

Towards the development of a workbook in Fitness Testing and Basic Exercise Programming

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Julius Ceazar G. Tolentino¹, Homer A. Tacubanza²

¹College of Education, Don Honorio Ventura State University, Villa de Bacolor, Pampanga, Philippines

²Department of Physical Education, Bataan Peninsula State University, City of Balanga, Bataan, Philippines

juliusceazartolentino@yahoo.com¹, hatacubanza@ymail.com.ph²

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Abstract –This study aimed to develop a workbook in Fitness Testing and Basic Exercise Programming for students of sports track. Descriptive in nature, the study particularly employed research and development design. The workbook was evaluated in terms of its objectives, format, content, language, and usability by seven (7) pool of experts in the field of physical education, sports, and human movement science. The obtained data were treated statistically using mean and standard deviation. Comments and suggestions were also obtained to describe further its content validity. The findings revealed that the topics in Fitness Testing and Basic Exercise Programming can be developed into a workbook where experts were satisfied in terms of its objectives, format, content, language, and usability. The workbook can be useful to the students and teachers of Sports Track. Based on the findings, the researchers arrived at different recommendations such as determination of construct validity, content validity index, review of the exercises in the workbook by educational assessment experts, readability test, and further revisions through inclusion of up-to-date researches.

Keywords –instructional materials development, Physical Education, sports track, worktext.

INTRODUCTION

Workbooks are considered significant learning resources in the teaching-learning process. Fleisch, Taylor, Herholdt, and Sapire [1] cited researches on the relative importance of learning materials in the improvement of learning outcomes mentioning that countries in a wide range of context which include Nicaragua, the Philippines, Brazil, Fiji, Ghana, and Guinea showed significant learners' improvement once textbooks were sufficiently provided. Hence, instructional materials like textbooks, workbooks, modules and worktexts play significant roles in the teaching-learning process. In fact, the provision of textbooks, for one, is supportive towards the attainment of the fourth Sustainable Development Goal emphasizing education [2]. Moreover, Millar and Schrier [3] claimed in their study that students still prefer textbooks over their electronic counterparts certainly because they prefer better "printed" than the "digital" materials. Among US consumers, Helm, Ligon, Stovall and Riper [4] seconded such claim as 'millennials' still primarily prefer reading books of print than electronic versions. This may be attributed to lack of sense of

ownership to e-books as one may be granted permission to read but to technically own it like a hardbound book; lack of "social exchange and bonding"; minimal opportunity of personalization options; and sense of appreciation.

Along with any physical education curriculum, the concept of Fitness has always been integral to it. Fitness is defined as the ability to respond to the demands of physical activities, possessing reserve energy for sudden demands as well as to be free and cope with various diseases. Physical fitness tests were part of the Physical Education Curriculum in the Philippines across levels starting Grades 4 to 12 as well as an entry requirement for any sport event [5]. Having innate skill is important in any sport but without the much-needed fitness, one cannot endure the long-term training and may not yield good results.

The implementation of the K to 12 program would call for the production and development of instructional materials in the form of reference books, workbooks, teacher and students' guide, among others which would facilitate learning and teaching among students and teachers of the program. This is also in consonance with

the Department of Education through Republic Act 10533 [6] which encourages the production and development of locally-produced teaching and learning materials which are to be approved and be devolved to the regional and division education unit in accordance with national policies and standards. This has long been mandated by the Presidential Decree 6-A of 1972 [7] by the then President Ferdinand E. Marcos where the “design, utilization and improvement of instructional technology and development/production of textbooks and other instructional materials” was cited as one of the educational development projects. Letter of Instruction No. 1384, series of 1984 [8] directed the supply and quality of textbooks and teaching aids. It firmly believed that outcomes of education are primarily affected and are due to the availability and quality of textbooks and teaching aids, thereby encouraged all concerned teachers and experts to take part in the project.

Relevantly, the National Book Development Board (NBDB), an attached agency to the Department of Education, calls for the submission of supplementary written materials through its 2016 National Book Development Trust Fund where Senior High School is one of the three cited categories along with Mother Tongue and Intellectual Property Rights (IPR) since these materials are few or even nonexistent [9].

The subject, Fitness Testing and Basic Exercise Programming is one of the nine (9) subjects that is taken by sports track students in senior high school in which they are expected to plan and implement fitness testing protocols for health- and skill-related fitness parameters and design exercises with respect to objectives and fitness status [10].

Various studies have considered instructional materials such as workbooks/worktexts as output for research and development such as in Drawing [11], Basic Mathematics [12], Science, Technology and Society [13], yet rarely could there be a workbook developed in the realm of Physical Education considering that “movement” is predominantly the core of the discipline.

