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Development and Validation of Learning While Intensifying Healthy Opportunities Through Kinetics (LIHOK) Active Games Handbook

Clarie Ann N. Servito [1]
1 – Sultan Kudarat State University, ACCESS Campus, EJC Montilla, Tacurong City, Region XII, Philippines

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Abstract

Physical activities are less prioritized in the new revised K-12 also known as MATATAG Curriculum in the Philippines due to the alarming standing of the country in PISA, reflecting poor performance in math, science, and reading. This study developed and validated printed instructional material called "Learning while Intensifying Healthy Opportunities through Kinetics" or LIHOK Active Games Handbook, to promote and integrate movements in other disciplines through different game-based physical activities that teachers and students can easily follow and use in class. The study conducted a survey among Grade 10 students in Rotonda National High School prior to the development of the book, to identify the adequacy and availability of instructional materials in the locale. After a series of statistical treatments, the handbook was developed for a structured validation by esteemed experts based on the IM's content, organization, mechanics, and overall package. Data analysis utilized descriptive and inferential statistics to determine its overall validity. The evaluation of the handbook indicated a very high extent of result in all indicators, confirming its potential as an effective learning material to offer healthy opportunities through movements, promote experiential learning. The study concluded that LIHOK Active Games Handbook is a promising instructional material to promote active learning. The use of this IM can change the point of view towards physical education. Further studies that will apply and test its result are recommended. Moreover, additional related studies to aid the instructional material scarcity resulting in poor academic performance in the country must be conducted.

Keywords: *LIHOK Active Games, instructional materials, physical education, game-based learning, MATATAG Curriculum*

INTRODUCTION

In the field of education, teaching styles constantly changed due to the dynamism of learners. Teaching and instruction had to flow with this evolution, having the same goal of preparing the learners for the real world. One of these major changes among students was the decrease of attention span brought about by the widespread use of gadgets and exposure to social media. Learners who were not interested did not

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exert much effort in doing their activities and other tasks in school. Active games, unlike other ordinary classroom activities, offered an exciting experience for a non-threatening learning environment where students could enjoy themselves without almost noticing that active learning was already happening. The idea of playing rather than studying invited learners to participate. Furthermore, when games were done with active movements, the more their benefits were maximized in terms of physical fitness, social well-being, affective growth, and emotional improvements.

Consequently, the education system faced new demands and challenges due to rapid changes and increased complexity of the world at present (Yam et al., 2016). Teaching and learning for the last decade had drastically changed, with the goal of addressing the dynamic 21st-century needs of the learners. For the past ten years, the Philippine education system had faced criticism due to the poor performance of Filipinos in global assessments. In 2018, the country was positioned last in the rankings given by the Program for International Student Assessment (PISA) in terms of reading comprehension, math, and science. In 2022, the World Bank revealed that around 91 percent of Filipino 10-year-olds struggled with basic reading comprehension (CPBRD, 2024). Similarly, assessments like the Southeast Asia Primary Learning Metrics (2019) also ranked the Philippines near the bottom compared to neighboring countries like Indonesia, Malaysia, and Vietnam (Bayaya, 2015).

In response to these educational challenges, physical learning—also referred to as 'tactile', 'hands-on', or 'kinesthetic learning'—linked the process of learning to physical activity. It was a learning style during which the learner had to feel or move in order to learn more effectively (Bay Atlantic University, 2024). In the Philippines, however, Physical Education was less prioritized in the curriculum. To revamp the Philippine education system, the MATATAG Curriculum was created, which aimed to focus on reading, mathematics, and learners' life skills (Singh, 2025). According to the DepEd Memorandum No. 054, s. 2023, the MATATAG Curriculum's pilot implementation aimed to improve the quality of basic education in the Philippines by focusing on foundational skills and decongesting the existing K-to-12 curriculum. The MATATAG Curriculum was set to be implemented in phases starting from School Year 2024–2025, covering various grade levels over several years. With this change, physical education became even more of a lesser priority (Malipot, 2024).

Moreover, in the Department of Education Region 12, the amended DepEd Order No. 010 series of 2024 was strictly implemented as of its release on September 18, 2024, adjusting the time allotment for Physical Education to 60 minutes less than other subjects per week (DO No. 12, 2024). In Koronadal City, learners received free school supplies yearly as one of the projects of Bagong Koronadal SIKAD Edukalidad (SIKAD Edukalidad Page, 2023). In addition, hundreds of laptop units were continuously distributed to schools and division offices to help the department (Kimmy, 2024). Despite the efforts of the LGU Koronadal in supporting the digitalization of schools, the National Achievement Test results still struggled to reach the national standards. In the school setting, Rotonda National High School got the lowest average MPS result consistently from the first to the second quarter of A.Y. 2024–2025 in the entire District 10, Koronadal City Division, which was quite alarming for the teachers and the school itself (Batoctoy, 2024). This standing called for the need to create effective learning materials that would result in a favorable impact on students' academic achievement.

in line with this need, this study aimed to validate LIHOK, an Active Games Handbook, as a potential flexible learning material that could directly elevate the students' academic performance. The result of this study would be of great help in enhancing teaching instruction to elevate the quality of education not just in local schools but also at the national and international levels.

