates for capacity-building among educators, improved learner outcomes, and standardized PE delivery through inclusive and context-sensitive instructional design.

Keywords: PATHFit 2, instructor's manual, physical education, rural higher education, instructional design, inclusive pedagogy

Introduction

In the contemporary higher education landscape, the development and use of structured instructional manuals are increasingly recognized as essential tools for supporting effective pedagogy, particularly in skills-based disciplines such as Physical Education (PE). Despite widespread acknowledgment of their value, the reliance on experience-based approaches to teaching persists, rather than relying on standardized guides. While this flexibility allows for responsiveness to unique classroom dynamics (Gao & Zhang, 2020; Zhu, 2021), it often results in inconsistencies in instructional quality and misalignment with institutional and national standards (Alamri, 2023; Paudel, 2020).

Instructional manuals provide a crucial framework to address this gap. In the context of this study, this foundational role of manuals justifies the development of a standardized, validated instructional guide tailored for PATHFit 2 instructors. They enhance teaching effectiveness by aligning content with defined objectives, supporting diverse learners, and facilitating

professional collaboration (Couch *et al.*, 2023; Martin *et al.*, 2020; Zhu, 2021). Moreover, structured manuals reduce instructional ambiguity and enhance transparency, ultimately benefiting both students and instructors by creating a predictable and equitable learning environment and supporting consistent evaluation standards (Shin, 2024; Schussler *et al.*, 2021). In the Philippine context, particularly after the disruptions caused by the COVID-19 pandemic, the need for standardized resources became more pronounced (Malabanan *et al.*, 2022; Talimodao & Madrigal, 2021). National efforts, including the Results-Based Performance Management System (RPMS) and the Philippine Professional Standards for Teachers (PPST), reflect the increasing institutional commitment to structured instructional support (Torres *et al.*, 2024).

This study focuses on the development of a validated instructor's manual for PATHFit 2: Exercise-Based Fitness Activities, a core course mandated by the Commission on Higher Education (CHED, 2021) under Memorandum Order No. 39, s. 2021. PATHFit 2 aims to promote lifelong fitness habits among tertiary students through structured, evidence-based physical training. However, the absence of standardized instructional guides leads to inconsistent teaching methodologies. This inconsistency contributes to significant disparities in student learning outcomes, as evidenced by studies linking structured teacher development and clear instructional design to improved educational effectiveness (Fadil & Aryani, 2021; Kintu *et al.*, 2017; Steinert *et al.*, 2006; Zeitlin, 2020)., as evidenced by studies linking structured teacher development and clear instructional design to improved educational effectiveness. Without unified guidelines, teachers often rely on disparate approaches, resulting in pedagogical gaps and reduced alignment with learning objectives (Okanlawon, 2022; Ouchen *et al.*, 2023).

This study proposes a manual that addresses current instructional challenges by integrating the Technological Pedagogical Content Knowledge (TPACK) framework and the Universal Design for Learning (UDL) model. TPACK offers educators a comprehensive understanding of how content, pedagogy, and technology intersect to support effective and responsive teaching practices (Annazar, 2023; Koehler & Mishra, 2008; Valtonen *et al.*, 2020; Zhang & Tang, 2021). Meanwhile, UDL enhances instructional inclusivity by promoting flexible approaches to engagement, representation, and expression, ensuring all learners can access and participate meaningfully in the learning process (CAST, 2024; Frolli *et al.*, 2023; Lieberman *et al.*, 2024; Wells, 2024). The manual is designed to be dynamic, incorporating these pedagogical frameworks, and serves as a CHED-aligned resource that empowers tertiary-level physical education instructors to deliver equitable and adaptable instruction.

Developed using the Successive Approximation Model (SAM), the manual follows a process of iterative design, expert validation, and systematic refinement to ensure academic integrity and contextual suitability. As a flexible instructional design framework, SAM emphasizes collaboration, feedback-driven development, and continuous enhancement of learning materials (Almekhlafi, 2020; Palupi, 2024). Its cyclical nature supports adaptability and learner engagement, with demonstrated effectiveness in diverse settings, including virtual education, higher education, and professional training (Evanick, 2024; Raman *et al.*, 2021; Sinha *et al.*, 2021). This study aims to strengthen PE instruction, promote inclusive access, and standardize teaching practices across different educational environments. However, due to time constraints on the part of the researcher, the implementation and evaluation phases of the model were not included in this study.

In the context of Camiguin Island—a geographically isolated province with limited access to continuous professional development—this study bears significant educational and social value. For instructors, the PATHFit 2 manual offers an accessible, standardized, and context-responsive tool that enhances instructional quality regardless of resource disparities. For institutions, it provides a mechanism for aligning their fitness education programs with national mandates such as CHED Memorandum No. 39, s. 2021, and supports the implementation of consistent and equitable pedagogical standards. Moreover, the manual encourages community-wide promotion of health literacy and lifelong fitness, such as by fostering habits that reduce preventable illnesses and enhance overall well-being, especially important in rural island settings.

