# Instructional Module (IM) in Probability and Statistics for Mathematics Major Students: Apex, Pitfall, and Pilot

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**Abstract** –*Providing quality education by giving responsive instruction is one of the functions of higher education. In doing this, the faculty, particularly those who teach education students, need to provide variety of instructional strategies to the students as they are the ones who ignite the fire of learning. In this mixed-method study, the performance of 20 mathematics major students in Statistics and Probability was analyzed using the developed and validated instructional module. This aims to test the difference on the performance of the students subjected to pilot testing. It likewise explicates how participants respond to the utilization of the instructional module (IM) in Probability and Statistics class. Findings revealed that the utilization of instructional module (IM) was responsive in learning topics in Statistics but fall short in Probability topics. More so, the study found the apex, pitfall, and pilot of instructional module (IM) using the content analysis procedure. Based on the result of the anaysis, it was concluded that difficulties experienced by the students in using the instructional module (IM) could be lessen when the teacher paired it with direct instruction. Self-directed learning with the use of instructional module (IM) among students makes them the owners and managers of their learning. However, without proper facilitation, supervision and guidance coming from the teacher, the presumed learning would not be totally achieved. Hence, this study found that while using instructional module (IM) increases the performance of the students, there is still no substitute to the presence of teachers inside the class.*

***Keywords*** *–Instructional Module, Statistics, Probability*

## INTRODUCTION

Teaching Statistics and Probability is a challenging role for mathematics teachers. While the subject is included in the elementary and secondary curricula, studies show that students experience difficulties in learning the subject [1]-[3] that leads them to have below average performance in Mathematics [4]. Individual factors such as interest and readiness to learn are presented in various literatures [5]-[8]. Factors associated to teachers have also been found by studies across the globe [9]-[11]. These teacher factors include teaching strategies and approaches [12]-[15], inadequate teaching materials[16], teacher's content knowledge[17], and classroom management [18]. Despite initiatives on the use of different approaches in teaching this subject [19]-[22], reports on the performance of students still below the average competencies [23]. With this, it is necessary to go back to the basics and teach students in step-by-step procedure before let them experience unfamiliar technologies.

The Bachelor of Secondary Education (BSEd) in the Philippine Higher Educational System, is an undergraduate teacher education program designed to equip learners with relevant and adequate competencies in their chosen area of specialization in the secondary level [24]. Six major field of specializations composed the BSEd program. One of these six majors is Mathematics. Graduates of this major field are expected to exhibit competence in mathematics, proficiency in problem-solving, relating math to other disciplines, use appropriate approaches, methods and techniques in teaching mathematics, and mathematics appreciation. This program is composed of 20 major subjects in addition to other professional, general education, and subjects mandated by law. Included in major subjects is the Elementary Statistics and Probability. This course equips students with basic statistical tools to understand various phenomena including measures of central tendencies, variability, sampling, hypothesis testing and applications.

There are various strategies employed in teaching mathematics and one of which is the use of

modules[25]-[26].The use of modules in instruction helps in promoting self-directed learning among the students. Self-directed learning emphasizes the responsibility of the learners as owners and managers of their own learning and that learners have greater awareness of their responsibility in making learning meaningful and monitoring themselves [27]. The role of the teacher in self-directed learning is a facilitator than content transmitter with the assistance of instructional tools[28].

More so, the strategy about using module has been found effective in teaching mathematics students [29]-[31]. However, little is known about the views of students on the use of this strategy in class. Feedback is the means by which the learner ascertains whether targets have been achieved or not [32]. It is important to hear the voice of the students after exposing them to instructional initiative. This voice of the students could also be a source of inputs for further improvement on educational initiatives. Hence, this study tries to pilot test a developed and validated module to the mathematics major students using a mixed-method design of research.

## OBJECTIVES OF THE STUDY

This pilot testing of validated instructional module (IM) in Probability and Statistics for Mathematics major students determines the performance of the participants in their pre-test and post-test scores. It also explains the scores of the participants on the different activities provided in the instructional module (IM). Similarly, it tests the significant difference between the performance of the participants in Probability and Statistics topics as well as the pre-test and post-test scores of the participants. Lastly, the study explains the how participants respond to the utilization of instructional module in Probability and Statistics class.

