Peer And Students' Evaluation: An Instructional Module Enhancement

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Introduction

Background of the Study

A frequent question worldwide pertains to increasing students' proficiency with the standards and meaningfully and rigorously engaging students in the learning process. Pierce (2017) stated that for students' engagement and proficiency to increase, it is necessary for teachers to examine their instructional practices and materials and create a student-centered learning environment by shedding the outdated ones. One of the essential things in the learning process is the teaching materials – a module in particular. The teaching material is made to transfer learning from the teacher to the students to stimulate thoughts, feelings, interests, and willingness to learn.

One of higher education functions is providing quality education by giving responsive instructions. In doing so, faculty, especially those teaching major subjects, need to provide a variety of teaching strategies to ignite the flame of learning continuously.

With the advent of the pandemic, the need to deliver quality instruction needs dire attention for the academe to fulfill the students' needs and not hamper their rights to quality education and a meaningful learning environment amidst the pandemic.

With the present condition, the challenge to deliver effectively and maximize learning adds burdens to the educators, not to mention the paper works and the materials they have to augment out of their pockets. The Philippine education system is currently in crisis, as reported by the **Philippine Business for Education after the World Bank released similar reports stating that Filipino students did not meet learning standards (Philstar, retrieved March 12, 2022). The report says** that one out of four parents says their children are not learning. 72% of 15-year-old Filipinos are "low achievers" in reading, math, and science. Junior high school students also move up to the next level despite having low proficiency rates in Math (1%), English (3%), Science (1%), Filipino (13%), and Araling Panlipunan (10%). An alarming 1.1 million students did not attend school, and 1,179 private schools closed in 2020. Moreover, three out of four public schools do not have internet access amid the demands of the blended or distance learning approach.
Furthermore, the number of students enrolled in the academic year 2020-2021 is 66 million for basic education, 63 million for higher education, and only 753,000 for Technical and Vocational Education and Training TVET 2020 (Program for International Student Assessment, 2018).

The data mentioned above did not exclude higher institutions. They serve as basins of bridging programs and troubleshooting gaps associated with low proficiency and board ratings for board courses, overproduction of graduates, and mismatch between graduates and the needed skills.

With this, the researcher wishes to determine the level of peer and student evaluation of the existing module in Advanced Statistics (Non-Parametric) for further enhancement.

Purpose of the Study

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This study aimed to determine the peer and students' evaluation of the existing module in Advanced Statistics (Non-Para) of Iloilo State College of Fisheries-Dumangas Campus for the 2nd Semester of School Year 2021-2022 for further enhancement.

Specifically, the study sought answers to the following questions:

1. What is the level of peer evaluation of the instructional module in terms of objectives, content, format and language, presentation, and usefulness?
2. What is the level of students' evaluation of the instructional module in terms of format and content?
3. Are there significant differences in the level of peer evaluation of the instructional module in terms of objectives, content, format and language, presentation, and usefulness when grouped according to sex and number of years in service?
4. Are there significant differences in the level of students' evaluation of the instructional module in terms of format and content when grouped according to sex and campus of origin?
5. What part of the developed instructional module needs enhancement?

Hypotheses

Based on the previous statements, the following hypotheses were hypothesized at a .05 alpha level:

1. There are no significant differences in the level of peer evaluation of the instructional module in terms of objectives, content, format and language, presentation, and usefulness when grouped according to sex and number of years in service.
2. There are no significant differences in the level of students' evaluation of the instructional module in terms of format and content when grouped according to sex and campus of origin.

Theoretical Framework

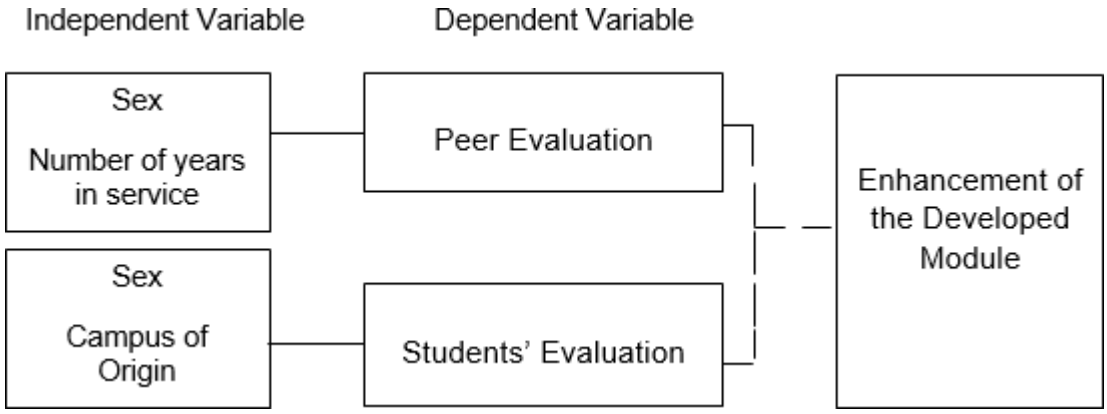
This study was anchored to Anderson's equivalency theory (2003), stating the conduct of a course or learning module revolves around student interactions with the instructor, other students, and the course content. Student interactions can be dynamic at a high or low level during the learning module. This will be primarily determined by the interaction balance decisions that the instructor/designer makes during the initial design process. The important student interaction weighting decision is influenced by several factors, including instructor and learning module considerations, learning theory considerations, and assessment parameters. The student interaction weighting decision is a matter of compromise and balance. First, the learning module management factors of educational content, learning objectives, the convenience of both the instructor and student, available time of the instructor and students, and cost must be carefully considered. Practical online learning module design becomes a matter of well-thought-out trade-offs. An overriding consideration is the available features of the software to be used. If the software has shortcomings in one of the student interaction parameters, this will undoubtedly influence the weighting decision. On the other side, a learning module can be over-designed so that the student workload demand is unreasonable.

