

Three-Tiered Assessment Plan

Richard B. Goldsmith

Trevecca Nazarene University

IDT 5130 Interactive and Digital Tools for Instructional Design

Dr. Nicole Kendall Arrighi

September 11, 2023

Three-Tiered Assessment Plan

Overview of Three-Tiered Assessment Plan Assignment

Throughout this course, *IDT 5130 Interactive and Digital Tools for Instructional Design*, I developed two learning programs. First, a 5-level gamification model addressed the engagement among newly hired elementary teachers. This "Growing Fruit Game" for new teacher orientation employed gamification elements to stimulate motivation while learning about essential information and processes. Second, a Rise 360 course on "Technology Integration and Software Skills Training" provided technical training for elementary teachers in preparation for an upcoming laptop rollout program. This Rise 360 course examined the needs of 21st-century learners and employed a mobile social learning model to address them.

This paper will provide a three-tiered assessment plan for both instructional design products. This assessment plan utilizes formative, summative, and confirmative assessments to support the needs of my target audiences (TA). It is essential to have a three-tiered assessment plan to provide a holistic, comprehensive, and objective evaluation of a learning program and the effectiveness of trainee learning. As stated by Morrison et al. (2019), "Formative, summative, and confirmative evaluations serve the complementary purposes of assessing both developing and completed instructional programs" (p. 359). Finally, instructional goals and objectives guide all three types of assessment; therefore, each assessment requires numerous data sources.

Since this assignment overviews my three-tiered assessment plan, it will be divided into three segments. The formative assessment section will overview the strategies used to determine the needs of my targeted audiences. Also, this section will overview the formative assessments employed, remediations, and forms of data collection in my "Growing Fruit Game" and "Technology Integration and Software Skills Training" Rise 360 course. Next, the summative assessment segment will address the seven procedures for determining program effectiveness.

Three-Tiered Assessment Plan

Lastly, the confirmative assessment part will outline learner-centered and context-oriented approaches.

Tier One - Formative Assessment

Conscientious instructional designers may invest considerable time developing what they consider to be a perfectly effective and efficient learning program. However, once this ideal program is practically applied in the classroom, changes will most likely need to be made. Formative assessment can be compared to the quality assurance stage in the design process. It provides feedback to the designer, instructor, or planning team about the alignment of the learning program with course objectives as it unfolds. As a result, "Formative testing and revision (and retesting and further revision, if necessary) are important for the success of an instructional design plan" (Morrison et al., 2019, p. 272).

What strategies did you use to determine the needs of your target audiences?

I will perform a thorough needs assessment to determine the requirements of my target audiences for my learning programs. Each needs assessment will examine the following learner attributes: general characteristics, particular entry attributes or necessary skills for instruction, academic details, individual and social traits, culturally diverse learners, individuals with disabilities, and adult learners (Morrison et al., 2019). While my "Growing Fruit Game" is intended for new hires, and my "Technology Integration and Software Skills Training" Rise 360 course is intended for intermediate elementary teachers, my target audiences may overlap and participate in both learning programs. Therefore, I will conduct the same needs assessment of both target audience groups. Afterward, I will analyze this data to determine if more strategies are required to meet the needs of my target audiences. Finally, I would include SMEs,

Three-Tiered Assessment Plan

instructors, trainees, stakeholders, and data collection into each needs assessment plan to determine acceptable evidence.

To define the general characteristics, academic details, cultural backgrounds, and potential of individuals with disabilities of each target audience, I would seek information from the school's human resources department. Portions of this information could be obtained through job applications, personnel records, or the individual's training background. Since it is imperative to maintain confidentiality and adhere to ethical considerations when referring to personnel records, I could use aggregate or unidentified records. Regarding specific entry characteristics, Morrison et al. (2019) state, "Knowing the learners' skills, attitudes, and aptitudes is obviously important in determining the appropriate entry-level and difficulty level of the instruction" (p. 55). Therefore, I would use an objective-based pretest to assess aptitudes. My learners' personal and social characteristics (e.g., motivation, expectations, special talents) will affect the design and delivery of my course so I will incorporate informational questionnaires, interviews, and attitudinal surveys.

Formative Assessments in My Learning Programs

Formative assessments are essential to the instructional design and development process as key indicators of revision and retesting. Using multiple data sources can objectively inform the designer about the effectiveness and efficiency of the learning program. Formative assessments can include performance tests, observations, written tests, interviews, portfolios, questionnaires, and exhibitions (Morrison et al., 2019). The authors comment, "Generally speaking, there is a greater need for multiple data sources in formative evaluations because one is interested not only in the effectiveness of particular elements but also in how to improve those

Three-Tiered Assessment Plan

that are not working as planned" (p. 275). Finally, for formative assessments, testing is critical in all stages of instruction: pretesting (prior to), embedded testing (while), and post-testing (after).