Additionally, this initiative directly aligns with the United Nations Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 10 (Reduced Inequalities). The study addresses systemic instructional gaps, promotes health-enhancing behaviors among students, and supports the broader goal of inclusive education in underserved communities. The development of this manual represents an essential and timely response to the pressing need for standardized and inclusive PE instruction, contributing meaningfully to both national and global education and public health agendas.

Methodology

This study employed Design and Development Research (DDR) to create and validate an instructor's manual for PATHFit 2: Exercise-Based Fitness Activities. DDR is a methodological approach that combines theoretical insight with practical problem-solving to develop and refine educational interventions (McKenney & Reeves, 2020). Specifically, this research followed SAM proposed by Allen (2016), which emphasizes iterative cycles of design, feedback, and refinement.

The methodology consisted of two phases: (1) *Preparation and Planning* and (2) *Iterative Design and Development*. The third phase in the SAM process, *Implementation and Evaluation*, was excluded from this study due to time constraints. During the first phase, surveys and focus group discussions (FGDs) were conducted among Physical Education instructors from a rural higher education institution in Camiguin to assess existing instructional practices and determine alignment gaps in the current PATHFit 2 course delivery. Document analysis of CHED Memorandum Order No. 39, s. 2021 and institutional policies also informed its content.

The second phase involved the initial drafting of the instructor's manual based on the findings from Phase 1 and the integration of pedagogical theories (TPACK and UDL). Prototypes were created and improved through several cycles of expert review. Three experts—one from the CHED Region 10, one institutional Vice President for Academic Affairs (VPAA) from Camiguin Island, and one PE professor, who is also a VPAA from a nearby community college—provided detailed feedback. Comments were recorded, and revisions were applied accordingly until no further critical feedback was received, indicating content saturation.

Still part of the iterative design and development process, the expert reviewers evaluated the refined manual using a rating scale that assessed content clarity, pedagogical appropriateness, technological integration, and alignment with CHED standards. Both qualitative and quantitative feedback were analyzed to finalize the manual. The ethical standards of research, including voluntary participation, informed consent, and data confidentiality, were observed throughout the process. This methodological rigor ensured the development of a standardized, practical, and inclusive PATHFit 2 instructor's manual grounded in evidence and national educational mandates.

Results

The results of this study are presented in alignment with the Design and Development Research (DDR) framework, specifically following the *Preparation* and *Iterative Design Phases* of the SAM. Due to time constraints on the part of the researcher, the *Implementation and Evaluation* were excluded. The study aimed to develop a context-responsive, pedagogically sound, and CHED-aligned *PATHFit 2 Instructor's Manual* that could address instructional gaps in tertiary-level physical education. The outcomes are detailed in the following three tables: (1) the prototype description, (2) expert evaluation ratings, and (3) expert feedback and enhancement recommendations.

Table 1 outlines the prototype design of the *PATHFit 2 Instructor's Manual*, presenting key recommendations and their corresponding components aimed at enhancing instructional quality and contextual relevance (*see p. 62*). The manual begins with a preface that articulates its purpose, intended users, and alignment with local settings. Course content is introduced through clearly defined objectives and intended learning outcomes (ILOs) that reflect CHED standards and national fitness goals. Inclusivity and contextual sensitivity are emphasized through guidelines for rural adaptation, community engagement, and safety protocols. A modular 18-week instructional plan is provided, offering structured yet flexible delivery formats, including asynchronous options. To sustain engagement and address classroom challenges, the manual incorporates inclusive pedagogical strategies and culturally relevant learning materials, such as traditional Filipino fitness games and QR-linked exercises. Additionally, the manual integrates outcome-based assessment tools—including rubrics, self-assessments, peer assessments, and pre- and post-tests—while prioritizing student safety and instructional clarity. Supporting features include a glossary of fitness terms and a full APA-formatted reference list to ensure academic rigor.

Table 2 presents the expert evaluation report of the prototype manual, assessing five key domains: (1) pedagogical strategies and instructional design, (2) teacher professional development and support, (3) formative and summative assessments, (4) reflective teaching practices, and (5) overall usability and alignment with educational standards (*see p. 62*). Across all 25 indicators, the manual received consistently high ratings, with a majority categorized as *very good* (Mean = 4.67, SD = 0.58). These include aligning lesson plans with curriculum objectives, utilizing active learning strategies, implementing differentiated instruction,

and employing assessment practices based on learning outcomes. Other positively rated areas include strategies for inclusive teaching, motivational techniques, and student-centered learning. A few indicators received *good* ratings, particularly in relation to the integration of theoretical perspectives and professional self-assessment tools. Overall, the evaluation confirmed the manual's clarity, usability, and effectiveness as an instructional resource, affirming its potential to enhance teaching quality in tertiary PE settings.