Conceptual Framework

For a desirable learning environment to meet the first condition of "learner centeredness,"—the activities and pre-conditions in that environment must focus on the learner's goals, objectives, needs, and interests. Teachers involved in creating a learner-centered environment need to concentrate on understanding what the students know—their approach to learning may vary, and it is possible and desirable to help learners understand what and how to learn through learning modules. To achieve a quality learning

environment, teachers must understand and prioritize who students are, learn about their abilities, passions, and goals, and create learning activities that align with these. It is with great importance that teachers and students' should involve in the review process of modules created. The peer and students' evaluation (dependent variables) rating will determine the functionality and usability of the module created and will contribute greatly in the enhancement process.

Research Paradigm



Significance of the study

The findings of this study were beneficial to the following:

Students. The results will provide students with quality modules that allow them to learn at their own pace, enhance their communication skills, discover things independently, and improve their academic performance.

Mathematics Professors. The result will allow the teacher to organize numerous sequences to reflect the special interests and needs of the students, enable the teacher to focus on students' deficiencies in the subject matter, and eliminate the necessity of covering the subject matter already known to students. The results will also provide teachers with on-hand information to provide necessary solutions to the gap and enable teachers to explore more teaching variables and examine a learning environment that enhances academic performance.

School Administrator. Results will pave the way for the administrators to design training on module-making for teachers and other instructional materials, review the course content, further investigate the goal structures and different combined learning strategies and assess students' academic learning outcomes.

Future Researchers. Results of this study will reflect convictions that module evaluation and development urgently need more accumulation of knowledge and expertise to attain its usability. Specific perspectives on current research will greatly help better understand learning. This contribution may serve as a pointed reminder of the current practice and the gap in future research and theories relevant to this.

Scope and Limitations of the Study

This study focused mainly on determining the level of peer and students' evaluation of the existing Advanced Statistics (Non-Para) Module of Iloilo State College of Fisheries-Dumangas Campus for the Second Semester of School Year 2021-2022. A descriptive research design was employed in this study utilizing eight (8) Mathematics professors/teachers and thirty (30) Bachelor of Secondary Education majors in Mathematics students who already took the subject Advanced Statistics (Non-Para) as respondents across

the ISCOF system specifically to the four campuses namely: ISCOF – San Enrique, ISCOF – Dingle, ISCOF Main, and ISCOF – Dumangas. Due to the limited number of students majoring in Mathematics, the researcher used complete enumeration to determine the desired sample population and convenience sampling for the teacher respondents.

This study was limited to the following specific topics in the module: (1) Spearman Rho, (2) Phi Coefficient, (3) Contingency coefficient, (4) test of differences such as Mann-Whitney U, Wilcoxon and Kruskal-Wallis test and point biserial,. The researcher utilized two sets of adopted questionnaires to determine the level of peer and students' evaluation – Evaluation of the Instructional Modules Based on Experts' Judgments and Student-Participants' Judgment. The statistical tools were the following: frequency count and percentages, the mean, standard deviation, Mann-Whitney U test, and Kruskal-Wallis H test. The significance level is at .05 alpha.

Definition of Terms

For clarity and understanding, the following terms were defined conceptually and operationally:

Instructional Module refers to an instructional package with a single conceptual unit of subject matter and is designed to help the students accomplish what is stated in the objectives (Russel, 1974).

Instructional Module evaluation refers to the formal and informal processes of collecting feedback from the students on the module's relevance, effectiveness, and efficiency (The Quality Assurance Agency for Higher Education, 2018).

In this study, the term Instructional Module Evaluation refers to the anonymous, critical, and constructive feedback from mathematics professors and student evaluators on the objectives, content, format and language, presentation, and usefulness of the entire module.

Students refer to learners enrolled in an educational institution (Princeton's WordNet, retrieved March 13, 2022).

The term *students* in this study refer to the Bachelor of Secondary Education students majoring in Mathematics.

Peer refers to a person of equal standing with another in a group (Princeton's WordNet, retrieved March 13, 2022).

The term *peer* in this study refers to Mathematics Professors/teachers across the ISCOF system.