Four formative assessment types are highlighted in our course textbook: "...connoisseur-based, decision-oriented, objectives-based, and public relations–inspired studies" (Morrison et al., 2019, p. 341). The objectives-based category will monitor the effectiveness of the learning programs in achieving their objectives. Objective-based studies typically use pretest-posttest designs to measure growth in achievement. A constraint of this assessment is the limited information for improving the learning program. To compensate for this shortcoming, Morrison et al. (2019) suggest, "...it may make sense to combine expert opinion (i.e., connoisseur-based study) with the objectives-based results" (p. 343).

The formative evaluation approach I used in both learning programs includes objectives-based and connoisseur-based (expert opinion). These assessments are directly aligned with the instructional goals and objectives of the learning programs. In my "Growing Fruit Game" for Week Three, each new elementary teacher was matched with two veteran teacher mentors. These veteran mentors will assume a servant coaching role as they monitor the new teacher's progress, address questions, offer support, and remain with each new teacher for the next three years. These mentors will provide the formative assessments of interviews and observations to monitor new teacher progress, which will be reported to the mentor training team. Finally, the "Growing Fruit Game" for Week Three includes numerous e-learning modules embedded within the district's LMS, including multiple-choice, multiple responses, matching, questionnaires, short answers, and portfolio artifacts.

Three-Tiered Assessment Plan

My "Technology Integration and Software Skills Training" Rise 360 course is intended for intermediate elementary teachers, which will provide "...for the appropriate training before the teachers start the year and difficulties develop with the technology" (Morrison et al., 2019, p. 35). My Rise 360 course delivers objectives-based and connoisseur-based (expert opinion) formative assessments within a mobile social learning model. This course currently delivers numerous e-learning modules embedded within the district's LMS, including multiple-choice, multiple responses, matching, and short answers. Subsequent Rise 360 learning modules will include formative assessments such as portfolio website development, screencast creations, Twitter, and Wikis for social learning. Twitter and a course learning Wiki will include polling data (e.g., true/false, Likert Scale short-answer responses), furnishing immediate formative assessment feedback to myself and the learning community.

Mechanisms and Techniques for Remediation

Since both learning programs incorporate objective-based formative assessments within e-learning modules, the technology can easily monitor each learner's progress. As presented in the CLAS Network (2015) informational video, "Formative assessments provide teachers with the data to personalize learning," so differentiation can occur using the CLAS Framework of Ready, Reinforced, Reteach, and Reach. As learners progress, the e-learning technology must achieve a specific standard of 90%, which will be the criterion specified by the instructional objectives. As Morrison et al. (2019) overviewed, "Criterion-referenced testing includes measuring how well each learner attains the required level of comprehension and competence specified for each objective. This degree of achievement is independent of the performance of other students" (p. 283). Finally, the goal of setting criteria promotes the concept of mastery

Three-Tiered Assessment Plan

learning, which is ideal for self-paced learning methods such as those found in my learning programs.

As learners advance through each e-learning module, they must achieve a 90% on each Knowledge Check (Quiz), demonstrating that they are Ready to progress to the next module. Otherwise, they might need Reinforcement through additional practice and engaging in learning activities. Moreover, other learners might need Reteaching to aid understanding and clarification, which can be accomplished by reviewing course materials and supplemental information. Learners who routinely score above 90% on quizzes will advance or Reach through the e-learning modules more quickly and need to be challenged with higher-level formative assessment activities such as portfolios and website development.

Results of Formative Data Collection

Formative data is essential for monitoring the success of my learning programs and student achievement. As Morrison et al. (2019) elaborates, "Formative evaluations are most valuable before instruction is fully developed, when it is inexpensive to make changes. They are also most valuable when used continuously, at different phases of the design process" (p. 275). The results of this data can inform further development of my learning programs. The ongoing nature of data from formative assessments will produce a continuous, iterative process for my instructional design products.

Most data collected through formative assessments in my "Growing Fruit Game" and "Technology Integration and Software Skills Training" Rise 360 course occurs within self-directed e-learning modules. This assessment data will personalize the learning process so differentiation can occur using the CLAS Framework of Ready, Reinforced, Reteach, and Reach mentioned above (CLAS Network, 2015). The connoisseur-based (expert opinion) formative

Three-Tiered Assessment Plan

assessments in my "Growing Fruit Game" include interviews, observations, questionnaires, and portfolio artifacts that must be monitored by the veteran mentors and reported to the mentor training team for analysis. Likewise, my "Technology Integration and Software Skills Training" Rise 360 course contains formative assessments such as portfolio website development, screencast creations, Tweets, and Wikis, which will require expert opinion and collaboration among the training team. After careful data analysis from my learning programs, necessary changes can be made.

