**Report 3—Formative Evaluation**

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**Name of Developer:** Melissa Kustra **Date:** April 18, 2022

**Part I**

**COMMENTS ON REVISIONS—REPORT 2 REVISIONS**

**Comments on Revisions:**

I received feedback on my terminal objective in report 2. I had included two verbs “isolate” and “modify.” I revised my terminal objective to be only modify and included isolate as part of my steps to modifying. Since modify encompassed isolate, this revision made the most sense and aligned with what I wanted learners to be able to do after instruction. I also made some revisions to my subordinate skills analysis after receiving feedback that I had two of the same subskills. I altered this so that the overall skill was to identify if WFPB key terms were included in the recipe and made “distinguish between WFPB ingredients and non-WFPB ingredients” a substep. I also changed some of the terminology used in my objectives, revising “substitute” to “ingredient.” I believe this added consistency in my objectives.

Another feedback point from report 2 was that one of my practice questions was actually asking learners to recall a list, when my intention was for learners to define a WFPB lifestyle. I revised this question to include a list of the key elements and food categories and encouraged learners to use the list when defining WFPB. Finally, while not officially included in my report 2 revisions, I realized that I had too many practice items in my instructional module. I reduced the number of practice items for certain objectives where I felt one practice item would suffice.

**Revised Goal Statement and Instructional Analysis:**

**Instructional Goal:** Learners will modify non-WFPB recipes following the Whole Foods Plant Based (WFPB) criteria.

**Terminal Objective: what the learner will be able to do at the end of the session:**

Given a collection of recipes, learners will correctly modify non-WFPB recipes to adhere to the WFPB criteria.

**Subordinate Skills Analysis:**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Goal Analysis Steps*** | ***Goal Analysis Substeps*** | ***Subordinate Skills*** | ***Entry Behaviors*** |
| 1. Isolate recipes based on food preferences | 1.1 Review given recipes | 1.1.1 Name food preferences | Read recipes and ingredient lists |
| 1.2 Select recipes based on food preferences |  |  |
| 2. Discern whether WFPB key terms are included in the recipe title | 2.1 Determine if WFPB key terms are included in recipe title | 2.1.1 Name WFPB key terms |  |
| 3. Classify recipes with WFPB key terms and recipes without WFPB key terms | 3.1 Identify whether recipes with WFPB key terms contain all WFPB ingredients | 3.1.1 Define a WFPB lifestyle |  |
| 3.1.2 Distinguish between WFPB ingredients and non-WFPB ingredients |  |
| 3.2 Identify whether recipes without WFPB key terms contain all WFPB ingredients |  |  |
| 4. Modify all recipes that contain non-WFPB ingredients to follow WFPB criteria | 4.1 For each recipe, substitute non-WFPB ingredients with WFPB ingredients | 4.1.1 Identify WFPB food substitutions | Distinguish between food items in the five main food groups |

**OVERVIEW**

**Program Title:** Modifying Recipes to Follow Whole Food Plant-Based Living

**Target Audience:** Individuals who have or are at risk of having heart disease, diabetes or certain cancers and individuals interested in healthy living, incorporating more whole foods and reducing the number of processed foods in their diet.

### PROGRAM DESCRIPTION

## Instructional Objectives and Assessment Items:

1. When required to define WFPB lifestyle, correctly define a WFPB lifestyle.
2. Given a list of recipes, isolate recipes to select based on food preferences.
3. Given a list of recipe titles, correctly discern whether WFPB key terms are included in the recipe titles.
4. Given a list of ingredients, correctly distinguish between WFPB and non-WFPB ingredients.
5. Given a list of recipes with WFPB key terms and recipes without WFPB key terms, correctly identify whether recipes contain non-WFPB ingredients.
6. Given WFPB criteria, correctly identify WFPB food substitutions.
7. Given recipes containing non-WFPB ingredients and the WFPB substitution chart, correctly substitute non-WFPB ingredients with WFPB ingredients.
8. Terminal Objective: Given a collection of recipes, learners will correctly modify non-WFPB recipes to adhere to the WFPB criteria.