Enhancement refers to an act of increase or improvement in quality, value, or extent (Online Dictionary, 2018).

The term *enhancement* in this study refers to the author's alterations, changes, and improvements in improving the instructional module based on the ratings given by the evaluators.

Review of Related Literature

Self-learning Modules

Various strategies have been developed to foster self-directed learning. Smedley (2007) offered a set of strategies that assist self-directed learning readiness: providing constructive feedback, creating a supportive learning environment, encouraging self-assessment, using self-reflection, developing goal orientation

values, and providing opportunities to engage in their learning processes. These strategies may be helpful for teacher educators who consider taking a step towards fostering students' self-directed learning and helping students to survive and thrive in this information age. In addition to these aforementioned strategies, an approach to self-directed learning requires utilizing instructional materials designed to help the students learn by themselves. These self-instructional materials, which could be in module form, consisted of self-contained, independent units of instruction prepared to attain defined instructional objectives (Macarandang, 2009 in Torrefranca, 2017). Two distinctive features of self-instructional modules are promoting self-paced learning and its availability at any time and place. As a self-paced learning material, it allows learners to work at their own pace rather than the group's pace, which can be too fast or too slow. Self-instructional material will enable students to learn when they wish rather than according to an external timetable.

Modular learning is a student-centered pedagogical approach by simplifying down a body of knowledge into its components to achieved the desired outcomes. Prior knowledge are utilized by learners to assess what information is known and complete modules related to areas that still need to be learned. Students must demonstrate mastery over relevant outcomes and competencies within each module to move forward, which shifts greater responsibility to the student as their learning becomes self-initiated, self-paced, and self-monitored. A modular learning approach combined with technological advances, help students practice, prepare, and perform appropriate skills, become more insightful decision-makers and leaders in professional and academic settings (Friestad-Tate, Hancock, and McCoy, 2013).

Modular Instruction

Considered as one of the latest innovations in the educational system, the modular instruction. The innovation in the modular approach contains a series of activities, starting with teaching instructions addressed to the learners, explanations, exercises, and generalizations. A module is an independent unit of a planned series of learning activities. A self-contained designed to help the student accomplish certain well-defined objectives. The learner can proceed at this own rate and recycle if necessary. Modules emphasize analysis and application of concepts and techniques and give a concrete concept style. It also provides active student participation in responding and waiting to meet areas of individual interest and helps the teacher extend more individualized instruction in school and at home. Modular instruction promises a more efficient mass education by offering more effective individual instruction when a teacher is faced with the problem of simultaneously producing learning in a large group. It is a self-instruction technique involving the presentation of instructional materials to demonstrate their skills and comprehension.

The principles and purpose of modular instruction, its advantages for students and instructors, and a comparison between the conventional and modular approaches are presented. Present evidence suggests that modular instruction meets the needs of today's students in more learning and content. Instructional materials can serve as learning materials for both students and teachers. They can serve as a primary source of scientific content and present specific views about the nature of scientific practices and how scientific knowledge is developed. Materials can also primarily influence how teachers should teach science (Reiser, B. J., et al..2003, in Torrefranca, 2017). To properly implement any school curriculum, textbooks become part and parcel of the education system. Especially in developing countries, it has been a regular practice to consider textbooks as the major source of the teaching-learning process to be undertaken in schools(Mahmood, K., 2010). There is also the possibility that reviewers do not have enough expertise to understand how to analyze the text concerning cognitive development. The results point out that merely providing the main contents of the curriculum to the authors does not ensure coverage of the topics demanded in the curriculum. The modules in the principles and methods of teaching include lessons and topics that meet the authorities' requirements in teacher education. The contents of the modules reflect the most important aspects of what is being taught. The modules provide evaluation activities that relate to the

content and objectives of the lessons; however, there is no provision for pre-test and post-test activities in each module. There is a highly significant difference between the students and the teachers' assessment of the characteristics of the modules. The teachers' assessment is higher than the students (Macarandang, M. A., 2009). An evaluated and tried-out environmental outdoor education module for the students of St. Scholastica College found that most of the students' comments and responses to the guide questions and personal insights were positive. The remarks and suggestions were sufficient reasons for considering the modules suitable and purposeful. She concluded that the module could significantly meet the content, instructional characteristics, and effectiveness (Samonte, M. C. L., 2004).

Educational theories supporting modular learning

Many companies, including Jiffy-Lube, Starbucks, and Wal- Mart, are offering courses in-house to teach employees skills and information, which provide in-time learning that most institutions of higher learning cannot or aren't offering. Globally, corporate universities are popular choices for teaching skills to employees, which is necessary to succeed in business and move up within organizations by improving their business and leadership skills. Universities have accepted these corporate courses toward degrees, which is changing how corporations and universities interact (Connell, 2013). With an increase in acceptance of alternative ways to offer college credits, institutions of higher learning are examining how courses are offered and how to appeal to a broader educational base than those entering formal degree programs. This has paved the way for modular learning in formal and informal academic settings. The shift in the past years has moved from a teacher-led curriculum to a Student-Centered curriculum focusing on knowledge, skills, and competencies. Students may exit a course or program as well as change the process of course design (Donnelly and Fitzmaurice, as cited in O'Neill, Moore, and McMullin, 2005). Modular learning is the approach where the focus is on learning outcomes, and its success relies on connecting outcomes to student learning and course design.