Table 3 summarizes the qualitative reviews and recommendations provided by experts for further refinement of the manual (*see p. 64*). For the preliminary pages, suggestions included professional formatting of author and reviewer details, explicit alignment with CHED Memorandum Order No. 39, s. 2021, and the inclusion of a liability disclaimer and improved structural organization. In Chapter 1, experts recommended reordering subtopics for better instructional flow and avoiding abbreviated technical jargon. Chapter 2 was advised to adopt a complete Outcome-Based Education (OBE) format and incorporate adaptive PE activities, traditional games, and collaboration strategies. Feedback for Chapter 3 emphasized the need for functional categorization of workouts, visual enhancements, and safety guidelines. Chapter 4 was recommended to include common PE terms with definitions in student-friendly language. Chapter 5 required more straightforward integration of teaching activities within the OBE syllabus format, while Chapter 6 was enhanced with reflection prompts, assessment domains, and reminders to prioritize safety and inclusion. Collectively, these insights contributed to strengthening the manual's content structure, pedagogical coherence, and practical applicability.

Discussion

Delivering PATHFit 2 in rural colleges faces major barriers, including limited facilities, inconsistent schedules, low student motivation, and a lack of inclusive training. These structural issues hinder effective PE instruction and highlight the need for adaptive, standardized resources (Fang, 2022; Koricich *et al.*, 2020). Instructors also reported challenges in accessing updated teaching materials and professional development, often leading to reliance on outdated or improvised practices (Chen *et al.*, 2023; Hong, 2023). Health-related student needs further compound these difficulties. Safe and inclusive instruction remains a concern, with classes frequently held in unsuitable environments (Susanti *et al.*, 2020; Urien & E, 2024).

To address these issues, instructors employ culturally responsive strategies—such as traditional Filipino games—to enhance engagement and continuity of learning (Leibold *et al.*, 2022; Taneri & Özbek, 2023). However, without proper guidance and resources, these efforts remain fragmented. Literature supports the integration of adaptive physical education (APE) and inclusive training tools as essential for student development, especially for learners with disabilities (Guo *et al.*, 2022; Subroto *et al.*, 2021). This context highlights the importance of developing a research-based, flexible, and inclusive PATHFit 2 instructor's manual that aligns with national standards.

The PATHFit 2 Instructor's Manual was designed based on feedback from rural PE instructors. Key design features include a clearly defined purpose, alignment with CHED standards, and adaptability to various school environments (Bull *et al.*, 2020; Ndabezitha, 2024). An 18-week modular format supports asynchronous learning amid disruptions (Tolentino & Sinio, 2024).

The manual emphasizes culturally responsive and inclusive teaching, integrating traditional games and improvised tools for schools with limited facilities (Buch *et al.*, 2023). It includes print-based guides, QR-coded demonstrations, and assessment tools aligned with OBE principles. Special focus is given to inclusivity and safety, offering options for learners with physical challenges and ensuring teacher preparedness through structured rubrics and peer/self-assessments (Burhaeın *et al.*, 2024; Guo *et al.*, 2022).

Expert review, conducted using the SAM, confirmed the PATHFit 2 manual as a pedagogically sound and inclusive resource for rural PE contexts. Reviewers consistently rated pedagogical design, instructional coherence, cultural responsiveness, and structured assessment tools highly (M = 4.67), supporting claims from Aelterman *et al.* (2019) and Vasconcellos *et al.* (2020) that well-structured, student-centered approaches improve motivation and learning in PE. Multimedia components scored moderately (M = 4.33), reflecting technological limitations in rural areas (Hakiki *et al.*, 2023; Yu, 2024).

Support for teacher usability was affirmed, but reviewers emphasized the need for deeper integration of pedagogical theories and reflective tools to promote continuous professional development (Afandi & Ratno, 2022; Kalajas-Tilga *et al.*, 2020). The manual's alignment with CHED standards and OBE principles also received strong endorsement, affirming its contextual relevance and readiness for implementation.

Final expert feedback refined the manual's structure and clarity, aligning it with recognized instructional design principles (Wiggins & McTighe, 2005). Preliminary sections were enhanced to reflect CHED compliance and academic credibility. Experts advised reorganizing chapters to strengthen logical progression, particularly in the articulation of goals, terminology consistency, and the inclusion of adaptive strategies tailored to varied school contexts (Bull *et al.*, 2020).