METHODS

The study employed a quantitative research design, specifically the descriptive-developmental method. This method was applied, as the study aimed to develop and validate a learning material. The research meticulously investigated how the LIHOK Active Games Handbook was developed and validated as a

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teaching material for both teachers and learners, providing insights into its practical applications within the educational setting.

The study employed purposive sampling. The respondents of this study were the Grade 10 Junior High School students and teachers of Rotonda National High School, District X, Koronadal City Division, who were officially enrolled during the School Year 2024–2025. Total enumeration was used in this study, involving one hundred eleven (111) students and twenty-seven (27) teachers. Respondents answered a researcher-made survey questionnaire to identify the adequacy and availability of learning materials in the school for print and non-print form. The survey questionnaire was thoroughly validated by experts prior to survey conduct. For the validation of the LIHOK Active Games Handbook, an adopted tool form from Sultan Kudarat State University was used. The validity was evaluated by five (5) experts based on several key criteria namely: content, organization, mechanics, and overall package, to ensure that the learning material was relevant and useful in achieving its purpose of enhancing students' performance through active physical games.

Upon the culmination of the research study, the collected data were subjected to a structured sequence of procedures, including data compilation, tabulation, thorough scrutiny, and comprehensive interpretation.

RESULTS

In Rotonda National High School, Printed LMs are not enough and not always available for the learners to use. On the other hand, non-printed materials are adequate and just enough for the number of learners. Printed LMs are "Rarely Used" and infrequently utilized while non-printed LMs "Sometimes Used" or occasionally utilized in class, depending on the lesson.

Moreover, the validation of LIHOK Active Games Handbook was rated 4.60, interpreted as Very High Extent, in all its indicators which includes the Content, Organization, Mechanism, and Overall Package. The interpretation was that the developed learning reference material met 91-100% of the quality expectation.

In terms of the relationship between the adequacy and usability of learning resources at Rotonda National High School, the outcome shows no significant difference.

DISCUSSION

In reality, rural schools like RNHS have limited access to different learning materials which greatly affects the quality of teaching and learning of its learners. Additionally, printed materials are no longer a priority for purchase because of computerization and digitalization program of the Department of Education. The printed materials left are either obsolete or damaged and teachers are required to use videos, audios, PowerPoint presentations, laptops, or LED TV in teaching. There is clearly an imbalanced use of the two types of LMs in RNHS. The lack of available Printed LMs resulted in a very low usability level. However, despite of the high adequacy level of Non-printed LMs, the usability is lower than expected. ICT requires technical knowledge and strong internet connectivity. These are some of the reasons why Non-printed materials are sometimes unusable especially in schools in rural areas like RNHS.

The LIHOK Active Games Handbook's validation result implies that the developed IM is indeed a promising reference to be used by teachers in teaching subjects, integrating active physical movements through game-based activities.

Finally, the result on the lack of relationship between adequacy and availability of learning materials in RNHS implies that the available LMs in the school may not be very practically usable because of its nature. Because of the location of the school, stable and strong internet connection is one of the hindrances for the usability of the available non-printed or digital LMs. Similarly, though printed materials

are scarce, teachers still use it to aid the existing digital gap among learners for a more equitable access to quality education.

REFERENCES

Acer (2020, June 12). Selecting teaching resources that meet student needs: A guide. Australian Council for Educational Research.

Ágústa Pálsdóttir. (2019). Advantages and disadvantages of printed and electronic study material: University students' perspective. Information Research, 24(2).

Ahmad, T., & Sheikh, A. (2022). Impact of information and communication technologies (ICT) on student's learning: A case from University of the Punjab, Pakistan. *Digital Library Perspectives, 38*(2), 205-221.

Allamin, S., Sutoyo, S., & Azizah, U. (2023). The validity of teaching materials used in guided inquiry model integrated with STEM to train students' critical thinking skills on thermochemistry topic. Journal of Physics: Conference Series, 2590(1), 012034.

Alshumaimeri, Y. A. (2023). Understanding context: An essential factor for educational change success. Contemporary Educational Researches Journal, 13(1), 11-19.