## MATERIALS AND METHODS

### Research Design

This study utilized a mixed-method design of research that employs not only one type of research method [33]. The quantitative part focuses on describing scores of the students in pre-test, set of activities provided in the module, and post-test. The quantitative part also presents inferential statistics such as differences of pre-test, set of activities, and post-test scores. Qualitative part of the study shows the effectiveness of instructional module for delivering instruction in probability and statistics as gathered on the responses of the participants in one open ended question. Content analysis on the qualitative responses of the participants was utilized and interpretation using themes following procedures presented by Bengtsson, M. [34] was done.

### Participants

Twenty-one second year mathematics major students participated in the study. These students are enrolled in the Bachelor of Secondary Education program of the College of Teacher Education in one State University in Laguna more specifically, the Statistics and Probability discipline. Participants were selected using a purposive sampling technique.

### Instrumentation

The pre-test was given to the students prior to the use of instructional module (IM). The pre-test consists of 50-item test checked and validated by five mathematics and statistics professors and instructors in other colleges. The content of the pre-test consists of the intended learning outcomes of the students as anchored on the Commission on Higher Education Memorandum Order for the particular program. After the pre-test has been administered, the participants were given the hard copy of the instructional module (IM) in probability and statistics which was initially validated by the experts. There were 27 topics included in the instructional module (IM) focused on the History of Statistics, Importance, branches of Statistics, sources of data, variable and constant, scales of measurement, population and sample, sampling methods and techniques, data presentation (stem-and-leaf), textual, tabular, and graphical form, frequency distribution table, frequency polygons and cumulative frequency graph, measures of central tendencies (mean, median, mode) ungrouped and grouped, quantiles, measures of dispersion (range, variance, standard deviation, mean absolute deviation), standard score, normal curve, empirical rule and Chebyshev's theorem, fundamental counting principle, summation notation, factorials, permutation, combinations, probability, skewness and kurtosis, correlation (Pearson and Spearman), and Chi-square tests. Samples of lecture and activity are presented in figures 1-3. The study lasts one semester.

### Data Collection Procedure

Each student has given three hours per week to use the instructional module (IM) in probability and statistics. For each week, an activity is given to the students to answer. The study was conducted from August 2019 to December 2019. After the post test, participants were requested to respond to one open

ended question *(What is your feedback on the use of instructional module in class?).* Responses were retrieved by the researcher using online platform for the students to have ample time in making their responses and for them to have enough time to express themselves.

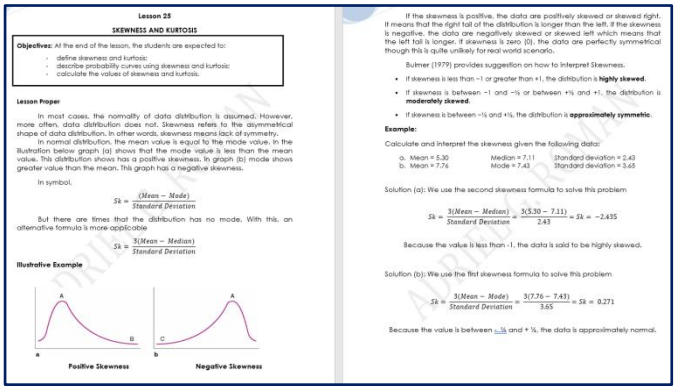


Figure 1. Sample Lecture in Skewness and Kurtosis presented in the Instructional Module

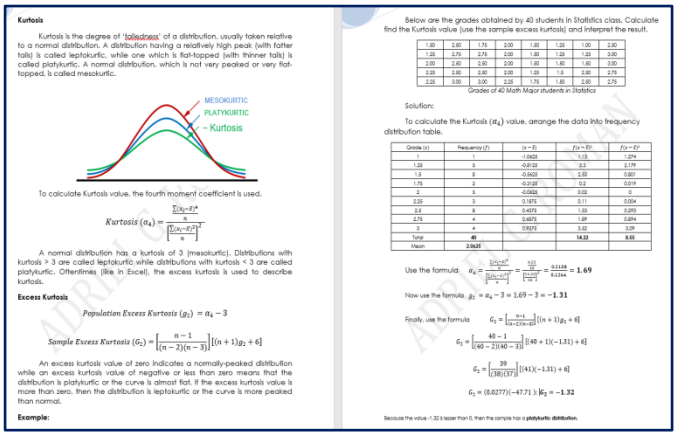


Figure 2. cont. Sample Lecture in Skewness and Kurtosis presented in the Instructional Module