Instructional Materials

Using self-instructional materials is beneficial for introducing basic information to an entire class and freeing the lecture-discussion hours for more "discussions" and fewer "lectures," an enrichment activity for talented students; a strategy to make up for an absent student, and a strategy for a student in need of remedial lectures. It is explained that instructional materials offer the best means by which a teacher can provide direction in her students' daily search for new understanding and verifications. The use of modules as learning material is no longer new in education, especially at the tertiary level. This teaching-learning material is characterized by small-step, sequential, and concept-and/or skill-oriented presentation of a unit of learning (Macarandang, M. A., 2009). A self-instructional module is a self-contained, independent unit of instruction prepared to attain defined instructional objectives. It is characteristically self-directing since it includes instruction on how the various investigations will be pursued (Salandanan, 2001).

The preparation of self-instructional modules includes careful analysis of the course plan or syllabus, preliminaries, and learning activities. The design of the learning activities consists of the objectives, directions, pre-test and key, activity proper, self-evaluation exercises, and posttests (Macarandang, M. A., 2009). Modular instruction provides the basis for close interaction between the learner and the subject matter, that the learner is called upon to respond actively in the interaction with an instructional program, and that the rate at which the interaction proceeds are governed individually by each learner's response (Hughes, J. L., in Torrefranca, 2017). The advantages offered to the teacher who uses the modular approach. These are: it provides the opportunity for organizing numerous sequences to reflect the special interests of the teacher and students; it allows the teacher to focus on the deficiencies of students in the subject matter; it serves to eliminate the necessity of covering the subject matter already known to students. With the use of modules, a student's progress is assessed and the routine aspect of instruction is reduced, giving the teacher a chance to enjoy her personal contact with the students (Greager, J. And Murray, D.,

2001 in Torrefranca, 2017).

Keane and MacLabhrainn (2005) provide the following pointers for approaching students' comments (1) keeping in mind the factors such as studying any other contextual factors that might explain a particular response, (2) considering any sources of bias that may have influenced how or why a student answered as they did, (3) being aware of any situation, and (4) ensuring an adequate number of reliable and representative respondents and gathering information from additional sources whether the comments received are valid.

Mathematics Curricula Development for Students

Since the middle of the 20th century, there have been significant ongoing shifts in the structure, content, and core principles of mathematics curricula worldwide (Schoenfeld, 2014). Recent changes, such as the widespread adoption of the Common Core State Standards in Mathematics in the U.S. and Project Maths in Ireland, indicate the return to focus on problem-solving and placing mathematics in context so that students can make sense of what they are learning (Schoenfeld, 2014). This shift in perspective requires a different style of teaching, in which students' participation in the learning process is emphasized (Griffin et al., 2013). This is often formulated in terms of a shift from a procedural to a conceptual approach to teaching and learning mathematics. However, research indicates that the tradition of mathematics instruction for students continues to focus on the practice of direct instruction, which leaves very little room for the student's initiative and participation (Göransson et al., 2016). Teachers typically focus on the repetitive practice of computational skills based on the belief that students must master readiness skills before engaging in higher-order mathematics lessons (Browder et al., 2012).

Design and Development of Mathematics Module for Students

Many of the points noted in a literature review were considered for designing and developing a mathematics module in a recently accredited higher education program for college students. The module comprises eleven two-hour lectures over an academic semester in an Irish university. The module has four main aims: (1) To develop in students the ability to think critically about mathematics, express viewpoints, discuss logically and problem solve effectively, (2) To equip students with the mathematical skills that they may require daily, (3) To inspire students to develop their mathematics learning skills which they may need to navigate today's society confidently, and (4) To encourage collaborative learning through project-based tasks incorporating mathematical skills and practical application. The content combines mathematical theory and practice and includes traditional topics such as money and measurement. However, as Browder et al. (2012) recommended, the module consists of other content areas such as statistics, probability, and trigonometry. There is an emphasis on teaching all topic areas within practical, real-life situations (Burton et al., 2013).

Related Studies

Foreign Studies

In a study by Abdu-Raheem (2011), students taught with instructional materials performed better than those without modules. Therefore, the study recommended that teachers of Social Studies should use essential instructional materials for their teaching and improvise where and when the materials are unavailable. It, therefore, becomes imperative to have concerted efforts among parents, schools, and the government to make available essential and necessary instructional materials to teachers of Social Studies for enhanced teaching and consequently improved achievement of students in the subject.

Wiley (2019) found some general advantages of a university-wide system, which facilitates

comparison between different modules. Acknowledged several shortcomings relating to its lack of sensitivity to individual module contexts and schedules and that standardized surveys are only partially effective as a teaching evaluation. He further suggests that the perceived limitations of SET point to the need to triangulate its results with data obtained through alternative evaluation mechanisms.