The application of Outcome-Based Education (OBE) was further deepened, integrating reflection prompts and scenario-based assessments to support metacognition and real-world application (Arribas *et al.*, 2021). Culturally embedded elements such as traditional games, cooperative activities, and visual learning tools supported inclusive education practices, in line with Universal Design for Learning (UDL) principles (Kalajas-Tilga *et al.*, 2020; Lieberman *et al.*, 2024). These refinements collectively strengthen the manual's pedagogical alignment, cultural responsiveness, and functional utility for rural PE instruction.

Conclusion

This study sought to develop and refine a contextually grounded PATHFit 2 prototype instructor's manual tailored for higher education institutions in rural areas, particularly under resource-constrained conditions. Guided by the SAM framework, the research employed a multi-phase process involving preliminary surveys, focus group discussions (FGDs), literature review integration, iterative design, and expert feedback. The alignment analysis revealed that while instructors recognized the value of CHED-aligned learning outcomes, content delivery and assessment strategies were inconsistently implemented due to contextual limitations such as facility constraints and low student engagement.

Drawing from these insights, the proposed manual emphasized practical adaptability, localized content, and student-centered strategies that are feasible in rural settings. Feedback from CHED and institutional experts affirmed the relevance, accuracy, and usability of the manual, while also recommending refinements in legal alignment, instructional clarity, and cultural contextualization. The final recommended version of the PATHFit 2 manual responds to both pedagogical and logistical challenges faced by instructors in underserved settings.

Ultimately, this study highlights the importance of developing instructional resources that are both academically sound and contextually realistic. The PATHFit 2 manual contributes to the broader mission of fostering active, inclusive, and health-promoting learning environments in Philippine higher education.

In light of the findings and conclusions of this study, it is recommended that higher education institutions formally adopt the finalized PATHFit 2 instructor's manual as a standard reference to ensure curriculum alignment with CHED Memorandum Order No. 39, Series of 2021, and to promote uniformity in instructional delivery across campuses, particularly in rural areas. PE instructors are encouraged to participate in regular capacity-building programs focused on the manual's pedagogical framework, instructional strategies, and assessment tools, with emphasis on integrating the FITT principle and accessible exercise-based activities. Curriculum developers and PE coordinators may contextualize the manual's contents to suit local teaching environments, adapting strategies based on facility availability, learner diversity, and community health needs. Program implementers and school administrators may establish continuous feedback mechanisms, such as semester-end focus groups or teaching reflections, to evaluate the manual's usability and inform iterative improvements. Finally, future researchers are advised to extend implementation studies across diverse institutional contexts and investigate the manual's long-term effects on student fitness outcomes, instructional quality, and satisfaction with the PATHFit 2 course.

Conflict of Interest: *The author declares that there is no conflict of interest regarding the publication of this article.*

Acknowledgements: *The researcher extends his heartfelt gratitude to his mentor, research panel members, expert reviewers, colleagues, and institutions whose support, critiques, and encouragement refined and empowered this work. Special thanks to my family, friends, and loved ones for their unwavering love, patience, and belief in me throughout this endeavor.*

Funding: *This research received no external funding and was supported solely by the personal resources of the primary author.*

Ethical Approval: *The study was reviewed and approved by the Institutional Ethics Committee of the researcher's academic institution, in accordance with the ethical standards outlined in the Belmont Report. Informed consent was obtained from student participants, ensuring full ethical compliance.*

AI Declaration: *This study utilized artificial intelligence tools to assist in preparing this article. Specifically, ChatGPT was used to convert the full thesis manuscript into a reduced journal article format with human supervision and editing, ensuring academic rigor and integrity. Additionally, Grammarly AI was used to enhance the language quality, clarity, and tone of the final manuscript. The author carefully reviewed and edited all outputs to maintain scholarly standards.*

Data Availability Statement: *The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request. Requests for access will be evaluated in accordance with ethical guidelines and data privacy policies.*

References

Aelterman, N., Vansteenkiste, M., Van Keer, H., Van den Berghe, L., De Meyer, J., & Haerens, L. (2019). Students' objectively measured physical activity levels and engagement as a function of between-class and between-student differences in motivation toward physical education. *Journal of Sport and Exercise Psychology, 34*(4), 457–480. https://doi.org/10.1123/jsep.34.4.457

Afandi, A., & Ratno, R. (2022). Genally application development in adaptive physical education learning courses in the independent curriculum. *Jumora Jurnal Moderasi Olahraga, 2*(2), 188–198. https://doi.org/10.53863/mor.v2i2.518

Alamri, H. (2023). Instructors' self-efficacy, perceived benefits, and challenges in transitioning to online learning. *Education and Information Technologies, 28*(11), 15031–15066. https://doi.org/10.1007/s10639-023-11677-w

Allen, M. W. (2016). *Michael Allen's guide to e-learning: Building interactive, fun, and effective learning programs for any company* (2nd ed.). Wiley