|  |  |  |  |
| --- | --- | --- | --- |
| **Objectives** | **Relevant Steps, Sub steps, Subordinate Skills from Instructional Analysis** | **Assessment Item (Question #)** | **Included on…** |
| 1. When required to define WFPB lifestyle, (CN), correctly (CR) define a WFPB lifestyle (B). | 3.1.1 Define a WFPB lifestyle | Question 1 | Pretest and Posttest |
| 2. Given a list of recipes (CN), isolate recipes to select (B) based on food preferences (CR). | 1. Isolate recipes based on food preferences  1.1 Review given recipes  1.1.1 Name food preferences  1.2 Select recipes based on food preferences | Question 2 | Pre-test and Posttest |
| 3. Given a list of recipe titles (CN), correctly (CR) discern whether WFPB key terms are included in the recipe titles (B). | 2. Discern whether WFPB key terms are included in the recipe title  2.1 Determine if WFPB key terms are included in recipe title  2.1.1 Name WFPB key terms | Question 3  Question 4 | Pretest and Posttest |
| 4. Given a list of ingredients (CN), correctly (CR) distinguish between WFPB foods and non-WFPB ingredients (B) | 3.1.2 Distinguish between WFPB foods and non-WFPB foods | Question 5  Question 6  Question 7 | Pretest and Posttest |
| 5. Given a list of recipes with WFPB key terms and recipes without WFPB key terms (CN), correctly (CR) identify whether recipes contain non-WFPB ingredients (B). | 3. Classify recipes with WFPB key terms and recipes without WFPB key terms  3.1 Identify whether recipes with WFPB key terms contain all WFPB ingredients  3.2 Identify whether recipes without WFPB key terms contain all WFPB ingredients | Question 8  Question 9 | Pretest and Posttest |
| 6. Given WFPB criteria (CN), correctly (CR) identify WFPB food substitutions (B). | 4.1.1 Identify WFPB food substitutions | Question 10  Question 11  Question 12  Question 13  Question 14 | Pretest and Posttest |
| 7. Given recipes containing non-WFPB ingredients and the WFPB substitution chart, (CN), correctly (CR) substitute non-WFPB ingredients with WFPB ingredients (B) | 4. Modify all recipes that contain non-WFPB ingredients to follow WFPB criteria  4.1 For each recipe, substitute non-WFPB ingredients with WFPB ingredients | Question 15  Question 16  Question 17 | Pretest and Posttest |
| 8. Terminal Objective:  Given a collection of recipes, learners will correctly modify non-WFPB recipes to adhere to the WFPB criteria | 1. Isolate recipes based on food preferences  2. Discern whether WFPB key terms are included in the recipe title  3. Classify recipes with WFPB key terms and recipes without WFPB key terms  4. Modify all recipes that contain non-WFPB ingredients to follow WFPB criteria | Question 18 | Pretest and Posttest |

**Part II**

### TRYOUT PROCEDURES

**Participants:**

I recruited nine learners to participate in my instructional lesson tryout. At the beginning of the semester in January, I emailed about fifteen individuals asking if they have an interest in learning more about Whole Food Plant-Based (WFPB) living through a lesson I would be developing and distributing at the end of the semester. Nine participants responded that they were interested in being volunteer participants in my instructional module. In my follow up email, I outlined the time and work commitments and gave a brief timeline for when the learners would be participating (mid-April).

Since learners volunteered to be participants based on their interest in learning more about WFPB living, learners are representative of the target population. In addition, three of the nine learners are interested in incorporating more whole foods and plants into their diet due to family history of cancer, heart disease and other personal health concerns. I chose learners based on their interest and their offer to volunteer to participate in my instructional lesson. Learners range in age, although all learners are over 25 years old and most are below 60 years old. There are four females and five males. Learners range in formal educational background and most learners have average prior experience and knowledge of WFPB.