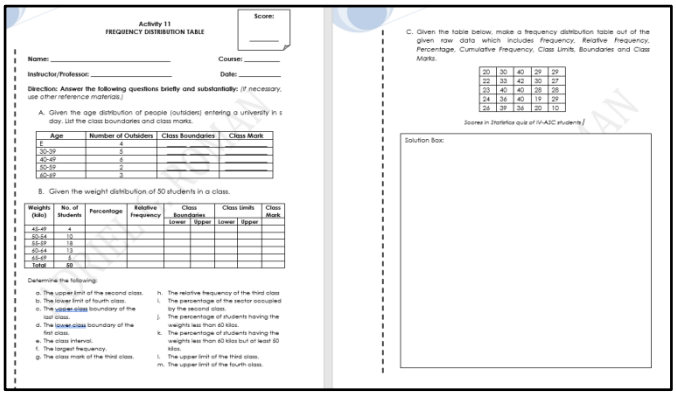


Figure 3. Sample Activity on Frequency Distribution Table as part of the Instructional Module

**Ethical Considerations**

Participants were also informed that they were selected as participants and informed consent was secured by the researcher. To ensure anonymity and confidentiality on the participant's responses, each was assigned a pseudonym and all quantitative scores were treated collectively. Similarly, participants were informed that they can use mother tongue in answering the open-ended question so that they could express freely themselves without language barriers. After all the data and responses have been gathered, the instructional module (IM) was returned to the participants for future use.

**Data Analysis**

Descriptive statistical treatments such as mean, standard deviation, were used in analyzing the gathered data together with Shapiro-Wilk test for normality, and t-test for inferential statistics at 5% alpha level of significance. For presenting qualitative responses, a content analysis was used in which three themes were identified such as apex, pitfall, and pilot of instructional module (IM). In analyzing the qualitative responses of the participants, the researcher assigned a codename.

## RESULTS AND DISCUSSION

The performance of the participants as revealed by their pre-test scores shows the level of satisfactory ($\bar{x} = 26.300$) with a standard deviation of 3.686. Using the Shapiro-Wilk Test of Normality, the pre-test scores of the participants follow a normal distribution (p-value=0.279). This result signifies that before the distribution of the instructional module (IM), the participants have satisfactory performance on the different topics in Statistics and Probability. This finding can be attributed to their initial statistics and probability subject during their high school. Statistics and Probability subject is a core subject in the Senior High School program under the K-12 curriculum in the Philippines. This subject is a required subject to be taken by all senior high school students [35].

Table 1. Performance of the Participants as Revealed by their Pre-test scores.

| Statistical Treatment | *Pre-Test* | Interpretation |
|---|---|---|
| Mean | 26.300 | Satisfactory |
| Standard Deviation | 3.686 | - |
| Shapiro-Wilk Test | 0.943 | Normally |
| P-value | 0.279 | distributed |

After given pre-test, each participant produced a hard copy of the instructional module (IM) developed by the researcher which was previously content

validated by the experts in the field of Mathematics and Statistics [36]. Several modifications were made by the researcher to respond to the current curriculum of the Mathematics major students. The performance of the participants for each topic is presented in the table.

Results showed that all participants got a perfect score on the assessment given focusing on the topics about standard score, normal curve, Empirical Rule and Chebyshev's Theorem. These topics include finding the area under normal curve of the z-scores, applying the Empirical rule to solve word problems. This set of topics leads students in making inferences. Also, participants got a perfect score on the assessment given about Chi-square test. This statistical treatment is one of the non-parametric tests that easily can be easily understood by the students due its frequency-based calculation. In this this test, participants should apply fundamentals of hypothesis testing procedures. Despite students' initial competency about the topics, participants failed to show satisfactory performance on the assessment given on the several topics such as the fundamental principles of counting, probability, skewness, kurtosis, and correlation. These results showed that instructional module (IM) would not be enough in teaching these particular topics involving Statistics and Probability. According to Groth et al. [37] students struggle in understanding probabilities specifically probability jargons which makes them to have difficulties in comprehending classroom discussions. Likewise, students may have appropriate quantitative information about probability but lacking, incomplete, or incorrectly used [38].