The researchers, being physical educators, firmly believed in the importance of a workbook in the teaching of physical education and sports in the field that is commonly conducted beyond the four walls of a classroom. They also would like to contribute something beneficial to the improvement of the quality of physical education and sports in the country by way of developing a workbook in the subject, Fitness Testing and Basic Exercise Programming that can facilitate the delivery of theoretical concepts in the very significant field of fitness testing and exercise programming suited to the

Philippine setting among sports track students. The researchers also got motivated to develop the workbook because there have been limited books to date in the sports track subjects of the K to 12 Senior High School.

OBJECTIVES OF THE STUDY

The researchers aimed to develop a workbook in Fitness Testing and Basic Exercise Programming for sports track students. Specifically, it sought to (a) determine if the following topics may be developed into a workbook (Introduction to Fitness Testing and Health Assessment; Testing Health-Related Fitness Parameters; Testing Skill-Related Fitness Parameters; and Exercise Programming for Healthy Individuals); (b) subject the proposed workbook for evaluation by pool of experts in terms of objectives, format, content, language, and usability; (c) determine the content validity of the topics in the workbook; and (d) identify the implications of the study in teaching sports.

METHODS

Research Design

In this quantitative research, the researchers made used of the descriptive method in the development of a workbook in Fitness Testing and Basic Exercise Programming. This method was used because it described the workbook’s validity as perceived by experts.

Specifically, an educational research and development (R & D) technique was employed, which is defined as the process of developing, evaluating, and validating educational resources, products, or other relevant outputs [14].

Respondents

The researchers purposively chose pool of experts who have specialized in their respective fields, making them credible to make an evaluation/review on the proposed workbook in Fitness Testing and Basic Exercise Programming.

Table 1. Frequency distribution and percentage of respondents

Expert-Respondents	F	%
Expert Physical Educators	4	57.14
Human Movement Science Expert	1	14.29
Certified Strength and Conditioning Specialists/Certified Professional Trainers	2	28.57
Total	7	100

Lynn [15], provided widely cited guidelines for what an acceptable item-level Content Validity Index (I-CVI) should be in relation to the number of experts. She

advocated that when there are 5 or fewer experts, the I-CVI must be 1.00—that is, all experts must agree that the item is content valid. When there are more than five (5) experts, there can be a modest amount of disagreement (e.g., when there are six experts, the I-CVI must be at least .83, reflecting one disagreement). The workbook was evaluated by seven experts in this case as shown in Table 1.

Instrument

In order to obtain pertinent data necessary for the study, the researchers adopted the survey-questionnaire used in the study of Dela Vega [16] entitled, “Development and Evaluation of a Workbook for Industrial Technology Students: Basis for Curriculum Enhancement.” The instrument is reliable as evidenced by a Cronbach’s alpha value of .884.

The questionnaire was basically divided into two (2) parts: The first part contains the personal profile of the respondents which include their name, institution, and area of specialization. The second part contains set of indicators for objectives, format, content, language, and usability. Along with the survey-questionnaire, comments, suggestions, and recommendations were also asked from the experts that would be of help in the revision of the proposed workbook.

Responses of the experts to each item in the survey-questionnaire were rated using five-point Likert scale: Strongly Agree (5), Agree (4), Moderately Agree (3), Disagree (2), Strongly Disagree (1).

Using the rating scale, the proposed workbook: (i) will be considered ‘useful’ if the mean score will range from 3.50 to 5.0; (ii) will ‘need substantial revision’ if the mean score will range from 2.50 to 3.49; and (iii) had to be ‘abandoned’ if the range of score will be from 1 to 2.49.

To arrive at a meaningful interpretation of the assessment of results, the following ranges with corresponding description and interpretation were used: 4.50 – 5.00: Very Satisfactory; 3.50 – 4.49: Satisfactory; 2.50 – 3.49: Moderately Satisfactory; 1.50 – 2.49: Unsatisfactory
1.00 – 1.49: Very Unsatisfactory.

Procedures

In the development process, the workbook underwent various processes. First, a review of the curriculum guide provided by the Department of Education for the subject Fitness Testing and Basic Exercise Programming was done by the researchers to identify all topics that need to be developed. Then, gathering of information and data

from pertinent books and other electronic resources that could serve as references was done. Along with this, solicitation of recommendations and suggestions from physical educators and workbook writers was also conducted necessary for the construction of the workbook. When the workbook was ready for evaluation/review by experts, the researchers sent an electronic mail (e-mail) to the evaluators of the workbook for their approval. Then, an online questionnaire was prepared utilizing Google Forms to obtain responses from the evaluators. The workbook was sent to them in portable document format (PDF) as well as the Uniform Resource Locator (URL) to access the online questionnaire.