**Process:**

To conduct the small group evaluation, I sent an email containing instructions on how to complete the lesson and accompanying materials. Materials were attached to the email via a Google drive link. Materials including the pre-test, post-test, attitude survey and instructional lesson. Instructions informed learners of the order the documents should be viewed and completed and the deadline for returning the documents back to myself. I asked learners to print the module if possible and encouraged learners to contact me via email if they have any questions or concerns. I gave learners a week (seven days) to complete the 30-minute lesson and accompanying documents. The instructional lesson had an area on the lesson cover for learners to record the time they started and completed the lesson. While eight of my nine learners were distance learners, one learner was local, and I asked and received permission from the learner to observe them while they took the lesson. While the learner took the lesson, I noted facial expressions and body language. I also timed this learner myself.

Within the pre-test, I communicated that learners are not expected to know the answers and encouraged learners to try their best. Within the attitude survey, I communicated that the survey is to evaluate the instruction in order to encourage learners to provide honest feedback. Once all learners returned their pre-test, post-test and attitude survey, I began to conduct the formative evaluation. I plan to follow up with learners to thank them again for being participants and to let them know how they did on their post-test. I also plan to share the updates on my instructional module, so learners know their feedback was helpful and valuable in improving the instruction.

**Data Sources and Collection:**

Learners’ age, contact information, prior education and prior experience and knowledge was collected in an informal email, text and in-person communication between learners prior to distributing the instructional materials. Achievement data was collected through a print-based pre-test and post-test, which contained identical assessment items and values. Attitude data was collected through a print-based attitude survey. The pre-test, post-test and attitude survey were created using Microsoft Word and distributed to learners via an email which had a Google drive link on April 4th. Learners were given instructions to take the pre-test prior to the instructional lesson and complete the post-test and attitude survey after completion of the instructional lesson. Documents were left in Word format in case learners did not have the ability or access to print the evaluation materials. Evaluation materials were collected on April 10th—which was the deadline for learners to return their tests and surveys.

### RESULTS

**Achievement Data**

I believe the instruction for objective 1—defining WFPB—does not need to be revised since the mean score was 89%. In addition, none of the learners were able to define WFPB on the pretest—the mean score for objective 1 was 0%. On the post-test, learners’ mean score was 89%.

Instruction for objective 4—distinguish between WFPB and non-WFPB ingredients does not need to be revised. The mean score on the pre-test was 41% and 85% on the post-test. Learners achieved this objective and increased their mean score by 44%. Instruction for objective 5—identifying non-WFPB ingredients in a recipe—does not need to be revised as learners’ mean score was 31% on the pre-test and 78% on the post-test, making an increase in mean score of 47%. Instruction for objective 7—substituting non-WFPB ingredients for WFPB ingredients in a recipe—does not need to be revised as learners’ mean score was 18% on the pre-test and 82% on the post-test, making an increase in the mean score of 64%. Finally, I believe that instruction for objective 8 (the terminal objective)—modifying non-WFPB recipes to adhere to the WFPB criteria—does not need to be revised. Learners’ mean score was 33% on the pre-test and 78% on the post-test. Learners’ mean score increased by 45%. Since the terminal objective was a complex performance task, requiring learners to apply and sequence other objectives, I believe learners achieved the terminal objective.

The instruction for objective 2—isolating recipes based on feed preferences—however does need to be revised. Since there was no incorrect answer for objective 2, the mean score on the pre-test and post-test was 100%. After analyzing objective 2 and reflecting on learners’ feedback that isolating recipes based on food preferences seemed unrelated and not useful, objective 2 could be either removed either from the instruction all together, removed from the pre-test or converted to a pre-requisite skill. The instruction for objective 3—discerning whether WFPB key terms are include in recipe titles—needs to be revised since the mean score on the post-test was low, 45%. While learners did show improvements from the pre-test (mean score of 28%), it is clear that learners did not achieve this objective.

The instruction for objective 6—identifying appropriate WFPB substitutions—may need to be revised. While learners received a mean score of 96% on their post-test, learners did fairly well on their pre-test (78%). There was only an improvement of 18%. This section may need to be made more complex or the test items for this objective may need to be revised to include more complex test items. Revisiting the instruction for objective 2 and 3 should be made a priority. Looking at the overall assessment items and pre- and post-tests, learners’ total mean score on the pre-test was 38% and 77% on the post-test—illustrating that total mean score increased by 39%.