Almekhlafi, A. (2020). Designing and creating digital interactive content framework: Description and evaluation of the Almekhlafi digital interactive content model. *Science Education International, 31*(2), 130–141. https://doi.org/10.33828/sei.v31.i2.1

Annazar, M. F. Y., Firdaus, R., & Andra, D. (2023, May). Technology pedagogical content knowledge (TPACK): An analysis of ability of elementary school teacher. In *4th International Conference on Progressive Education 2022 (ICOPE 2022)* (pp. 669-684). Atlantis Press.https://doi.org/10.2991/978-2-38476-060-2_61

Arribas, D., Martínez-Moreno, A., & García-Sanz, M. (2021). Effects of reflective practice on the development of personal and professional competencies in physical education teacher education. *International Journal of Environmental Research and Public Health, 18*(16), 8399. https://doi.org/10.3390/ijerph18168399

Buch, B., Gissel, S., Oksbjerg, M., Kjeldsen, K., & Albrechtsen, T. (2023). A systematic review of research on teachers' guides. *Learning Tech, 7*(12), 12–40. https://doi.org/10.7146/lt.v7i12.132330

Bull, F. C., Al-Ansari, S. S., Biddle, S. J. H., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J.-P., Chastin, S. F. M., Chou, R., Dempsey, P. C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., Lambert, E. V., Leitzmann, M., Milton, K., Ortega, F. B., Ranasinghe, C., Stamatakis, E., Tiedemann, A., Troiano, R. P., van der Ploeg, H. P., Wari, V., & Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine, 54*(24), 1451–1462. https://doi.org/10.1136/bjsports-2020-102955

Burhaeın, E., Pratidina, A., Putri, A., Samudra, I., Wardani, L., & Pratama, R. (2024). The implementation of adapted physical education at the end of the pandemic: A learning evaluation. *Jurnal Pendidikan Jasmani Dan Olahraga, 9*(1), 1–11. https://doi.org/10.17509/jpjo.v9i1.66588

CAST. (2024). *Universal Design for Learning Guidelines Version 3.0*. https://udlguidelines.cast.org

Commission on Higher Education (CHED). (2021). *CHED Memorandum Order No. 39, Series of 2021*. Commission on Higher Education.

Chen, Y., Liu, X., Shao, P., & Yuan, H. (2023). Analysis of the factors influencing the participation of university students in rural education for poverty alleviation. *Journal of Contemporary Educational Research, 7*(12), 92–99. https://doi.org/10.26689/jcer.v7i12.5715

Couch, B. A., Prevost, L. B., Stains, M., Whitt, B., Marcy, A. E., Apkarian, N., Dancy, M. H., Henderson, C., Johnson, E., Raker, J. R., Yik, B. J., Earl, B., Shadle, S. E., Skvoretz, J., & Ziker, J. P. (2023). Examining whether and how instructional coordination occurs within introductory undergraduate STEM courses. *Frontiers in Education, 8*. https://doi.org/10.3389/feduc.2023.1156781

Evanick, J. (2024). Transferable best practices and mutual learning opportunities between instructional design in higher education and the corporate world. *International Journal of Advanced Corporate Learning (iJAC), 17*(2), 63–75. https://doi.org/10.3991/ijac.v17i2.45555

Fadil, A., & Aryani, I. (2021). Improvement of teacher pedagogical competence through in house training activities. *Dinamika Jurnal Ilmiah Pendidikan Dasar, 13*(2), 89. https://doi.org/10.30595/dinamika.v13i2.11551

Fang, L. (2022). Construction of physical education quality evaluation index and analysis with wearable device. *Computational Intelligence and Neuroscience, 2022*, 1–9. https://doi.org/10.1155/2022/1190394

Frolli, A., Cerciello, F., Esposito, C., Ricci, M., Laccone, R., & Bisogni, F. (2023). Universal design for learning for children with ADHD. *Children, 10*(8), 1350. https://doi.org/10.3390/children10081350

Gao, L., & Zhang, L. (2020). Teacher learning in difficult times: Examining foreign language teachers' cognitions about online teaching to tide over COVID-19. *Frontiers in Psychology, 11*, 549653. https://doi.org/10.3389/fpsyg.2020.549653

Guo, K., Ma, Q., Yao, S., Liu, C., Hui, Z., Chen, H., & Pengfei, W. (2022). The relationship between empowering motivational climate in physical education and social adaptation of senior high school students: An analysis of chain mediating effect. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.854279

Hakiki, M., Hidayatullah, F., & Umar, F. (2023). Implementation of adaptive physical education at the inclusive organizing school in Martapura district. *Qalamuna Jurnal Pendidikan Sosial Dan Agama, 15*(2), 687–694. https://doi.org/10.37680/qalamuna.v15i2.2879