Analysis of Data

The data gathered from the survey were then processed and tabulated. The mean ratings on each of the items in the survey-questionnaire given by experts were computed. The mean ratings were then calculated for each criterion, which are as follows: (1) objectives; (2) format; (3) content; (4) language; and (5) usability. These criteria were used in evaluating the workbook. Descriptive ratings were also derived based on the mean numerical ratings for each of the criterion.

The measure of central tendency such as the weighted mean was computed to determine the average rating per indicator and criteria. To identify the degree of variation or dispersion of the experts’ responses, standard deviation was also computed. Computations were conducted using Microsoft Excel®.

RESULTS AND DISCUSSION

The Development of a Workbook in Fitness Testing and Basic Exercise Programming

This study proposed a workbook in Fitness Testing and Basic Exercise Programming, a subject which is part of the course curriculum required for the completion of Sports as a track of specialization in the Senior High School. Figure 1 shows the vertical process on the development of the workbook which underwent the following procedures: (a) review of the curriculum guide of the Department of Education on Fitness Testing and Basic Exercise Programming to identify all topics that need to be developed; (b) gathering of pertinent books and other resources that would serve as references; (c) solicitation of recommendations and suggestions from expert physical educators; (d) development of the workbook; (e) evaluation by expert-respondents utilizing the a questionnaire as evaluation instrument; and (f) necessary revisions on the workbook based on the

evaluations and recommendations given by the expert-respondents of the study. These procedures facilitated the development process of the workbook.

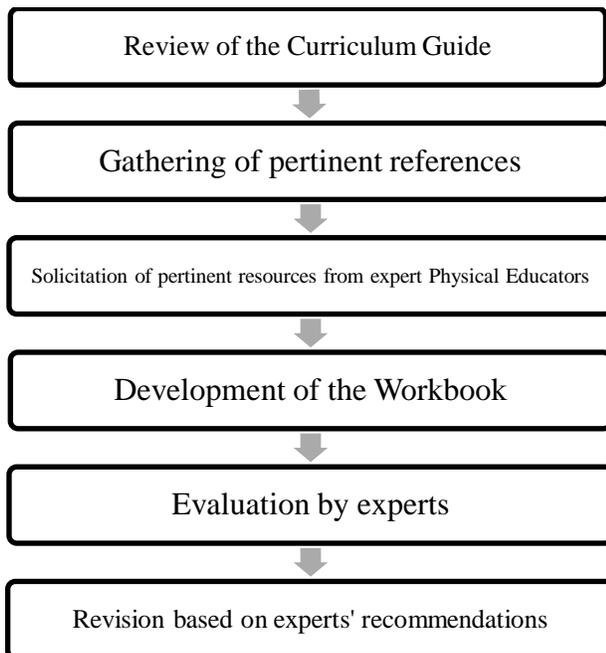


Fig. 1. Graphical illustration that shows a vertical process on how the proposed workbook was developed

The four main chapters of the workbook include: Chapter I: Introduction to Fitness Testing and Health Assessment, Chapter II: Testing Health-Related Fitness Parameters, Chapter III: Testing Skill-Related Fitness Parameters, and Chapter IV: Basic Exercise Programming for Healthy Individuals.

Experts' Evaluation of the Workbook

The workbook was evaluated in terms of five criteria, namely: objectives, format, content, language, and usability.

As shown in Table 2, an average weighted mean of 3.83 with a standard deviation (*SD*) of 1.00 and a descriptive equivalent of “satisfactory” was obtained. The standard deviation suggests the degree of variation or dispersion of the evaluation of the respondents. All the items under objectives were rated satisfactory by the experts. The indicator “Gives brief explanation of purpose for both teachers and students” obtained the highest mean of 4.29 and an *SD* of 0.95, with a descriptive equivalent of “satisfactory”.

This implies that the set objectives provide a discussion as regards the purpose of each lesson in every chapter of the workbook. However, the lowest weighted mean of 3.71 was obtained by five indicators: “Gives students the idea of what is

expected at the end of the lesson” (*SD*=0.76); “Provides students with materials essential to the learning process” (*SD*=1.25); “Provides teacher with ideas regarding the organization of information and activities” (*SD*=0.95); “Enables the students to develop fitness testing and exercise programming attitudes and skills” (*SD*=0.95); and “Attains objectives after the performance of the activities” (*SD*=1.11), all with descriptive equivalent of “satisfactory”.