Khalil et al. (2020) study revealed the original value of the study. It explored the essential role that modules play in mathematics teaching and how teachers can utilize modules to enhance the creative challenges that lead to the improvement in mathematics comprehension and make it valid for every stage of learning.

In the study of Nwagbara et al. (2015), results revealed all things being equal, modular instruction in mathematics is more effective as a strategy for learning/teaching than traditional lecture methods. In modular instruction, the students are provided the opportunities of learning mathematics at their own pace, needs, and capacity. Mathematics students in the modular instruction outscored the students working with the traditional lecture mode, although both groups were on the same pedestal at the pre-test period. This indicates that, overall, the modular approach as compared to the traditional method of instruction is more effective. Available evidence shows that modular instruction is a self-learning style in which immediate reinforcement is provided as feedback to practice task, which motivates the student. Interestingly, the modular approach has built-in interest creating capacity that stimulates the learners to freely tackle tasks at their rate, understanding, and direction.

Local Studies

Acelajado (2005), in her study, revealed that using the modular teaching approach as an intervention modular teaching approach has made significant improvement in the learners' achievement, persistence, and confidence in mathematics. Higher mathematics performance largely depends on the learner's mathematical ability and understanding of basic mathematical concepts. The improvement of the learners' persistence and confidence is independent of their mathematical ability. The modular teaching approach in mathematics positively affects the respondents' achievement, persistence, and confidence levels, especially among the low-ability group respondents.

In the study of Cachero (1994), she found that most second-year high school students recognized the need for additional learning aids in acquiring skills in problem-solving. The teachers and the students found the prepared modules readable and highly favorable content validity and reliability. Students who used the modules performed better than those exposed to the traditional lecture-discussion method of instruction.

Torrefranca (2017), in her study, revealed that all the evaluators strongly agreed that the instructional modules satisfied the criteria for evaluating the modules, signifying that the modules brought out improvement in the students' knowledge of Rational Expressions and Variations.

According to Nardo (2017), carefully prepared modules can aid in meeting the varied language learning needs of students; the use fosters learner autonomy among them, develops self-confidence for those who do not need major supervision from the teachers, and students score favorably on the items given in the modules and convey that they can do tasks on their own, and the performance of the experimental and control group in the regular, assigned, and evaluative tasks did not register a significant difference, which implies that the students can use the modules without much intervention by the teacher. The modules provide what learners must do and how to do the tasks.

Lim (2016), in his study, revealed that modular instruction in teaching Math specifically word problem solving is an effective teaching approach. Though the results showed that learning took place in

both groups using the two teaching methods, the subjects taught by modular instruction performed significantly better than those exposed to the traditional lecture method.

In the study of Hamora et al. (2022) the student evaluated the instructional modules in terms of the three aspects: physical features of the modules, the different parts of the modules, and their overall evaluation of the modules as acceptable.

Methodology

Research Design

A descriptive quantitative research design was employed in this study. Quantitative research is a structured way of collecting and analyzing obtained data from different sources and involves using statistical, computational, and mathematical tools to get the results. Conclusive in its purpose is to quantify the problem and understand how prevalent it is by looking for projectable results for a larger population (Calmorin, 2010). More so, Descriptive research describes and interprets things, such as the condition of a thing or relationship, opinions that develop, an effect that occurs, and ongoing trends in the community (Creswell, 2014).

Locale of the Study

This study was conducted at Iloilo State College of Fisheries System. Specifically, the main campus and the three external campuses offering Bachelor of Secondary Education majors in Mathematics: are ISCOF Dumangas Campus, ISCOF Dingle Campus, and ISCOF San Enrique Campus.

Sample Size and Sampling Technique

The study samples were the population of eight Mathematics professors (8) teaching advanced statisitcs (Non-Parametric) and thirty (30) Bachelor of Secondary Education majors in Mathematics students who already took the subject Advanced Statistics (Non-Para) as respondents across the ISCOF system taken by complete enumeration.

Research Instrument

Two sets of adopted Likert-type questionnaires were used in the study. The first part initially includes the respondents' personal profiles, such as sex, length of service, and the campus of origin. The Evaluation of the Instructional Modules Based on Peer Evaluation questionnaire is composed of 25-item statements and answerable by (1) Strongly Disagree, (2) Disagree, (3) Uncertain, (4) Agree, and (5) Strongly Agree. On the other hand, Student-Participants' Evaluation questionnaire is composed of 20-item statements also answerable by (1) Strongly Disagree, (2) Disagree, (3) Uncertain, (4) Agree, and (5) Strongly Agree. The intensity of the response was one as the lowest and five as the highest. The mean scores were interpreted using the following scales and descriptions:

Scale	Description
4.21 – 5.00	Very Good
3.41 – 4.20	Good
2.61 – 3.40	Fair
1.81 – 2.60	Poor
1.00 – 1.80	Very Poor

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Data Gathering Procedure

Before administering the research instruments via Google Forms or printed questionnaires, the researcher sought the Campus Administrators' necessary permission for every participating school to administer the questionnaires. Soft copies of the module and the link to the Google form were sent through the email of the participating Math Professors and student evaluators. On the other hand, the researcher prepared hard copies of both the module and the questionnaire as an alternative in case peer and student evaluators are unreachable online. The questionnaire was retrieved, and the data gathered were tabulated, analyzed, and interpreted.