Hong, Z. (2023). Strategies for enhancing the resilience of rural teachers from the perspective of Chinese rural school principals, in the post-pandemic period. *Environment and Social Psychology, 8*(3), 1-11. https://doi.org/10.54517/esp.v8i3.1963

Kalajas-Tilga, H., Koka, A., Hein, V., Tilga, H., & Raudsepp, L. (2020). Motivational processes in physical education and objectively measured physical activity among adolescents. *Journal of Sport and Health Science, 9*(5), 462–471. https://doi.org/10.1016/j.jshs.2019.06.001

Kintu, M., Zhu, C., & Kagambe, E. (2017). Blended learning effectiveness: The relationship between student characteristics, design features and outcomes. *International Journal of Educational Technology in Higher Education, 14*(1), 1-20. https://doi.org/10.1186/s41239-017-0043-4

Koehler, M. J., & Mishra, P. (2008). Introducing TPCK. In AACTE Committee on Innovation and Technology (Ed.), *The handbook of technological pedagogical content knowledge (TPCK) for educators* (pp. 3–29). Routledge.

Koricich, A., Tandberg, D., Bishop, B., & Weeden, D. (2020). Doing the same (or more) with less: The challenges regional public universities face in serving rural populations. *New Directions for Higher Education, 2020*(190), 59–70. https://doi.org/10.1002/he.20367

Leibold, N., Schwarz, L., & Gordon, D. (2022). Culturally responsive teaching in nursing education: A faculty development project. *Creative Nursing, 28*(3), 154–160. https://doi.org/10.1891/cn-2021-0044

Lieberman, L. J., Bean, L., & Grenier, M. (2024). Developing a Universal Design for Learning pedagogy: Perspectives of students with and without disabilities. *Journal of Teaching in Physical Education*, *1*(aop),1–10. https://doi.org/10.1123/jtpe.2024-0015

Malabanan, J., Briones, E., & Madrideo, J. (2022). Pre-service teachers' readiness on online learning and their 21st-century pedagogical skills. *International Journal of Educational Management and Development Studies, 3*(3), 65–83. https://doi.org/10.53378/352909

Martin, F., Wang, C., & Sadaf, A. (2020). Facilitation matters: Instructor perception of helpfulness of facilitation strategies in online courses. *Online Learning, 24*(1), 28-49. https://doi.org/10.24059/olj.v24i1.1980

McKenney, S., & Reeves, T. (2020). Educational design research: Portraying, conducting, and enhancing productive scholarship. *Medical Education, 55*(1), 82–92. https://doi.org/10.1111/medu.14280

Ndabezitha, L. (2024). Guided play as a pedagogical tool for the early grades. *South African Journal of Childhood Education, 14*(1), a1345. https://doi.org/10.4102/sajce.v14i1.1345

Okanlawon, A. (2022). Analysis of intellectual demands embodied in the learning objectives prescribed for mathematics and science components of the teacher training manual. *International Journal on Research in STEM Education, 4*(1), 64–82. https://doi.org/10.31098/ijrse.v4i1.775

Ouchen, L., Tifroute, L., & Hariri, K. (2023). Emotional competency in teaching: A qualitative study of practices among preschool and elementary school teachers. *International Journal of Learning, Teaching and Educational Research, 22*(6), 459–474. https://doi.org/10.26803/ijlter.22.6.24

Palupi, T. (2024). Developing a learning management system for critical literacy course: A need analysis. *Bahasa dan Seni: Jurnal Bahasa, Sastra, Seni dan Pengajarannya, 51*(1), Article 7. https://doi.org/10.17977/um015v51i12023p91

Paudel, P. (2020). Online education: Benefits, challenges and strategies during and after COVID-19 in higher education. *International Journal on Studies in Education, 3*(2), 70–85. https://doi.org/10.46328/ijonse.32

Raman, K., Othman, A., Idris, M., & Muniady, V. (2021). Students' satisfaction on the design of kawaii style pedagogical agent in the virtual learning environment. *International Journal of Academic Research in Progressive Education and Development, 10*(2). https://doi.org/10.6007/ijarped/v10-i2/9592

Schussler, E., Weatherton, M., Musgrove, M., Brigati, J., & England, B. (2021). Student perceptions of instructor supportiveness: What characteristics make a difference? *CBE—Life Sciences Education, 20*(2), ar29. https://doi.org/10.1187/cbe.20-10-0238

Shin, Y. (2024). Pedagogical competence analysis based on the TPACK model: Focus on VR-based survival swimming instructors. *Education Sciences, 14*(5), 460. https://doi.org/10.3390/educsci14050460

Sinha, T., Kapur, M., West, R., Catasta, M., Hauswirth, M., & Trninić, D. (2021). Differential benefits of explicit failure-driven and success-driven scaffolding in problem-solving prior to instruction. *Journal of Educational Psychology, 113*(3), 530–555. https://doi.org/10.1037/edu0000483