Table 2. *Evaluation of the Workbook in terms of Objectives*

Indicators	WM	SD	Description
1. Supports the attainment of the general objectives of the course.	3.86	0.90	Satisfactory
2. Gives students the idea of what is expected at the end of the lesson.	3.71	0.76	Satisfactory
3. Provides students with materials essential to the learning process.	3.71	1.25	Satisfactory
4. Provides teacher with ideas regarding the organization of information and activities.	3.71	0.95	Satisfactory
5. Enables the students to develop fitness testing and exercise programming attitudes and skills.	3.71	0.95	Satisfactory
6. Attains objectives after the performance of the activities.	3.71	1.11	Satisfactory
7. Gives brief explanation of purpose for both teachers and students.	4.29	0.95	Satisfactory
8. Meets the content of the curriculum requirement.	3.86	1.07	Satisfactory
9. Defines clearly what is to be learned.	3.86	1.07	Satisfactory
AWM	3.83	1.00	Satisfactory

Experts were also satisfied on other indicators such as: “Supports the attainment of the general objectives of the course (*SD*=0.90)”; “Meets the content of the curriculum requirement (*SD*=1.07)”; and “Defines clearly what is to be learned (*SD*=1.07)”.

Like the study of Salavaria [17], objectives were also rated the lowest among the set criteria for evaluation in her proposed worktext in Statistics. Considering that majority of experts are experienced educators, they really find the setting of objectives a critical stage in the education process. Their experiences in educational planning make them credible to appraise the acceptability of the constructed objectives.

Setting of objectives requires proper planning and construction for these are statements that would give the

students the idea of what are to be expected at the end of every lesson. The key components of a learning objective should be considered in the planning phase. They have to be specific, measurable (observable), attainable, relevant and results-oriented, and time-bound. Objectives can be based on the Revised Bloom’s Taxonomy of Objectives in-lined with the learning competencies set.

Format. Table 3 shows the expert-respondents’ evaluation of the workbook in terms of its format.

Table 3. Evaluation of the Workbook in terms of Format

Indicators	WM	SD	Description
1. Shows carefully planned instructional designs.	4.43	1.13	Satisfactory
2. Combines attractiveness with utility in page layouts.	4.14	0.69	Satisfactory
3. Illustrates attractive and readable design, size, and type of print.	4.00	1.29	Satisfactory
4. Contains adequate margins and legible type face appropriate for students’ use.	4.14	1.07	Satisfactory
5. Does not bear decorative and uninformative illustrations.	4.14	1.07	Satisfactory
6. Demonstrates a visually appealing and interesting format.	4.29	0.76	Satisfactory
7. Exhibits consistency of artworks and text in the materials.	3.57	0.98	Satisfactory
8. Provides a useful table of contents.	4.00	1.15	Satisfactory
9. Illustrates accurate and well-integrated pictures, graphs, diagrams, tables, and plotted curves into the text.	4.00	1.15	Satisfactory
10. Illustrates accurate and well-integrated pictures, graphs, diagrams, tables, and plotted curves into the text.	3.86	0.90	Satisfactory
AWM	3.86	0.90	Satisfactory

An average weighted mean of 4.06 with a standard deviation of 1.02 signifies that the indicators in terms of the format of the workbook were “satisfactory” to them. The highest weighted mean of 4.43 with an *SD* of 1.13 was obtained in the indicator “Shows carefully planned instructional designs.” The workbook includes learning competencies that students are expected to do at the end of every lesson aligned to the general competencies of the subject. Along with this, in the evaluation part, students are expected to answer “Test Your

Understanding” to test if they have learned concepts cognitively and affectively. “Let’s Do this!” part expects students to perform the majority of not all fitness tests provided in the lesson per fitness component.

The indicator “Demonstrates a visually appealing and interesting format” obtained the lowest weighted mean of 3.57 with an *SD* of 0.98. The pool of experts believed that one way by which students will be motivated and engaged to read through the contents of the workbook is to provide a very appealing format and this is supported by the study of Torres [18] who developed a graphical and illustrated module in teaching Human Anatomy and Physiology. She utilized computer graphic interface theme to provide an atmosphere where computer and technology related templates were used to make it appealing to students. On the other hand, Allen [19] enumerated ways on how to design a book to make it visually appealing such as to proofread, look at the book, establish the format, fonts and tabs, chapter titles and subheads, headers, footers and numbers, illustrations, front and back matter.

Table 4 presents the experts’ evaluation of the proposed workbook on content.

As shown in Table 4, the experts were “satisfied” with the content of the workbook having an average weighted mean of 3.86 and an *SD* of 0.98. The indicators “Projects reading level appropriate to students’ age and program” and “Aligns lessons to DepEd curriculum” have the highest weighted mean of 4.14 and an *SD* of 0.90 with a descriptive equivalent of “satisfactory”. The lowest weighted mean of 3.43 (*SD* = 1.13) can be seen in the indicator “Provides lessons that are current” which is the only indicator with a descriptive equivalent of “moderately satisfied”. Experts commonly suggested the providence of more up-to-date information concerning the certain parts of the content. Continuous research in the field of physical education and sports is constant and trends and updates should always be considered in the revision of the proposed workbook.