**Attitude Data**

Overall learners were positive toward the lesson, since there were no survey responses in the ‘not at all (0)’ column and only one survey response in the (1) column. Learners were confident they could perform the skill on your own, with seven of the nine learners saying they were ‘very confident’ and two learners saying they were close to very confident. Learners’ confidence that they could perform the skill had a mean score of 3.78—the highest mean score for all the questions. Learners felt the module was visually attractive, which is an attitude that is supported by learners’ comments.

Regarding clarity, learners felt the objectives of the lesson (3.56) and the examples (3.67) were clear, however, the clarity of the explanations had a lower mean score of 3.44. Overall, learners felt the lesson was clear and felt that the practice problems prepared them for the test and that the feedback was useful on practice problems. Both of these questions (question 6 and 7) had a mean score of 3.67, with a majority of learners selecting ‘very.’

Learners didn’t perceive lesson as very interesting (attention) or useful (relevance). The lowest mean score (2.89) was for interest in the module. Three learners felt neutral towards the interest of the module. The second lowest mean score (3.00) was usefulness of the skills taught in the lesson. The overall satisfaction of the lesson however was 3.33. With only 3 learners saying they were ‘very satisfied with the lesson’ and 6 saying they were close to very satisfied with the lesson. Improving motivational design of the lesson and providing more explanation on the relevance of the lesson to learners’ lives should be added. See Appendix 3 Summary of Attitude Survey Responses for more information.

**Time Data and Observations**

In my email communications and instructions, I asked learners to record time spent on pre-test, post-test and the instructional module. However, learners only recorded their time spent on the instructional module. This is likely due to the time marks (“Start” and “Finish”) included on the module. I did not provide time marks on the pre- and post-test, therefore, learners may have forgotten to include their time spent. However, I observed one of my learners and recorded their time on the pre- and post-test. Learner A spent 22 minutes on the pre-test and 15 minutes on the post-test. As seen in Appendix 4 Instructional Module Time Data, seven of the nine learners spent around 30 minutes, however, one learner spent 2 hours and 10 minutes and another spent 45 minutes, which brought the mean time score to 43 minutes.

While eight of my nine learners were distance learners, I had the opportunity to observe one learner—learner A—during the small group evaluation. During this observation I noted their body language and facial expressions. Learner A’s facial expressions remained fairly neutral during the instructional lesson. During the pre- and post-test, the learner was very focused and displayed a ‘thinking’ face consistently. There were a few “mmm” sounds indicating a few recipes that sounded yummy. Learner A’s body language was relaxed and there were 7 times when learner A flipped back through the module to double check information.

### DISCUSSION AND REVISIONS FROM SMALL GROUP EVALUATION

**Post-Test:**

Learners appeared to have problems on questions 3 and 4, which addressed objective 3—“Given a list of recipe titles, correctly discern whether WFPB key terms are included in the recipe titles.” Learners did not master this objective. I believe the nature of the low scores on question 3 and 4 was due to a lack of practice with questions. Perhaps the learners should have been given a list and asked to choose or match the terms to ‘Strictly WFPB’ and ‘Related WFPB.’

I also saw a trend that learners identified vanilla extract and baking soda as non-WFPB claiming it was processed. I believe a revision should be to spend more time defining processed and giving examples and non-examples of processed foods. There were also areas of concerns with learners’ lack of knowledge toward certain ingredients. Learners noted question marks by some ingredients indicating that the did not know what it was. In addition, in the terminal objectives, only 1 learner out of 9 learners recognized that the broccoli soup recipe had vegan cheese—which is highly processed and therefore non-WFPB. This was a mistake on my part. On many areas of the test, I should have explained in brackets what certain unfamiliar or uncommon ingredients were and spent more time defining processed foods.