Table 2 presents the performance of the participants on different activities provided in the Instructional Module (IM).

The performance of the participants on Statistics-related topics and probability-related topics was analyzed and found that participants performed very satisfactory in Statistics topics $(\bar{x} = 87.316; sd = 10.128)$ while performed fairly satisfactory in probability topics. Based on the Shapiro-Wilk test of normality, both performances in assessments in Statistics topics and probability topics follow non-normal distribution signifying heterogenous data. This implicates the responsiveness of the instructional module (IM) in statistics topics but falls short in probability topics. The result conforms to what [39] concluded that while probability [theory] is quite simple, the abstract model part of this is not and it requires long period of studying/learning. Through this, a necessity of making separate instructional module (IM) focusing on probability concepts be made available. The combination of two large mathematics fields in one module is not ideal for the students for it will be beneficial to one field but not on the other.

Table 2. Performance of the Participants on different activities provided in the Instructional Module (IM)

| Topics | Average | Rank |
|---|---|---|
| History of Statistics | 91.43 | 11.00 |
| Definition and Importance of Statistics | 90.79 | 12.00 |
| Branches of Statistics | 84.13 | 16.00 |
| Sources of Data | 80.95 | 21.00 |
| Variable and Constant | 83.17 | 18.00 |
| Scales of Measurement | 95.24 | 5.00 |
| Population and Sample | 90.32 | 13.00 |
| Sampling Methods and Techniques | 87.14 | 14.00 |
| Stem-and-Leaf Diagram | 93.97 | 7.00 |
| Textual, Tabular, and Graphical Form | 81.14 | 20.00 |
| Frequency Distribution Table | 96.25 | 4.00 |
| Frequency Polygons and Cumulative Frequency Graph | 91.90 | 10.00 |
| Mean (Grouped and Ungrouped Data) | 85.95 | 15.00 |
| Median (Grouped and Ungrouped Data) | 92.86 | 8.00 |
| Mode (Grouped and Ungrouped Data) | 95.00 | 6.00 |
| Quantiles (Quartiles, Deciles and Percentiles) | 82.62 | 19.00 |
| Measures of Dispersion | 80.29 | 22.00 |
| Standard Score, Normal Curve, Empirical Rule and Chebyshev's Theorem | 100.00 | 1.50 |
| The Fundamental Counting Principle | 53.33 | 27.00 |
| Summation Notation | 83.81 | 17.00 |
| Factorial | 92.14 | 9.00 |
| Permutation | 80.00 | 23.00 |
| Combination | 97.78 | 3.00 |
| Probability | 69.68 | 24.00 |
| Skewness and Kurtosis | 65.71 | 25.00 |
| Correlation | 64.76 | 26.00 |
| Chi-square Goodness-of-fit | 100.00 | 1.50 |

Table 3 presents the performance of the participants on different activities provided in the Instructional Module (IM).

The performance of the participants as revealed by their post-test scores is shown in the table. The average

performance of the participants during the post-test categorizes as very satisfactory ($\bar{x} = 34.667; sd = 6.995$). The probability value after performing Shapiro-Wilk test is found 0.392 indicating that the scores are normally distributed.

Table 3. Performance of the Participants on different activities provided in the Instructional Module (IM)

| Subject Content | Mean | SD | SW-value | P-value |
|---|---|---|---|---|
| Statistics Topics | 87.316 | 10.128 | 0.858 | 0.006 |
| | Very Satisfactory | - | *Not Normally Distributed* | |
| Probability Topics | 79.458 | 13.038 | 0.901 | 0.037 |
| | Fairly Satisfactory | - | *Not Normally Distributed* | |
| Both | 85.57 | 9.578 | 0.903 | 0.040 |
| | Very Satisfactory | - | *Not Normally Distributed* | |

This result showed that after subjecting the participants into 18-weeks experiment using the Instructional Module (IM), their performance had shown remarkable increased. In addition, based on the standard deviation, compared to the pre-test scores, result of the post-test scores is more variable. However, the Shapiro-Wilk test of normality revealed that data still follow a normal distribution path. This result shows the movement of the bell shape curve distribution towards higher performance. The findings of the study agreed to the findings of [40] that the use of interactive instructional moduleincreases the performance of students in Mathematics and Physics. This increase obtained on the participants' scores from Satisfactory to Very Satisfactory marks a positive implication on the use of instructional module (IM) in teaching. Attribution can be counted to the salient features of the instructional module which were highly acceptable to the evaluators [36].