The remaining indicators under content were perceived to be satisfactory by the experts. These are as follows: “Includes references, bibliography and resources”, “Provides lesson that are organized; coherent; unified”, “Contains extra tasks for students who need extra practice” “Gives clear, unambiguous and easy to follow instructions” with a common WM of 4.00 and *SD* of 1.00, 4.00, 0.82, 1.15, respectively. Satisfactory remark was also given to indicators “Contains clear and comprehensive lesson introductions and summaries” (*SD* = 1.35); “Gives real-life

applications of lessons” ($SD = 0.90$); “Uses developmentally appropriate activities” ($SD = 0.69$); “Provides interdisciplinary and informative lessons” ($SD = 0.69$); and “Covers all the topics necessary in understanding the subject” ($SD = 0.69$).

Table 4. Evaluation of the Workbook in terms of Content

Indicators	WM	SD	Description
1. Contains clear and comprehensive lesson introductions and summaries.	3.86	1.35	Satisfactory
2. Includes references, bibliography and resources.	4.00	1.00	Satisfactory
3. Provides lessons that are:	3.71	0.95	Satisfactory
3.1 accurate	4.00	1.15	Satisfactory
3.2 organized	4.00	1.15	Satisfactory
3.3 coherent	4.00	1.15	Satisfactory
3.4 unified	4.00	1.15	Satisfactory
3.5 current	3.43	1.13	Moderately Satisfactory
4. Projects reading level appropriate to students’ age and program.	4.14	0.90	Satisfactory
5. Gives real-life applications of lessons.	3.86	0.90	Satisfactory
6. Includes guiding questions to activities which encourage the development of higher level thinking skills.	3.57	1.40	Satisfactory
7. Aligns lessons to DepEd curriculum.	4.14	0.90	Satisfactory
8. Uses developmentally appropriate activities.	3.86	0.69	Satisfactory
9. Provides interdisciplinary and informative lessons.	3.86	0.69	Satisfactory
10. Applies activities to a diversity of student abilities, interests and learning styles.	3.71	1.11	Satisfactory
11. Gives readily available and complete references.	3.71	0.49	Satisfactory
12. Contains extra tasks for students who need extra practice.	4.00	0.82	Satisfactory
13. Gives clear, unambiguous and easy to follow instructions.	4.00	1.15	Satisfactory
14. Adopts practical applications of contents to Philippine setting.	3.71	0.95	Satisfactory
15. Covers all the topics necessary in understanding the subject.	3.86	0.69	Satisfactory
AWM	3.86	0.98	Satisfactory

A common weighted mean of 3.71 is given to “Provides lessons that are accurate” ($SD = 0.95$), “Applies activities to a diversity of student abilities, interests and learning styles” ($SD = 1.11$); “Gives readily available and complete references” ($SD = 0.49$) and “Adopts practical applications of contents to Philippine setting” ($SD = 0.95$). Lastly, the indicator “Includes guiding questions to activities which encourage the development of higher-level thinking skills” obtained a WM of 3.57 and an SD of 1.40.

The result of the study is supported by Angeles [20] who explained that “besides being prepared in a concise, neat, grammatically correct and organized manner, the content must contain specific information.” Contents seemed to be the heart of the entire workbook; therefore, a writer should basically scrutinize credible sources in the form of textbooks, internet sources, journals, researches, among others. A comparison of the similar sources should also be done to come up with an acceptable content.

Experts pointed out the need to promote higher order thinking skills among students which must be manifested in the contents of the workbook from discussions to the evaluation part. Considering that they are Senior High School students, they are expected to have a higher level of thinking because they are technically, at the level of college students in the previous educational system. Questions should be more focused on developing critical thinking and analysis and must be planned and structured parallel to outcomes-based education which is a common trend in our contemporary educational system.

Language. Table 5 reveals the expert-respondents’ evaluation of the workbook in terms of the language used.

This criterion obtained the highest average weighted mean among all five which is 4.33 with an SD of 0.86 and a descriptive equivalent of “satisfactory”. It could be noted that indicator “Employs English language as the medium of instruction” is the lone indicator among all that obtained a descriptive equivalent of “very satisfactory” due to its weighted mean of 4.86 and a standard deviation of 0.38. This only signifies that the pool of experts mostly agreed in this indicator. The only indicator that obtained the lowest weighted mean of all which is 4.00 ($SD = 1.00$) with a descriptive equivalent of “satisfactory” is the indicator “Appropriates language to the independent age group”.