## Overall, learners took close to 30 minutes to complete the module. I noticed that the learners who spent the longest on the module and the one learner who spent the least amount of time on the module received the lowest post-test scores. Learner B, who took 2 hours and 10 minutes to complete the module, received a 74% on the post-test. Learner H, who spent 45 minutes, received a 70% on the post-test. These correlations may suggest that there was too much information or text presented for these learners, and learners B and H were experiencing information overload which influenced their comprehension of the module. These correlations may also suggest that learner B and H did not hold the required prior knowledge and therefore took longer on the module and did not understand the objectives and content fully. Finally, learner D, who spent 25 minutes on the module, received a 65% on the post-test. This correlation may suggest that not enough time was spent to read, participate in the practice and feedback items and comprehend the module. See Appendix 4 Instructional Module Time Data for more information.

**Objectives:**

I believe the only objective that was not mastered was objective 3—“Given a list of recipe titles, correctly discern whether WFPB key terms are included in the recipe titles.” I feel this objective was not achieved because there was not sufficient information provided in the instruction for this objective. Learners struggled to identify the two kinds of key terms from a list of other recipe descriptions, more practice should also have been provided to ensure comprehension and achievement of this objective.

**Terminal Objective:**

I believe learners achieved my terminal objective: “modifying non-WFPB recipes to adhere to the WFPB criteria.” The terminal objective was assessed in test item 18 and was a complex performance task. Learners’ mean score was 33% on the pre-test and 78% on the post-test. Learners’ mean score increased by 45%.

**Attitude Survey Comments:**

Looking at the learner comments, many learners felt the module was visually appealing and enjoyed the graphics. Some learners mentioned that the module was interesting, and the recipes were useful. The ‘on the side learner’ in my module, Maria, was mentioned and identified as a nice addition that helped illustrate the examples. Learners felt the module was too long and wordy (four learners) and two learners felt that the module was repetitive. One learner noted that the module never explained what the WFPB acronym stood for. Two learners misinterpreted the survey to include the pre- and post-test and commented on the frustrating format of the tests. Since these tests were designed to be printed, they had existing lines and spaces for pencil and pen marks. However, these two distance learners typed into the tests on their computer and experienced formatting issues.

When asked how the lesson could be changed as to make it better, learners suggested making the module more concise and removing the food preferences section as it did not seem necessary. One learner mentioned that the lesson would be more effective if the ‘why’ of a WFPB lifestyle was covered and another learner suggested including a meal plan template for future application. Learner comments and comment frequency are displayed in Appendix 3 Summary of Attitude Survey Responses.

**Revisions to The Post-Test and Formative Evaluation Materials:**

In general, I should have adapted the design of the print-based tests to be electronic to meet the needs of my learners—who were a majority distance learners. There was some frustration with the formatting of the tests which may have contributed to learner’s overall satisfaction of the lesson. I would also give clearer instructions when delivering the attitude survey that the survey only pertains to the instructional materials and not the pre- and post-tests.

I would revise the test items for objective 3—“Given a list of recipe titles, correctly discern whether WFPB key terms are included in the recipe titles.” Learners appeared to have problems on questions 3 and 4 and did not master this objective (post-test score of 45%). While instruction for this objective also needs to be revised, I would revise the test questions by first having a question that gives learners a list of only the WFPB key terms and then asks learners to choose or match the terms to ‘Strictly WFPB’ and ‘Related WFPB.’ Objective 3 test items should be scaffolded. I would then give another question that asks learners to discern the WFPB key terms from non-WFPB recipe key terms. This way, learners could reference the previous above question that lists the WFPB key terms.

In addition, I believe it should be noted that the attitude survey would have been more effective with written descriptors rather than number descriptors. During formative evaluation data summary, specific descriptors would have led to a more accurate and informative collection of how learners felt. I would revise the attitude survey to be statements and have the scale as “Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree.”

**Revisions to The Instructional Materials:**

I would revise the instruction module by reducing the amount of text and information presented. Learners’ comments mentioned that they felt the module was repetitive and too wordy. In addition, learners suggested the improvements of making the module more concise. I agree with learner comments and while I reduced the amount of information and text prior to distributing the module, it is clear that the module must be further revised to reduce the amount of information and made more concise. To ensure learners achieve objective 3 however, more information, examples and practice should be added on WFPB key terms.