Table 4. Performance of the Participants as Revealed by their Post-test scores.

| Statistical Treatment | *Post-Test* | Interpretation |
|---|---|---|
| Mean | 34.667 | Very Satisfactory |
| Standard Deviation | 6.995 | - |
| Shapiro-Wilk Test | 0.952 | Normally |
| P-value | 0.392 | distributed |

Both scores of the participants in the assessments given follow non-normal distribution. Using Wilcoxon test, result shows that there is significant difference between the scores of the participants in the Statistics-related assessments and probability-related assessments ($z = -2.694; p - value = 0.007$). This finding shows that participants performed very satisfactory in Statistics while fairly satisfactory in probability. This shows that instructional module (IM) is responsive on Statistis topics while less responsive when teaching probability topics. This insinuates that the instructional module (IM) is greatly applicable to learning Statistics concept but not on the Probability topics.

Table 5. Difference on the Mean Percentage Scores of the Participants in Statistics and Probability Topics

| Topics | Mean Percentage | z-value | p-value | Difference |
|---|---|---|---|---|
| Statistics | 87.316 | -2.694 | 0.007 | Significant |
| Probability | 79.458 | | | |

The difference between the pre-test and post-test scores of the participants garnered a t-value of 6.342 with a p-value of <0.001. This signifies that there is a significant difference between the pre-test and post-test scores of the participants. Further, the use of Instructional Module (IM) makes a difference of 8.367 on the scores of the participants which is equivalent to 31.81% increase in the performance of the participants. This means that the use of instructional module in 18-week Statistics and Probability class increases the performance of students by 31.81%. Module-based instructional strategy improves students' mathematical ability [41] since they have more time to be used for learning the lesson instead of taking notes on teachers' lectures [42].

Table 6. Difference on the Mean Scores of the Participants in Pre-Test and Post-Test

| Test | Mean | SD | t-value | p-value | Difference |
|---|---|---|---|---|---|
| Pre | 26.300 | 3.686 | 6.342 | <0.001 | Significant |
| Post | 34.667 | 6.995 | | | |

The responses of the participants on the utilization of instructional module (IM) were analyzed using content analysis and three themes emanated from the responses namely: Apex of Instructional Module; Pitfall of Instructional Module; and Pilot of Instructional Module. Each theme is defined and presented in the succeeding tables together with the excerpts on the participant's condensed responses (see tables 7-9 in the appendix).

**Apex of Instructional Module**

The apex of instructional module (IM) can be categorized as appreciation and enjoyment, clarity and consistency, helpfulness, informative, production, self-guided learning, timeliness, usefulness, and variety of activities. Participants of the study showed appreciation

and enjoyment on the use of instructional module (IM) due to the clarity and consistency of discussion. They also mentioned that the instructional module (IM) is helpful and useful in their future quantitative research because Statistics and Probability are important aspects in quantitative data analysis. Participants also found the instructional module (IM) as informative with variety of activities. They also believed that this promotes self-guided learning. With this, participants hoped that the IM be published and be available for production. The use instructional module (IM) makes learning more effective since it enables students on having control of their learnings [43] and use the material without disturbing their normal duties and responsibilities [44].

**Pitfall of Instructional Module**

Several categories composed the pitfall of instructional module such as corrections and modifications, difficult experiences, disappointment, and lack of confidence. Several of the participants have seen few typographical errors in some of the lessons presented in the instructional module (IM). Similarly, other participants struggled on the use of instructional module while one participant felt disappointed because of expectation on how the subject should be taught. One participant also showed lack of confidence about understanding the topics presented in the instructional module. This result signifies that while instructional module is found useful and helpful, it has some corrections that lead to modification of the actual manuscript. These feedbacks of the participants are parallel to what Tan-Espinar, and Ballado [45] received from the participants after utilizing the developed worktext in basic mathematics. Comments include clarity of instructions, spelling and defining terms, provision of additional illustrations, editing and detailed discussions.