Table 5. Evaluation of the Workbook in terms of Language

Indicators	WM	SD	Description
1. Employs English language as the medium of instruction.	4.86	0.38	Very Satisfactory
2. Relates the vocabulary and concept level of the workbook to the rest of the subject.	4.43	0.79	Satisfactory
3. Uses language that is consistent with that used in the rest of the lesson and in the rest of the workbook.	4.43	1.13	Satisfactory
4. Presents the discussions of the topics and subtopics clearly.	4.14	1.21	Satisfactory
5. Uses words that are free from grammatical errors.	4.14	1.07	Satisfactory
6. Appropriates language to the independent age group	4.00	1.00	Satisfactory
7. Develops the students' ability to find meaning in the grammatical relationships between words, groups of words and sentences.	4.29	0.76	Satisfactory
8. Provides an adequate vocabulary needed for academic study through various strategies.	4.29	0.76	Satisfactory
9. Integrates values from the different activities such as respecting the views of others.	4.29	0.76	Satisfactory
10. Explores the interests of students through performance tests and written activities.	4.43	0.79	Satisfactory
AWM	4.33	0.86	Satisfactory

Also seen on Table 5, the remaining indicators are still perceived to be satisfactory by the experts. A WM of 4.43 was given to the indicator “Relates the vocabulary and concept level of the workbook to the rest of the subject” ($SD=0.79$), “Uses language that is consistent with that used in the rest of the lesson and in the rest of the workbook” ($SD=1.13$) and “Explores the interests of students through performance tests and written activities” ($SD=0.79$); a weighted mean of 4.14 to “Presents the discussions of the topics and subtopics clearly” ($SD=1.21$) and “Uses words that are free from grammatical errors” ($SD=1.07$); and weighted mean of 4.29 and a common standard deviation of 0.76 to “Develops the students’ ability to find meaning in the

grammatical relationships between words, groups of words and sentences”, “Provides an adequate vocabulary needed for academic study through various strategies”, and “Integrates values from the different activities such as respecting the views of others”.

It is a must that workbooks must be presented using understandable words in English suited to the clientele for Moll as cited by Acero, Javier & Castro [21] said that language serves as a tool for organizing thinking since it bears the concepts. Written language is equally important as speech since it is the most elaborate form of language. Language plays a significant role in the learning process. It should be adapted to the type of people one communicates with, to deliver the thought that is intended to.

Usability. Shown in Table 6 is the evaluation of the expert-respondents in terms of the usability of the workbook.

Table 6. Evaluation of the Workbook in terms of Usability

Indicators	WM	SD	Description
1. Contains useful resource for students in the accomplishment of the subject.	4.00	1.15	Satisfactory
2. Provides an outline that the teacher can use in planning the lessons.	4.14	0.69	Satisfactory
3. Uses articles, illustrations, tables and graphs that can be used as reference materials by other students not included in the study.	4.29	0.95	Satisfactory
4. Promotes discussions that are useful to real-life situations.	4.00	0.82	Satisfactory
5. Applies true and practical analogies to topics.	3.71	0.95	Satisfactory
6. Allows creative modification of the lessons.	3.57	1.13	Satisfactory
7. Adapts to students' needs, interests and abilities.	4.29	0.95	Satisfactory
8. Supports other textbooks or resources that the students may have access to.	3.86	1.07	Satisfactory
9. Provides students' practice activities that they are likely to use.	4.29	1.11	Satisfactory
AWM	4.02	0.98	Satisfactory

An average weighted mean of 4.02 with an SD of 0.98 can be seen with a descriptive equivalent of

“satisfactory.” The indicators “Uses articles, illustrations, tables and graphs that can be used as reference materials by other students not included in the study”; “Adapts to students’ needs, interests and abilities”; and “Provides students’ practice activities that they are likely to use” have the highest weighted mean of 4.29 and standard deviations of 0.95, 0.95, and 1.11, respectively. It can be noted also that the indicator “allows creative modification of the lessons” had the lowest mean of 3.57 with a standard deviation of 1.13. Experts, however, were still satisfied in this indicator.

Meanwhile, the rest of the indicators were still perceived to be satisfactory by the experts. These include “Provides an outline that the teacher can use in planning the lessons” has a weighted mean of 4.14 and a standard deviation of 0.69; “Contains useful resource for students in the accomplishment of the subject” with a weighted mean of 4.00 and a standard deviation of 1.15; “Promotes discussions that are useful to real-life situations” with a weighted mean of 4.00 and a standard deviation of 0.82; “Supports other textbooks or resources that the students may have access to” with a weighted mean of 3.86 and a standard deviation of 1.07; and “Applies true and practical analogies to topics” with a weighted mean of 3.71 and a standard deviation of 0.95.