I would revise the module to include more activities and more explanation on the relevance of the lesson to learners’ lives. Learners did not appear to be interested in the module and were not satisfied with the module’s usefulness. I believe including more on the ‘why’ of a WFPB lifestyle would increase learners’ motivation and the lesson’s relevance to learners’ lives. I would also remove objective 2—isolating recipes based on food preferences—from the module and include it as a pre-requisite skill. The pre- and post-test data show that objective 2 is not needed since all learners successfully achieved this objective on the pre-test.

I would revise the instruction for objective 6—identifying appropriate WFPB substitutions. Learners achieved this objective, but there was only an improvement of 18% on this objective. I would make the information on this objective more complex and include more difficult or ‘tricky’ examples and non-examples in the instruction. This may also address concerns with learners’ lack of knowledge toward certain ingredients. For example, learners added question marks by some ingredients indicating that the did not know what it was—some of these ingredients were scallions, star anise, cardamom.

Finally, there was a trend of learners identifying vanilla extract and baking soda as non-WFPB claiming it was processed. In addition, in the terminal objectives, only 1 learner out of 9 learners recognized that the broccoli soup recipe had vegan cheese—which is highly processed and therefore non-WFPB. I would revise the instruction on objective 1 and 6 to include a more detailed definition of “processed foods” and offer more examples and non-examples of processed foods. On many areas of the test, I would explain in brackets what certain unfamiliar or uncommon ingredients were.

## APPENDIX 1 Learner Characteristics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learner** | **Age** | **Gender** | **Highest Formal Education** | **Prior Knowledge/Experience with the Content** |
| A | 29 | M | Undergraduate (BACC) | Average |
| B | 62 | M | Highschool Diploma | Average |
| C | 28 | F | Bachelors (B.Ed) | Below Average |
| D | 27 | M | Bachelors (B.Ed) | Below Average |
| E | 36 | F | Masters (M.Ed.) | Below Average |
| F | 38 | M | Highschool Diploma | Below Average |
| G | 25 | F | Bachelors (B.S.F.) | Below Average |
| H | 51 | F | Bachelors (B.Ed) | Below Average |
| I | 27 | F | Undergraduate (B.Sc.) | Average |

|  |  |  |
| --- | --- | --- |
| **Learner** | **Name** | **Contact Information (email)** |
| A | Michael Hirschauer | michaelhirschauer@hotmail.com |
| B | Garth McFadden | gmcfadden@fvwireless.com |
| C | Kinnon Yargeau | klrsmith101@hotmail.com |
| D | Josh Yargeau | jyargeau@hotmail.com |
| E | Stephanie Mace | s\_mace@hotmail.com |
| F | Josh Mace | No personal email (same household as Stephanie Mace):  s\_mace@hotmail.com |
| G | Saya Hutton | sayamnh@gmail.com |
| H | Shona Bagai | shonabagai@yahoo.com |
| I | Jamie Cross | jamiecross@gmail.com |