**Pilot of Instructional Module**

Participant's recognized the role of the teacher as facilitator of learning. Despite having individual copy of the instructional module, participants still looked on the explanations provided by the teacher. Participants also preferred being taught by the teacher rather than by the use of instructional module alone. According to the participants, modular workbook (instructional module) made the discussion gone smoothly because they have already read the lesson before the teacher explains it but the instructor made it clearer. Participants also had become excited when the teacher was about to explain the content of the topic because they believe that lessons are well learned when teacher is the one who explains it to them. This result provides an implication about the perceptions of the students on independent learning. They preferred to be taught by the teachers who explains the lesson to them rather than discovering the learning through the instructional module given among themselves. This supports the idea of supplementary learning that instructional module should not be the sole source of learning but only serves as tool that promotes and supports learning. This result reveals the importance of teachers in facilitating learning.

Parallel to this, Michael [46], concluded that students preferred lecture methods, discussion, problem-solving, demonstration, project, inquiry approach, cooperative learning and use of audio-visual media instructional strategies in Mathematics in which according to them, lessons are easy to understand when delivered using these methods.

## CONCLUSION AND RECOMMENDATION

Providing quality education through responsive instruction is one of the highlights in higher education. In doing this, the faculty, particularly those who teach education students, need to provide variety of instructional strategies to the students as they are the ones who ignite the fire of learning. Based on the study, the utilization of instructional module (IM) is responsive in learning topics in Statistics but fall short in Probability topics. Instructional module is found responsive in topics such as areas under normal curve, Empirical rule, and chi-square test but not on skewness and kurtosis and probability concepts. By definition, a module is a unit of work that is virtually self-contained. Based on the responses of the participants, the utilized instructional module (IM) satisfies this definition. Instructional module (IM) has its apex and pitfall as manifested on students' experiences. If a Mathematics teacher is planning to use this approach in teaching the subject, consideration should be given on these pitfalls. Difficulties experienced by the students in using the instructional module (IM) may be lessen when the teacher paired it with direct instruction. Self-directed learning with the use of instructional module (IM) among students makes them the owners and managers of their learning. However, without proper facilitation, supervision and guidance coming from the teacher, the presumed learning would not be totally achieved. For this reason, while using instructional module (IM) increases the performance of the students, there is still no substitute to the presence of teachers who will facilitate students' learning. Students need a variety of

instructional strategies that suit to their intelligences. To answer this, the developed instructional module (IM) should provide differentiated activities catering multiple intelligences of the learners. With the limited number of participants included in the study, the result could not create a more concrete conclusion about the utilization of instructional module (IM) but more on baseline information on voicing out the future Mathematics teachers' behaviors on utilizing instructional module. For this reason, similar studies using wide latitude of participants be conducted.

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**APPENDIX**

Table 7. The Condensed Reflections of the Participants' Responses: Apex of Instructional Module

| Condensed Meaning Unit | Code | Category | Theme |
|---|---|---|---|
| Thinking of being most lucky because of experience in using the book | Being appreciative about the output | Appreciation and enjoyment | Apex of instructional module |
| Learners will surely enjoy statistics in a whole new experience | Enjoy | Appreciation and enjoyment | |
| The discussion is so fun and full of knowledge | Fun discussion | Appreciation and enjoyment | |
| Starts from the basics that helps to build a strong foundation | Clear discussion | Clarity and consistency | |
| Because of modular workbook, the subject becomes easier | Easy to understand | Clarity and consistency | |
| The book has an understandable explanation about certain lessons as it used light words | Easy to understand | Clarity and consistency | |
| The word that was used in the book was easy to understand. | Easy to understand | Clarity and consistency | |
| Modular workbook is very helpful. Serves us a guide in every lesson | Helpful in understanding the topic | Helpful | |
| The modular workbook helps to know many things about statistics and probability | Helpful in understanding the topic | Helpful | |
| The modular workbook is really essential, also for future use. | Helpful in understanding the topic | Helpful | |
| Modular workbook gives a lot of information | Infomative | Informative | |
| Thinking that modular workbook retains knowledge | Infomative | Informative | |
| Hope this modular workbook will be published at low cost so that many students will buy | Recommendations for production | Production | |
| Hoping that the book will be finished and published | Recommendations for production | Production | |
| The modular workbook is equivalent to 3 books of elementary statistics and probability | Recommendations for production | Production | |
| The modular workbook helps to assess students on what they already know | Self-guided learning | Self-guided learning | |
| The modular workbook serves as guide | Self-guided learning | Self-guided learning | |
| Modular workbook is an alternative guide to understand the lesson | Supplementary learning tool | Self-guided learning | |
| The modular workbook is an alternative guide | Supplementary learning tool | Self-guided learning | |
| Because of modular workbook, time became productive | Time productivity | Timeliness | |
| Do not even notice the time | Time productivity | Timeliness | |
| Guide to research | Guide in research | Usefulness | |
| I can use to my future thesis | Guide in research | Usefulness | |
| Useful in conducting thesis | Guide in research | Usefulness | |
| Ready for real-life math education | Provide learnings | Usefulness | |
| The modular workbook is very useful | Useful | Usefulness | |
| More complex and challenging activities | Variety of activities | Variety of activities | |
| Test ourselves if students understand the activities | Variety of activities | Variety of activities | |