The results of the study of Bucjan [22], revealed that the contents, activities, exercise, and techniques used in the modules were varied allowing the students to work independently and creatively. On the other hand, Dela Vega [16], when she developed a workbook in Study and Thinking Skills course for Industrial Technology students, adopted terms in the various majors of the program and integrated them in the presentation found in the workbook making the students familiar as they use it. In the development process, for students to practically use the workbook or any instructional material, consider where the students will always feel at ease whenever they will be using it.

Table 7. Summary of evaluation of the respondents in terms of objectives, format, content, language, and usability

Criteria	AWM	Description
Objectives	3.83	Satisfactory
Format	4.06	Satisfactory
Content	3.85	Satisfactory
Language	4.33	Satisfactory
Usability	4.02	Satisfactory
Grand AWM	4.02	Satisfactory

Table 7 shows the summary of evaluation of the experts on the proposed workbook in terms of its objectives, format, content, language, and evaluation. It reveals that the expert-evaluators were satisfied with the objectives, format, content, the language used and the usability of the proposed workbook.

The proposed workbook obtained a grand average weighted mean of 4.02 which indicated that the workbook was found to have potentials for use since the experts were satisfied by the indicators. Table 7 also showed that among the five criteria, Language obtained the highest average weighted mean of 4.33. As to language used, it could be noted that English has been the other major language spoken in the Philippines especially during which instruction is delivered in schools. It is followed by Format, with an average weighted mean of 4.06, Usability with 4.02, and Content with 3.85. The lowest average weighted mean is seen on the Objectives with an average weighted mean of 3.83. Objectives play significant roles in the learning process. Since most of the experts are professional educators, they find the setting of objectives as a critical process for it allows students to identify what is to be expected of them during the evaluation. Physical Education is the most common subject where three domains were addressed in making objectives such as cognitive, psychomotor, and affective. The behavioral terms should also be SMART (specific, measurable, attainable, result-oriented, and time-bound). Statements should also be geared towards producing outcomes. Therefore, the setting of objectives, especially in workbooks, is not an easy task to do for indeed, it requires proper planning and should be congruent to the evaluation tasks that a teacher would want his or her students to do.

Description of the Content Validity of the Proposed Workbook

the

Content Validity, for performance measures, is normally established by examining, through literature review or through expert opinion. The content validity of each chapter was demonstrated through experts’ reviews and opinion, as well as through literature. Regardless of a “satisfactory” remark by pool of experts after thoroughly evaluating the workbook, they were also asked for their comments, suggestions and/or recommendations in order to make the necessary revisions to further improve the topics’ content validity as can be seen on the last part of the questionnaire.

Some experts made a general statement of comments/suggestions/recommendations that encompass the entire chapters of the workbook. Expert 1 said “*congratulations for I congratulate you in creating this textbook that can be used in senior high school, however these are the comments that I will ask you to address in the revision of the paper: 1. your objectives must be consistent with you evaluation AT ALL TIMES. 2. the presentation of content in you book must be comprehensive, remember, senior high school are technically college students. 3. some of the content were obsolete. try to look for some sources. 4. be aware of the FILCOLS copy right policies Nevertheless Congratulations!*” Expert 5 cited: “*General Suggestions: 1. Note: I hope the tests are aligned to "Filipino setting" - adaptable to the physique and standards of Asian skills and features. 2. Test Questions be checked by assessment teachers to contain the different levels. 3. Aside from the K to 12 given Learning Competencies which is already supplied, you can include separate, content (OBE) specific objectives (Revised Bloom's Taxonomy based).*”

In terms of the content of Chapter 1, three experts had a common suggestion to improve the learning objectives in every lesson. Expert 1 pointed out that the objectives should always be consistent with the evaluation. Supported by expert 6, he added that statement of learning competencies should be more observable and behavioral. In order to improve this, the suggestion of Expert 5 can be considered when she pointed out that aside from the given K to 12 Learning Competencies which was already supplied, the researchers can also include a separate, content (Outcomes-Based Education) using specific objectives based from the Revised Bloom's Taxonomy of objectives. As far as the content of the chapter is concerned, it was suggested by Expert 7 to revise the title of Chapter 1, from “*Introduction to Fitness Testing and Basic Exercise Programming*” to “*Introduction to Fitness Testing and Health Assessment*” and so it was adopted. The suggestion was taken into consideration and became consistent with the rest of the workbook as well as the entire study. Expert 2 suggested not to use Wikipedia as a source. The authors, therefore, decided to remove a few portions that contain contents that are retrieved from Wikipedia. Harvard College [23] pointed out that the use of Wikipedia is convenient, where some instructors advise their students to begin reading scientific concepts to start studying these concepts. However, in doing academic research, a researcher must be cautious in using Wikipedia because the site is open to anyone who wishes to contribute information to the extent that some were already

outdated or obsolete. Expert 6 suggested that there has to be a testing card for physical fitness that encompasses the health- and skill-related components. This was already included at the end of every fitness test in chapters 2 and 3.