With the advent of the Novel Corona Virus Diseases 2019, the study was conducted following the health protocols set by the COVID-19 Inter-Agency Task Force and the Department of Health.

Data Analysis Procedure

Mean was used to determine the module's evaluation level in terms of objectives, content, format and language, presentation, and usefulness.

Standard Deviation was used to determine the homogeneity and heterogeneity of the respondents concerning their module evaluation.

Mann-Whitney U test was employed to determine the significant difference in the module's evaluation level in terms of objectives, content, format and language, presentation, and usefulness when grouped according to sex.

Kruskal-Wallis H test was employed to determine the significant difference in the module evaluation level in terms of objectives, content, format and language, presentation, and usefulness when grouped according to the number of years in service, sex, and the campus of origin. Significance is set at a .05 alpha level.

Results and Discussions

This chapter presents the results and discussions of the data analyses.

Peer and Students' Evaluation of the Instructional Module in Terms of Objectives, Content, Format and Language, Presentation, and Usefulness

The data analysis showed that the level of peer evaluation of the instructional module in terms of objectives and content was *"very good."* The format, language , presentation , and usefulness were evaluated as *"good,"* respectively.

Results further implied that the module was usable, user-friendly, and comprehensive, with room for improvement in terms of formatting, layout, and the language used to make the lessons more exciting and motivating.

The results further confirmed the statement of the Directorate General of PMPTK, Ministry of Education (2014): "a good module is self-instructional, self-contained, can stand alone, adaptive, and user-friendly."

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Table 1 ***Level of Peer Evaluation of the Instructional Module in Terms of Objectives, Content, Format and Language, Presentation, and Usefulness***

	Mean	SD	Description
A. Objectives of the Module			
1. The objectives are clearly stated in the behavioral form.	4.50	.535	Very Good
2. The objectives are well-planned, formulated, and organized.	4.63	.518	Very Good
3. The objectives stated are specific, measurable, and attainable.	4.63	.518	Very Good
4. The objectives are relevant to the topics of each lesson of the modules.	4.50	.535	Very Good
5. The objectives take into account the needs of the students.	4.63	.518	Very Good
CM =	**4.58**	**.495**	**Very Good**
B. Content of the Module			
6. The content of each lesson is directly relevant to the defined objectives.	4.38	.744	Very Good
7. The content of each lesson is simple and easy to understand.	4.38	.744	Very Good
8. The topics of each lesson are thoroughly discussed.	4.25	.707	Very Good
9. Illustrative examples support the topics, and the practice tasks are suited to the level of the students.	4.25	.707	Very Good
10. Each topic is given equal emphasis in the lesson.	4.38	.744	Very Good
CM =	**4.33**	**.701**	**Very Good**
C. Format and Language of the Modules			
11. The format/layout is well-organized, which makes the lessons more interesting.	4.00	.756	Good
12. The language used is easy to understand.	4.13	.835	Good
13. The language used is clear, concise, and motivating.	4.13	.835	Good
14. The mathematical symbols used are well-defined.	4.25	.707	Very Good
15. The instructions in the instructional modules are concise and easy to follow.	4.38	.744	Very Good
CM =	**4.18**	**.705**	**Good**
D. Presentation of the Module			
16. The topics are presented in a logical and sequential order.	4.25	.707	Very Good
17. The lessons of the modules are presented in a unique and original form.	4.25	.707	Very Good
18. The learning activities are presented clearly.	4.25	.707	Very Good
19. The presentation of each lesson is attractive and interesting to the students.	4.00	.535	Good
20. Good examples are given for each topic.	4.25	.707	Very Good
CM =	**4.20**	**.650**	**Good**
E. Usefulness of the Module			
21. The instructional modules will motivate the students to study Intermediate Algebra.	4.25	.707	Very Good
22. The instructional modules will help the students master the topics at their own pace.	4.00	.535	Good

23. The instructional modules will allow the students to use their time more efficiently.	4.25	.886	Very Good
24. The instructional modules will develop students' analytical thinking and reasoning skills in solving problems in Advanced Statistics.	4.25	.886	Very Good
25. The instructional modules will serve as supplementary material that can cater to the needs of the students.	4.25	.707	Very Good
CM =	**4.20**	**.659**	**Good**

Scale	Description
4.21 – 5.00	Very Good
3.41 – 4.20	Good
2.61 – 3.40	Fair
1.81 – 2.60	Poor
1.00 – 1.80	Very Poor

The results showed that students' evaluation of the instructional module in terms of format and content was *"good."* Results further implied that more improvements should be made in the format and content to enhance its usability, comprehensiveness, and totality.