Table 8. The Condensed Reflections of the Participants' Responses: Pitfall of Instructional Module

| Condensed Meaning Unit | Code | Category | Theme |
|---|---|---|---|
| There is few typographical errors in some lessons | Typographical errors | Corrections and modifications | Pitfall of instructional module |
| Some of the words have typographical errors | Typographical errors | Corrections and modifications | |
| Some parts of the book with a typographical error | Typographical errors | Corrections and modifications | |
| Some parts of the book with a typographical error | Typographical errors | Corrections and modifications | |
| The modular workbook has many typographical errors | Typographical errors | Corrections and modifications | |
| There are few cases of typographical errors. | Typographical errors | Corrections and modifications | |
| There are minimal typographical errors | Typographical errors | Corrections and modifications | |
| There are some typographical errors | Typographical errors | Corrections and modifications | |
| Difficult yet challenging | Difficult | Difficult experiences | |
| Difficult yet challenging | Difficult | Difficult experiences | |
| Difficulty because of the step by step procedures | Difficult | Difficult experiences | |
| Difficulty despite of being guided by the examples | Difficult | Difficult experiences | |
| Found some problems difficulty to solve but still enjoy solving | Difficult | Difficult experiences | |
| Its not easy to answer all of the questions | Not easy | Difficult experiences | |
| Some activities did not answer | Difficult | Difficult experiences | |
| Struggle on the last part of the modular workbook | Struggle on the last part | Difficult experiences | |
| The last topics are difficulty | Difficult | Difficult experiences | |
| First time to get disappointed | Disappointment | Disappointed | |
| Harder than expected | Harder than expected | Harder than expectation | |
| Not confident about understanding the topics correctly | Not confident | Lack of confidence | |

Table 9. The Condensed Reflections of the Participants' Responses. Pilot of Instructional Module

| Condensed Meaning Unit | Code | Category | Theme |
|---|---|---|---|
| Become more exciting when the professor is there to teach and discuss what inside the modular workbook is | Excitement when the professor teaches the content | Excitement for professor's discussion | Pilot of instructional module |
| Better when our instructor explains the content of the modular workbook. | Much better when the instructor explains the content | Teacher as a facilitator | |
| Still prefer that the teacher is the one who teaches his students than studying through a modular workbook. | Preference to instructor over module | Teacher over module | |
| The teacher explained to us all the topic in a modular workbook | Importance of teacher over modular workbook | Teacher over module | |
| Modular workbook makes the discussion goes smoothly, because students already read the lesson before the instructor explain it, but the instructor make it more clearer, so students can easily understand the lesson . | Much better when the instructor explains the content | Comparison of teacher over the module | |
| The modular workbook is not that much helpful if the teacher wouldn't explain it well. | Much better when the instructor explains the content | Comparison of teacher over the module | |
| The modular workbook is precise/prefered to have discussion than working on a book because I understand the lesson more when it is discussed by the teacher. | Much better when the instructor explains the content | Comparison of teacher over the module | |
| We are free to consult and ask about the queries | Importance of teacher over modular workbook | Comparison of teacher over the module | |