Expert 4 commented that the proposed workbook's second chapter is “*...already concise and could easily be understood*”. However, expert 2 and 6 commonly suggested that the authors have to provide more complex and higher order thinking skills (HOTS) questions in the evaluation part. Expert 6 further suggested to remove enumeration in the paper and pencil test, thus change the behavioral term “*enumerate*” in the learning competencies into a more observable/behavioral context. Add to that, a standard is missing in measuring women's performance was also pointed out by expert 6 and suggested to use the book of David K. Miller, *Measurement by the Physical Educator: Why and How*” and Robert P. Pangrazi's *Dynamic Physical Education for Elementary and School Children*.

In the third chapter, expert 3 suggested that “*diagrams and pictures would be useful as visual expressions of the fitness test or skill test; overall comprehensive explanation*” while expert 4 pointed out that this chapter should have “*additional exercise prescriptions to get more activities.*” Expert 6 commented that learning competencies of lessons 8, 10, 11 and 12 are the same. He also recommended the removal of “*standing long jump*” in measuring power because “*it's too risky.*” The authors would like to stick to the inclusion of standing long jump because it has already been a generally accepted test to measure explosive strength and power of the leg muscles. It was also included in the DepED Physical Fitness Test Manual by the Task Force on School Sports [24]. The teacher or tester who will be administering this test should always be mindful of the safety precautions as well as the applicability of the test to the client's physical condition as can be assessed through the physical activity readiness questionnaire (PAR-Q) and student's/client's information sheet in the absence of a medical record history. Expert 7 pointed out that the Margaria-Kalamen Power Test is a test of anaerobic capacity (for power); therefore, power is different from anaerobic capacity. This test was already omitted so that only those specific tests intended solely for power will be retained.

In terms of the last chapter, expert 4 commented that this chapter is “*almost complete.*” Almost, considering that fact that expert 3 suggested the inclusion of “*pictures and charts of IRM continuum percentage, 100% to 65% effort, visual IRM squat and IRM bench press*” while

expert 6 mentioned the inclusion of body resistance training.

CONCLUSION AND RECOMMENDATION

The proposed workbook is intended for sports track students who will be taking the subject Fitness Testing and Basic Exercise Programming. The workbook can be used along with the teacher's supervision and facilitation. The authors would like to take note that the tests are not limited to what is provided in the workbook. The teacher of the subject can still include other tests as may be deemed necessary for there is no single test that can "perfectly" measure a specific component. The tests that are included are some of the general tests used all over the world that can be of use by the Filipino norms and physique, too.

Through the developed workbook in "Fitness Testing and Basic Exercise Programming," teachers can be at ease in teaching this subject because they are guided by the objectives and lessons in it. Moreover, the exercises provided can provide authentic assessment especially the laboratory parts. Having a workbook at hand makes things easier for both teachers and students because it provides more activities and less of the discussion for application is believed to be one of the best forms of comprehension. The results of the study might also inspire other teachers to develop instructional materials with the hope of improving the quality of teaching and learning. It may have been a not so easy thing to start, but through continuous reading and consultations, one can create a very effective and usable one. The teaching of sports requires students to be physically fit and so one way to assess one's level of fitness is to test it. The developed workbook can aid students of sports track to provide information that can be of use to them.

In the light of the results of the present study, several recommendations are recommended. The teachers of sports track can be tapped to identify the construct validity of the proposed workbook. Content Validity Index should also be determined. Moreover, the proposed workbook can be pilot-tested by the sports track students among offering-schools. Experts in measurement, evaluation and assessment of learning can further check the validity of the evaluation/exercises/activities of the workbook. A language teacher may also examine the entire workbook and make the necessary corrections in terms of grammar, syntax, use of words, among others. A readability test should also be considered to further increase the applicability of the language used conforming to the intended group. It is also recommended that school heads

and administrators encourage their faculty members to develop workbooks and other instructional materials in as much as they are the direct persons involved in the teaching-learning process. Thus, they know better learners' needs. Collaboration of physical educators and allied fields as well as curriculum developers can be a very good medium where the exchange of thoughts, ideas and knowledge can be observed. These can further be translated into concepts that can be used to develop workbooks to facilitate the delivery of knowledge and teaching of skills.

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