Ambrose, S. A., & Harris, M. (2015). How learning works: Seven research-based principles for smart teaching. Jossey-Bass.

Ardent Learning. (2025, February 24). What is Instructional Design and Why is it Important?, 45(16), 155-190.

Armstrong, M.D. (2015). Consumer Surplus in the Digital Economy: Estimating the Value of Increased Product Variety at Online Retailers. Management Science, 49(11), 1580-1596.

Arundel, K. (2022). Survey: Use of print-only materials in classrooms likely to dwindle. *K-12 Dive*, 12(5), 104-129.

Aslanian, C. B., Clinefelter, D. L., & Magda, A. J. (2019). Online college students 2019: Comprehensive data on demands and preferences. Learning House.

Bailey, R. (2015). Physical education and sport in schools: A review of benefits and outcomes. *Journal of School Health, 76*(8), 397-401.

Beebe, S. A., & Masterson, J. T. (2016). Communicating in small groups: Principles and practices (11th ed.). Pearson.

Buffalari, D. (2022). Structured worksheets: Simple active learning strategies to increase transparency and promote communication. *The Journal of Undergraduate Neuroscience Education, 20*(2).

Bunker, L., & Thorpe, R. (2015). A model for the teaching of games in secondary schools. *Bulletin of Physical Education, 18*(1), 5-8.

Cale, L., & Harris, J. (2015). Exercise and young people: Issues, implications, and initiatives. *Sport, Education and Society, 10*(4), 419-441.

Castro, O., Bennie, J., Vergeer, I., Bosselut, G., & Biddle, S. J. H. (2020). How sedentary are university students? A systematic review and meta-analysis. *Preventive Medicine Reports, 20*, 101256.

Chen, W., Hammond-Bennett, A., Hypnar, A., & Mason, S. (2015). Health-related physical fitness and physical activity in elementary school students. *BMC Public Health, 9*, 277.

Cloeta, N., et al. (2020). Print-based learning media. *Journal Educational Verkenning*, 1(1), 1-7.

Corbin, C. B., & Pangrazi, R. P. (2015). Guidelines for appropriate physical activity for elementary school children: 2003 update. *Journal of Physical Education, Recreation & Dance, 74*(7), 38-43.

Core.ac.uk. (2018). Developing learning materials for specific purposes, *26*(8), 397-401.

Creswell, J. W. (2015). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (4th ed.) Sage Publications.

Di Lee, C. (2015). Worksheet Usage, Reading Achievement, Classes' Lack of Readiness, and Science Achievement: A Cross-Country Comparison. *International Journal of Education in Mathematics, Science and Technology*, 2(2), 96-106.

Dyson, B., & Casey, A. (Eds.). (2015). *Cooperative learning in physical education: A research-based approach*. Routledge.

Ellington, H. (2024). A review of the different types of instructional materials available to teachers and lecturers. *Teaching and Learning in Higher Education, 10*, Scottish Central Institutions Committee for Educational Development.

Ennis, C. D. (2015). Physical education curriculum priorities: Evidence for education and skillfulness in physical activity settings. *Quest, 63*(1), 5-18.

Estrellado, C. J. (2023). Journal of Interdisciplinary Perspectives, 2(1), 6-8.

Fairclough, S., & Stratton, G. (2015). Physical activity levels in middle and high school physical education: A review. *Pediatric Exercise Science, 17*(3), 217-236.

Field, A. (2018). Discovering Statistics Using IBM SPSS Statistics (5th ed.). *Sage Publications.*

Fisette, J., & Walton-Fisette, J. L. (2015). Voices from the trenches: An exploration of teachers' management knowledge in urban schools. *Journal of Teaching in Physical Education, 31*(4), 388-404.

Gallahue, D., & Cleland-Donnelly, F. (2015). *Developmental physical education for all children* (4th ed.). Human Kinetics.

Gorman, M. (2015). Our Enduring Values Revisited. Librarianship in the 21st Century. *American Library Association*.

Graham, G., Holt-Hale, S., & Parker, M. (2015). *Children moving: A reflective approach to teaching physical education* (8th ed.). McGraw-Hill.

Gula, L. P. (2022). The Emerging Sedentary Lifestyle of the 21st Century Junior High School Students. *SSRN Electronic Journal* (Volume 6), 1-16.

Hastie, P., & Buchanan, A. M. (2015). Teaching responsibility through sport education: Prospects of a coalition between sport pedagogy and moral education theory. *Quest, 52*(2), 119-140.

Herrington, J., & Oliver, R. (2015). An Instructional Design Framework for Authentic Learning Environments. *Educational Technology Research and Development*, 48(3), 23-48.