Steinert, Y., Mann, K., Centeno, A., Dolmans, D., Spencer, J., Gelula, M., & Prideaux, D. (2006). A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Medical Teacher, 28*(6), 497–526. https://doi.org/10.1080/01421590600902976

Subroto, R., Hikmawati, L., Lestari, T., Surtikanthi, N., Fatmawati, R., Akhsanitaqwim, Y., & Sugini, S. (2021). The implementation of adaptive physical education program for blind students at SMP Modern Islamic School Surakarta. *IJDS Indonesian Journal of Disability Studies, 8*(01), 95–104. https://doi.org/10.21776/ub.ijds.2021.008.01.07

Susanti, T., Damris, D., Maison, M., & Tanti, T. (2020). Learning environment and motivation in junior high school. *Universal Journal of Educational Research, 8*(5), 2047–2056. https://doi.org/10.13189/ujer.2020.080542

Talimodao, A., & Madrigal, D. (2021). Printed modular distance learning in Philippine public elementary schools in time of COVID-19 pandemic: Quality, implementation, and challenges. *Philippine Social Science Journal, 4*(3), 19–29. https://doi.org/10.52006/main.v4i3.391

Taneri, P., & Özbek, Ö. (2023). Promoting diversity and culturally responsive pedagogy in higher education. *Uluslararası Türk Eğitim Bilimleri Dergisi, 2023*(21), 765–813. https://doi.org/10.46778/goputeb.1333036

Tolentino, J. C. G., & Sinio, C. D. (2024). Implementation of the revitalized tertiary physical education program in a higher education institution in Pampanga grounded on the statutory policy of the Commission on Higher Education and UNESCO's quality physical education model. *International Journal of Multidisciplinary Applied Business and Education Research, 5*(2), 488–512. https://doi.org/10.11594/ijmaber.05.02.11

Torres, M. V., Zerrudo, A. P., Labad, V. S., & Gabales, B. G. (2024). Teachers' views on the conduct of class observation: The Philippine DepEd setting. *International Journal of Instruction, 17*(3), 453–474. https://doi.org/10.29333/iji.2024.17325a

Urien, J., & E, S. (2024). Students' motivation to learn: Is the learning environment of secondary schools a factor in Delta State? *International Journal of Research Publication and Reviews, 5*(3), 672–680. https://doi.org/10.55248/gengpi.5.0324.0626

Valtonen, T., Leppänen, U., Hyypiä, M., Sointu, E., Smits, A., & Tondeur, J. (2020). Fresh perspectives on TPACK: Pre-service teachers' own appraisal of their challenging and confident TPACK areas. *Education and Information Technologies, 25*(4), 2823–2842. https://doi.org/10.1007/s10639-019-10092-4

Vasconcellos, D., Parker, P., Hilland, T., Cinelli, R., Owen, K., & Lonsdale, C. (2020). Self-determination theory applied to physical education: A systematic review and meta-analysis. *Journal of Educational Psychology, 112*(7), 1444–1469. https://doi.org/10.1037/edu0000420

Wells, M. (2024). Enhancing accessibility and learning outcomes in higher education: The role of Universal Design for Learning in digital formats. *Journal Plus Education, 35*(2), 285–292. https://doi.org/10.24250/jpe/2/2024/mbw/

Wiggins, G., & McTighe, J. (2005). *Understanding by design* (2nd ed.). ASCD.

Yu, Z. (2024). Exploration of the necessity of promoting bodybuilding and fitness courses in colleges and universities under multimedia technology. *Applied Mathematics and Nonlinear Sciences, 9*(1). https://doi.org/10.2478/amns-2024-1974

Zeitlin, A. (2020). Teacher turnover in Rwanda. *Journal of African Economies, 30*(1), 81-102. https://doi.org/10.48550/arxiv.2009.13091

Zhang, W., & Tang, J. (2021). Teachers' TPACK development: A review of literature. *Open Journal of Social Sciences, 9*(7), 367–380. https://doi.org/10.4236/jss.2021.97027

Zhu, M. (2021). Medical and public health instructors' perceptions of online teaching: A qualitative study using the technology acceptance model 2. *Education and Information Technologies, 27*(2), 2385–2405. https://doi.org/10.1007/s10639-021-10681-2