## APPENDIX 2. Pre-test and Post-test Table for Performance Data Summary

**Pre-test Results Objective for Modifying Recipes to Follow Whole Food Plant-Based Living**

*The table summarizes the results of 9 pre-tests as scored by the designer.*

| **Question** | Max. Points | **Mean Score** | **%** |
| --- | --- | --- | --- |
| **Objective 1 Define WFPB** | **1** | **0.00** | **0%** |
| **Q. 1** Short answer definitions– whole food plant-based (WFPB) | 1 | 0.00 | 0% |
| **Objective 2 Identify food preferences** | **1** | **1.00** | **100%** |
| **Q. 2** Short answer – isolate recipes based on food preferences | 1 | 1.00 | 100% |
| **Objective 3 Discern whether WFPB key terms are included in recipe titles** | **2** | **0.56** | **28%** |
| **Q. 3** Identify WFPB key terms– ‘Strictly WFPB’ key terms | 1 | 0.56 | 56% |
| **Q. 4** Identify WFPB key terms– ‘Related WFPB’ key terms | 1 | 0.00 | 0% |
| **Objective 4 Distinguish between WFPB and non-WFPB ingredients** | **3** | **1.23** | **41%** |
| **Q. 5** Match – identify WFPB and Non-WFPB | 1 | 0.11 | 11% |
| **Q. 6** Match – identify WFPB and Non-WFPB | 1 | 0.56 | 56% |
| **Q. 7** Match – identify WFPB and Non-WFPB | 1 | 0.56 | 56% |
| **Objective 5 Identify non-WFPB ingredients within a recipe** | **4** | **1.22** | **31%** |
| **Q. 8** Identify non-WFPB ingredients and explain why items are not WFPB | 2 | 1.11  10/18 | 56% |
| **Q. 9** Identify non-WFPB ingredients and explain why items are not WFPB | 2 | 0.11  1/18 | 11% |
| **Objective 6 Identify appropriate WFPB food substitutions** | **5** | **3.9** | **78%** |
| **Q. 10** Multiple choice – substitution for coconut oil (sweet) | 1 | 0.56 | 56% |
| **Q. 11** Multiple choice – substitution for oil (savory) | 1 | 0.89 | 89% |
| **Q. 12** Multiple choice – substitution for eggs (savory) | 1 | 0.78 | 78% |
| **Q. 13** Multiple choice – substitution for cow milk | 1 | 0.78 | 78% |
| **Q. 14** Multiple choice – substitution for chicken | 1 | 0.89 | 89% |
| **Objective 7 substitute non-WFPB ingredients for WFPB ingredients** | **3** | **0.55** | **18%** |
| **Q. 15** Short answer – write WFPB substitution | 1 | 0.11 | 11% |
| **Q. 16** Short answer – write WFPB substitution | 1 | 0.22 | 22% |
| **Q. 17** Short answer – write WFPB substitution | 1 | 0.22 | 22% |
| **Objective 8 (Terminal Objective) modify non-WFPB recipes to adhere to the WFPB criteria** | **4** | **1.33** | **33%** |
| **Q. 18** Performance task/short answer – isolate recipe based on food preferences, identify and substitute non-WFPB ingredients | 4 | 1.33  12/36 | 33% |
| **TOTAL:** | **23** | **8.74** | **38%** |

**Post-test Results Objective for Modifying Recipes to Follow Whole Food Plant-Based Living**

*The table summarizes the results of 9 post-tests as scored by the designer.*

| **Question** | Max. Points | **Mean Score** | **%** |
| --- | --- | --- | --- |
| **Objective 1 Define WFPB** | **1** | **0.89** | **89%** |
| **Q. 1** Short answer definitions– whole food plant-based (WFPB) | 1 | 0.89 | 89% |
| **Objective 2 Identify food preferences** | **1** | 1.00 | 100% |
| **Q. 2** Short answer – isolate recipes based on food preferences | 1 | 1.00 | 100% |
| **Objective 3 Discern whether WFPB key terms are included in recipe titles** | **2** | **0.89** | **45%** |
| **Q. 3** Identify WFPB key terms– ‘Strictly WFPB’ key terms | 1 | 0.56 | 56% |
| **Q. 4** Identify WFPB key terms– ‘Related WFPB’ key terms | 1 | 0.33 | 33% |
| **Objective 4 Distinguish between WFPB and non-WFPB ingredients** | **3** | **2.56** | **85%** |
| **Q. 5** Match – identify WFPB and Non-WFPB | 1 | 0.67 | 67% |
| **Q. 6** Match – identify WFPB and Non-WFPB | 1 | 0.89 | 89% |
| **Q. 7** Match – identify WFPB and Non-WFPB | 1 | 1.00 | 100% |
| **Objective 5 Identify non-WFPB ingredients within a recipe** | **4** | **3.11** | **78%** |
| **Q. 8** Identify non-WFPB ingredients and explain why items are not WFPB | 2 | 1.78 | 89% |
| **Q. 9** Identify non-WFPB ingredients and explain why items are not WFPB | 2 | 1.33 | 67% |
| **Objective 6 Identify appropriate WFPB food substitutions** | **5** | **4.78** | **96%** |
| **Q. 10** Multiple choice – substitution for coconut oil (sweet) | 1 | 1.00 | 100% |
| **Q. 11** Multiple choice – substitution for oil (savory) | 1 | 1.00 | 100% |
| **Q. 12** Multiple choice – substitution for eggs (savory) | 1 | 0.78 | 78% |
| **Q. 13** Multiple choice – substitution for cow milk | 1 | 1.00 | 100% |
| **Q. 14** Multiple choice – substitution for chicken | 1 | 1.00 | 100% |
| **Objective 7 substitute non-WFPB ingredients for WFPB ingredients** | **3** | **2.45** | **82%** |
| **Q. 15** Short answer – write WFPB substitution | 1 | 0.67 | 67% |
| **Q. 16** Short answer – write WFPB substitution | 1 | 0.78 | 78% |
| **Q. 17** Short answer – write WFPB substitution | 1 | 1.00 | 100% |
| **Objective 8 (Terminal Objective) modify non-WFPB recipes to adhere to the WFPB criteria** | **3.11** | **0.78** | **78%** |
| **Q. 18** Performance task/short answer – isolate recipe based on food preferences, identify and substitute non-WFPB ingredients | 4 | 3.11 | 78% |
| **TOTAL:** | **23** | **17.79** | **77%** |