The finding corresponds to Balbin et al. (2021), where students evaluated the faculty-prepared modules as acceptable. Still, the faculty concerned are encouraged to work on developing more acceptable and interactive instructional modules considering the improvement of the physical features and salient parts of the learning material. As the new standard-setting continuously hampers face-to-face classroom interaction, the faculty must innovate to develop a motivating and engaging instructional module. Modules should not be utilized until they have passed quality assurance tests (Hamweete, 2012).

Table 2 ***Level of Students' Evaluation of the Instructional Module in Terms of Format and Content***

	Mean	SD	Description
A. Format of the Module			
1. The layout of the instructional modules is arranged in a logical and sequential order.	4.10	1.155	Good
2. The instructions in the modules are well-emphasized.	4.13	1.074	Good
3. The font size and font style of the instructional modules are readable.	4.33	.994	Very Good
4. The mathematical symbols used in the instructional modules are well-defined and clear.	4.13	1.106	Good
5. The tables/diagrams are well presented and easy to understand.	4.13	.973	Good
6. Key points and key concepts are well highlighted to focus attention while reading.	4.23	.858	Very Good
7. Titles and subtitles in the instructional modules are clearly defined.	4.30	1.055	Very Good
8. Illustrations, pictures, and captions are appropriately laid out for easy reference.	4.07	.980	Good
9. The steps in the solutions of the given examples and practice tasks are arranged sequentially and easy to follow.	4.10	1.029	Good
10. The instructional modules are generally formatted in a convenient manner considering the paper size used.	4.30	.952	Very Good

CM =	**4.18**	**.955**	**Good**
B. Content of the Modules			
11. I easily understood the objectives of each lesson.	3.73	1.048	Good
12. I easily understood the instructions in each lesson.	3.90	.923	Good
13. I could work on the lessons at my own pace.	3.77	1.006	Good
14. I clearly understood the ideas/concepts in each lesson.	3.77	1.073	Good
15. The illustrations/captions guided me easily in following the instructions in the modules.	4.03	.999	Good
16. The learning activities helped me to understand the topic thoroughly.	3.87	1.042	Good
17. I appreciated the styles of illustrations and written expressions.	4.00	.983	Good
18. I enjoyed answering the practice task as presented.	3.77	1.040	Good
19. I found it easier to study Advanced Statistics using these instructional modules.	3.77	1.073	Good
20. I enjoyed working through each lesson until I finished the whole instructional module.	3.93	1.015	Good
CM =	**3.85**	**.938**	**Good**

Scale	Description
4.21 – 5.00	Very Good
3.41 – 4.20	Good
2.61 – 3.40	Fair
1.81 – 2.60	Poor
1.00 – 1.80	Very Poor

Differences in the Level of Peer Evaluation of the Instructional Module in Terms of Objectives, Content, Format and Language, Presentation, and Usefulness When Grouped according to Variables

Mann-Whitney U test results showed no significant differences in the peer evaluation of the instructional module in terms of objectives , content , format and language , presentation , and usefulness , respectively, when teacher evaluators were grouped as to sex. The two-tailed probabilities are greater than the set significance level of .05 alpha.

Results further implied that the module evaluation of the teachers does not differ in terms of sex.

Table 3 Differences in the Level of Peer Evaluation of the Instructional Module in Terms of Objectives, Content, Format and Language, Presentation, and Usefulness When Grouped according to Sex

Compared Means	Mean rank	U value	Sig. (2 tailed)	Interpretation
Objectives				
Male	5.00	6.000	.624	Not Significant
Female	4.20			
Content				
Male	3.17	3.500		

Female	5.30	.216		Not Significant
Format and Language				
Male	3.83			
Female	4.90	5.500	.546	Not Significant
Presentation				
Male	3.67			
Female	5.00	5.000	.424	Not Significant
Usefulness				
Male	4.00			
Female	4.80	6.000	.655	Not Significant

Kruskal-Wallis test results showed no significant differences in the peer evaluation of the instructional module in terms of objectives , content , format and language , presentation , and usefulness when teacher evaluators were grouped as to the number of years in service. The two-tailed probabilities are greater than the set significance level of .05 alpha.

Results further implied that the module evaluation of the teachers does not vary in terms of the number of years in service.

Table 3.1 Differences in the Level of Peer Evaluation of the Instructional Module in Terms of Objectives, Content, Format and Language, Presentation, and Usefulness When Grouped according to Number of Years in Service

Sources of Variations	df	Mean rank	X^2 value	Sig. (2-tailed)	Interpretation
Objectives					
1 – 5 years		5.88			
6 – 10 years	3	2.00	4.038	.257	Not Significant
11 – 15 years		4.25			
16 & above years		2.00			
Content					
1 – 5 years		6.50			
6 – 10 years	3	3.00	5.923	.115	Not Significant
11 – 15 years		2.00			
16 & above years		3.00			
Format and Language					
1 – 5 years	3	6.50			
6 – 10 years		3.50	6.146	.105	Not Significant
11 – 15 years		1.50			
16 & above years		3.50			
Presentation					
1 – 5 years		6.13			

6 – 10 years	3	3.50	4.351	.226	Not Significant
11 – 15 years		2.25			
16 & above years		3.50			
Usefulness					
1 – 5 years		6.50			
6 – 10 years	3	3.00	6.083	.108	Not Significant
11 – 15 years		1.50			
16 & above years		4.00			

Differences in the Level of Students' Evaluation of the Instructional Module in Terms of Format and Content when Grouped according to Variables

Mann-Whitney U test results showed no significant differences in the students' evaluation of the instructional module in terms of format and content when student evaluators were grouped as to sex. The two-tailed probabilities are greater than the set significance level of .05 alpha.