Table 1

Prototype Description of PATHFit 2 Instructor's Manual

Key Recommendations	Proposed Components
Clearly define the manual's purpose and contextual applicability	Preface detailing scope, users, and relevance to local settings
Align course content with CHED outcomes and fitness goals	Introduction to the course, objectives, intended learning outcomes (ILOs), and significance of fitness education
Adapt instruction to rural contexts and promote inclusive, safe PE practices	Guidelines for localized teaching, safety protocols, and community involvement
Provide a modular, structured, and flexible implementation plan	18-week modular plan with asynchronous delivery options
Address classroom disruptions and sustain student motivation	Pedagogical strategies for inclusive, engaging, and motivational instruction
Offer diverse, visual, and culturally grounded learning materials	Exercise guides, QR-linked activities, and traditional Filipino fitness games
Include outcome-based and flexible assessment tools	Pre/post-tests, rubrics, self/peer assessments, and templates aligned to OBE
Prioritize safety, especially in limited or non-specialized environments	Injury prevention tips, warm-up/cool-down activities, and small-space adaptations
Support clarity and academic rigor	Glossary of fitness terms and a complete APA-formatted reference list

Table 2

Experts Evaluation Report of the PATHFit 2 Instructor's Manual

Indicators	Mean	SD	Description
I. Pedagogical Strategies and Instructional Design			
1. The guide provides structured lesson plans and activities that align with curriculum objectives.	4.67	0.58	Very Good
2. It offers clear and effective instructional strategies to facilitate student learning.	4.67	0.58	Very Good
3. The guide supports student engagement through active learning techniques (e.g., group work, discussions, hands-on activities).	4.67	0.58	Very Good
4. It encourages differentiated instruction to meet the diverse learning needs of students.	4.67	0.58	Very Good
5. The guide incorporates technology and multimedia resources to enhance teaching and learning.	4.33	0.58	Good
II. Teacher's Professional Development and Support			

1.	The guide provides clear, step-by-step instructional guidance for lesson implementation.	4.33	0.58	Good
2.	It equips teachers with best practices for effective classroom management.	4.33	0.58	Good
3.	The guide includes strategies for motivating and engaging students.	4.67	0.58	Very Good
4.	It offers professional insights on teaching strategies, subject matter expertise, and educational theories.	4	0	Good
5.	The guide integrates inclusive teaching approaches to accommodate diverse learners.	4.67	0.58	Very Good
III. Formative and Summative Assessments				
1.	The guide provides guidelines for implementing formative assessments to track student progress.	4.67	0.58	Very Good
2.	It includes well-structured summative assessments that align with learning objectives.	4.67	0.58	Very Good
3.	The guide offers clear rubrics, scoring guides, and grading criteria for student evaluation.	4.67	0.58	Very Good
4.	It ensures that assessments measure not just content knowledge but also skills and critical thinking.	4.33	0.58	Good
5.	The guide provides strategies for self-assessment and peer assessment to encourage student reflection.	4.33	0.58	Good
IV. Reflective Practices for Teachers				
1.	The guide encourages teachers to reflect on their teaching strategies for continuous improvement.	4.33	0.58	Good
2.	It provides opportunities for teachers to adjust lesson plans based on student feedback and learning outcomes.	4.67	0.58	Very Good
3.	The guide includes case studies, best practices, or real-world applications to help teachers refine their instruction.	4.33	0.58	Good
4.	It offers professional self-assessment tools to help teachers evaluate their teaching effectiveness.	4	1	Good
5.	The guide fosters a culture of continuous learning and adaptation in teaching.	4	0	Good
V. Overall Usability and Alignment with Educational Standards				
1.	The guide is well-organized, easy to navigate, and practical for instructional use.	4.67	0.58	Very Good
2.	It aligns with national and institutional curriculum standards.	4.67	0.58	Very Good
3.	The content is comprehensive, covering key concepts, teaching methodologies, and learning activities.	4.67	0.58	Very Good
4.	The guide effectively supports student-centered learning and real-world applications.	4.33	0.58	Good
5.	It enhances the overall teaching and learning experience, making lesson delivery more effective.	4.67	0.58	Very Good

Table 3

Reviews and Feedback of Experts to Enhance the PATHFit 2Prototype Manual

Chapter	Major Recommendations
Preliminary Pages	- Use professional formatting for author and reviewer names, including terminal degrees and affiliations. - Indicate the subject of CMO 39 s. 2021 and align the course title consistently with CHED standards. - Add a liability disclaimer and encourage adaptation based on local health and context. - - Group chapters into parts, include appendices, and restructure the inclusivity note for clarity.
Chapter 1	- Reorder subtopics for better instructional flow (Overview → Importance → Outcomes → Objectives). - Use non-abbreviated technical terms to increase clarity for readers unfamiliar with PE jargon.
Chapter 2	- Use OBE format including unit focus, teaching strategies, and assessments. - Add adaptive PE activities and elaborate on collaboration strategies and traditional games.
Chapter 3	- Apply OBE syllabus format; make workouts visual and categorize them by function with safety tips.
Chapter 4	- Add common PE technical terms and define them in student-friendly language.
Chapter 5	- Integrate teaching activities and instructional materials within the OBE syllabus section.
Chapter 6	- Include student reflection prompts, assessment domains, and reminders for safety and inclusion.