## APPENDIX 3 Summary of Attitude Survey Responses

*Modifying Recipes to Follow the WFPB Criteria*

### SUMMARY OF STUDENT ATTITUDE SURVEY

A summary of 9 student responses.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Question** | **Very**    **(4)** | **(3)** | **(2)** | **(1)** | **Not at all**  **(0)** | **Mean Score** |
| 1. How interesting was this lesson? | **2** | **4** | **3** |  |  | **2.89** |
| 2. To what degree is the skill taught in this lesson useful to you? | **4** | **2** | **2** | **1** |  | **3.00** |
| 3. How confident are you that you can perform this skill on your own? | **7** | **2** |  |  |  | **3.78** |
| 4. How clear were the objectives of this lesson? | **5** | **4** |  |  |  | **3.56** |
| 5. How clear were the explanations? | **5** | **3** | **1** |  |  | **3.44** |
| 6. How clear were the examples? | **6** | **3** |  |  |  | **3.67** |
| 7. How well did the practice problems prepare you for the test? | **6** | **3** |  |  |  | **3.67** |
| 8. How useful was the feedback on the practice problems? | **7** | **1** | **1** |  |  | **3.67** |
| 9. To what degree was the format (color, typeface, spacing, and other physical features) of the lesson visually attractive? | **6** | **2** | **1** |  |  | **3.55** |
| 10. How satisfied were you with the overall lesson? | **3** | **6** |  |  |  | **3.33** |
| **Total** | **51** | **30** | **8** | **1** |  | **3.50** |

11. What did you like about the lesson?

* Enjoyed learning about healthy alternatives to fatty foods **1**\*
* Useful recipes **3**
* Visually appealing **6**
* Useful **1**
* Interesting **3**
* Clear objectives and expectations **2**
* Liked Maria to illustrate examples **2**

12. What did you dislike about the lesson?

* Too long **1**
* Too wordy **3**
* I don’t know what WFPB stands for **1**
* Repetitive **2**
* Test formats were frustrating, no space to type **2**

13. How should the lesson be changed so as to make it better?

* Make it shorter **1**
* Remove food preferences section. Didn’t seem necessary **2**
* Define acronyms **1**
* Make more concise  **2**
* Talk more about the why of a WFPB lifestyle **1**
* Provide a resource or template at end for meal plan **1**

\*Number of times mentioned.

## APPENDIX 4 Instructional Module Time Data

A summary of 9 student responses.

|  |  |  |  |
| --- | --- | --- | --- |
| **Learner** | **Time (minutes)** | **Post-Test Score** | |
| A | 36:00 | **20/23** | **87%** |
| B | 2:10:00 | **17/23** | **74%** |
| C | 31:00 | **18/23** | **78%** |
| D | 25:00 | **15/23** | **65%** |
| E | 30:00 | **20/23** | **87%** |
| F | 30:00 | **19/23** | **83%** |
| G | 30:00 | **22/23** | **96%** |
| H | 45:00 | **16/23** | **70%** |
| I | 28:00 | **22/23** | **96%** |
| **Mean Time** | **43:00** |  |  |