Results further implied that the module evaluation of the students does not differ in terms of sex.

Table 4 Differences in the Level of Students' Evaluation of the Instructional Module in Terms of Format and Content When Grouped according to Sex

Compared Means	Mean rank	U_{value}	Sig. (2-tailed)	Interpretation
Format				
Male	12.82	75.000	.200	Not Significant
Female	17.05			
Content				
Male	11.59	61.500	.064	Not Significant
Female	17.76			

Kruskal-Wallis test results showed no significant differences in the evaluation of the instructional module in terms of format and content when students' evaluators were grouped as to the number of years in service. The two-tailed probabilities are greater than the set significance level of .05 alpha.

Results further implied that the module evaluation of the teachers does not vary in terms of the number of years in service.

Table 4.1 Differences in the Level of Students' Evaluation of the Instructional Module in Terms of Format and Content When Grouped according to Campus of Origin

Sources of Variations	df	Mean	X^2 value	Sig. (2-tailed)	Interpretation
Format					
MAIN CAMPUS		19.9			Not Significant
SAN EN	3	17.33	7.669	0.053	
DINGLE		22.75			
DGAS		11.37			

Content					
MAIN CAMPUS		22			Not Significant
SAN EN	3	15.5	7.759	0.051	
DINGLE		21.88			
DGAS		11.63			

Summary of the Findings, Conclusions, and Recommendations

This chapter presents the summary of the findings, the conclusions drawn based on the results, and the necessary recommendations in accordance with the findings.

Summary of the Findings

This study aimed to determine the peer and students' evaluation of the existing module in Advanced Statistics (Non-Para) of Iloilo State College of Fisheries-Dumangas Campus for the 2nd Semester of School Year 2021-2022 for further enhancement.

Specifically, the study sought answers to the following questions:

1. What is the level of peer evaluation of the instructional module in terms of objectives, content, format and language, presentation, and usefulness?
2. What is the level of students' evaluation of the instructional module in terms of format and content?
3. Are there significant differences in the level of peer evaluation of the instructional module in terms of objectives, content, format and language, presentation, and usefulness when grouped according to sex and number of years in service?
4. Are there significant differences in the level of students' evaluation of the instructional module in terms of format and content when grouped according to sex and campus of origin?
5. What part of the developed instructional module needs enhancement?

The study's findings revealed that teacher evaluators evaluated the instructional module's objectives and content as *"very good,"* while format, language, presentation, and usefulness were evaluated as *"good."*

Also, student evaluators evaluated the instructional module's format and content as *"good."*

No significant differences were noted in the evaluation of instructional modules of both teacher and students' evaluators in terms of objectives, content, format and language, presentation, and usefulness when teachers and student evaluators were grouped according to sex and number of years in service and campus of origin.

Conclusions

From the findings of the study, the following conclusions were drawn:

1. The instructional module met the standards of the peer/teacher evaluators. The module is usable, self-instructional, and user-friendly.
2. The instructional module allows students to learn at their own pace. It is clear, comprehensive, and designed to meet the students' needs and capabilities.
3. The module is acceptable both to the students and teachers and ready for classroom use/possible circulation.

Recommendations

In view of the findings and conclusions drawn, the researcher recommends the following:

School Administrators should design and conduct annual training/writeshop on module-making for teachers and other instructional materials, religiously review the course content/curriculum and syllabi to further investigate the goal structures, and address and meet the challenges in the educational system.

Mathematics Professors should continue to create high-quality, comprehensive, and self-instructional modules in Mathematics to improve students' academic performance. Also, teachers should focus on the least mastered competencies alongside module-making, and review and revise their modules for an excellent rating from the students. Teachers should consider that every phase, from the design to the distribution of instructional modules, should relate to the learning outcomes. An efficient faculty preparation results in a practical instructional module of quality and relevance in the students' learning experiences.

For the researcher, though the findings of this study were quite favorable, improvements to the said module were still recommended. More examples, additional topics, and exercises will benefit the students. Online videos and tutorials must be incorporated/adopted to make Mathematics learning more exciting and fun.

The students should take time to read the modules designed to learn at their own pace, discover things independently, and improve their academic performance in Mathematics. Links to online videos and tutorials are reflected in the modules to browse in case problems arise and need clarification. More so, students were encouraged to develop an interest in module learning.

Future Researchers should conduct further studies to help address the gap between the current practice in developing and evaluating instructional modules.

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