Hmelo-Silver, C. E. (2017). Problem-Based Learning: What and How do Students Learn? *Educational Psychology Review,* 16(3), 235-266.

Hobson, E. L. (20017). Teaching and Learning with Activity Sheets. *Journal of Educational Research*, 94(4), 231-238.

Hojjati, N., & Muniandy, B. (2019). The effects of font type and spacing of text for online readability and performance. Journal of Educational Computing Research, 60(4), 161-176.

Hulme, A. (2015). How Should the Higher Education Institution Support the Use of New Technologies in Teaching and Learning? *Journal of Educational Technology Development and Exchange,* 4(1), 1-14.

Ikerionwu, C. (2018). The role of instructional aids in teaching and learning. Journal of Educational Research and Development, 5(1), 1-10.

Intner, S. S. (2017). Fundamentals of Technical Services. Libraries Unlimited.

Jonassen, D. H. (2021). Learning to Solve Problems: A Handbook for Designing Problem-Solving Learning Environments. *Routledge*.

Khoiri, A., Hadiprayitno, I., Firmanshah, M., & Nurkhalisa, S. (2023). Developing context-based teaching materials and their effects on students' scientific literacy skills. Pegegog Journal.

Kirk, D., & Macdonald, D. (2019). Situated learning in physical education: The social construction of knowledge in a games lesson. *European Physical Education Review, 4*(3), 179-191.

Kitaboo. (2024, November 19). Pros and cons of digital textbooks and instructional materials.

Kvavik, R.B., & Caruso, J. B. (2015). ECAR Study of Students and Information Technology. *EDUCAUSE Center for Applied Research*.

Larson, L. C. (2017). Environmental Impact of Educational Materials. *Journal of Educational Research*, 110(4), 419-428.

Leflaive, S. (2024, January 17). The Importance Of Print In Education. LinkedIn. 65(50), 199-203.

Lonsdale, C., Rosenkranz, R., Peralta, L., Bennie, A., Fahey, P., & Lubans, D.R. (2019). A systematic review and meta-analysis of interventions designed to increase moderate-to-vigorous physical activity in school physical education lessons.* Preventive Medicine*, *56*(2), 152–161.

Manzano, R. J. (2020). Classroom Instruction that Works: Research-Based Strategies for Increasing Student Achievement. *Association for Supervision and Curriculum Development*.

McKenzie T.L., Lounsbery M.A.F.(2015) School Physical Education: The pill not taken; American Journal Public health.

Misha, P., & Koehler, M. J. (2021). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. Teachers College Record, 108(6), 1017-1054.

Mizrachi, D. (2015), Students' behaviors and preferences regarding the format of textbooks. Insights, 28(2), 79-88.

Ofune, A. (2015). The importance of instructional materials in teaching and learning. Journal of Teacher Education and Development, 3(1), 1-12.

Okabe, M. (2019). The K to 12 Program as a national HRD for the workforce. Philippine Journal of Labor and Industrial Relations, 113-121.

Paucar, M., (2020). *Importance of Microphone in Education*. 98(6), 14-40.

Picciano, A.G. (2019). Beyond Student Learning Outcome: The Concept of Learning Effectiveness. *Journal of Asynchronous Learning Networks*, 13(2), 1-14.

Roska, J., & Kemple, J. J. (2017). The effects of college on educational attainment: Evidence from a regression discontinuity design. Journal of Educational Psychology, 109(2), 285-301.

Schuwer, R. (2019, July 1). Towards a definition of learning materials – Open Education, 23(5), 10-15.

Shafique, F. (2016). Impact of teaching-learning materials on students' academic performance. Journal of Educational Research and Development, 11(1), 1-12.

Telefónica. (2024, November 19). 7 advantages and disadvantages of ICTs in education, 34(13), 17-21.

Thompson, S. (2024). Assessing the effects of the digital divide on remote learning participation and achievement. *Research & Reviews: Journal of Educational Studies, 10*(4), 5–6.

Tomlinson, C. A. (2021). How to Differentiate Instruction in Mixed-ability Classrooms. *Association for Supervision and Curriculum Development*

Tulsiani, R. (2024). eLearning Industry. *Embracing Diversity In Learning Styles To Personalize The Experience.* 60(5), 34-40.

Wickens, T. D. (2024). Design and Analysis: A Researchers Handbook (4th ed.). Prentice Hall.

Williams, J. M., (2018). Style: Lessons in Clarity and Grace. Long Grove, IL: Waveland Press.

Zhang, L., & Wang, Y. (2015). The nature, characteristics and ten strategies of learning organization. International Journal of Educational Management, 28(6), 645-657.