Tier Two - Summative Assessment

One of the essential purposes of summative assessment is to measure the degree to which the closing of a course achieves its primary objectives. Both final examinations and unit post-tests can serve as essential data and information sources. Also, summative assessments can benefit instructional designers by providing data on the effectiveness of the learning materials. Likewise, these evaluations can provide data to instructors on student success and areas for remediation. As highlighted by Morrison et al. (2019), summative assessments are practical methods for measuring student and training learning in addition to the following:

1. Efficiency of learning (material mastered/time)
2. Cost of program development
3. Continuing expenses
4. Reactions toward the course or program
5. Long-term benefits of the program (Morrison et al., 2019, p. 273)

The completion rates of instructional objectives and goals are a driving factor behind data analysis of summative evaluations. Whereas "formative evaluation asks, "How are we doing?" summative assessment asks, "How did we do?" (Morrison et al., 2019, p. 275). Formative

Three-Tiered Assessment Plan

assessment places equal emphasis on processes and outcomes, whereas summative assessment prioritizes the importance of outcomes or products. While all three types of testing can be used in both summative evaluations, it is unmistakable that post-testing holds the greatest importance and serves as the primary foundation for drawing conclusions about the instruction. In regard to determining program outcomes, Morrison et al. (2019) state, "A summative evaluation permits a designer or instructor to reach unbiased, objective answers to evaluation questions concerning expected program outcomes and then to decide whether the program is achieving those outcomes" (p. 345).

Seven Procedures for Determining Program Effectiveness

An imperative goal for an instructional designer is developing effective and efficient learning programs. As highlighted by the authors of our course textbook, to judge the effectiveness of learning, a designer should be able to answer the question, "To what degree did students accomplish the learning objectives prescribed for each unit of the course?" (Morrison et al., 2019, p. 347). Moreover, Morrison, Ross, Morrison, and Kalman outline seven fundamental steps or processes for assessing program effectiveness, which include:

1. Specifying program objectives
2. Determining the evaluation design for each objective
3. Developing data collection instruments and procedures for each objective
4. Carrying out the evaluation
5. Analyzing the results from each instrument
6. Interpreting the results
7. Disseminating the results and conclusions (Morrison et al., 2019, p. 348)

Three-Tiered Assessment Plan

My "Technology Integration and Software Skills Training" Rise 360 course begins with an overview of specific program objectives. Each learning outcome was analyzed to determine the best way it should be evaluated. Also, the data collection methods and procedures aligned with each goal. An important consideration is presented by Morrison et al. (2019), "As with formative evaluations, data collection addresses one or more of the three domains of skills: behavior, cognitive, and affective. The main difference in summative evaluation is judging a completed rather than developing program" (p. 348).

A main characteristic of my summative assessments focuses on adult learners. These learners will require a training program that is structured systematically, relevant, and integrates the teacher's own pedagogical experience (Morrison et al. 2019). These adult learners will also participate in hands-on, practical learning activities with direct classroom application (Morrison et al. 2019). For the summative assessments involving cognition, objective tests within my Rise 360 course include multiple choice, multiple responses, matching, and short answers, which will occur at the end of each learning module. Summative assessments that measure skills and procedures will involve the elementary teachers creating website portfolios containing screencast videos as exhibitions.

These teacher-created screencasts will serve as summative assessments and will be graded; however, I will add several additional components. First, a grading rubric will be given to teachers in advance that details the necessary components of the screencast. Also, teachers will grade their screencasts, which I will consider a component of their final grade. Afterward, teachers will upload their screencasts to their course website portfolios. These digital artifacts will serve as direct observations of naturally occurring events used in the teacher's classroom instruction.

Three-Tiered Assessment Plan

Additional summative assessments will measure affective outcomes such as interviews, questionnaires, and open-ended questions that will be addressed in a reflection paper. These evaluations will include reactions from learners, instructional staff, and stakeholders. Opinion evaluations will involve the appropriateness of course content, teaching techniques, instructor-student relationships, necessary study hours, and grading processes. Interest evaluations will incorporate responses to the value of course topics, preferred learning activities, and motivation for further study. Attitudinal reactions will include evaluations of the overall program, measuring enjoyment, value, and usefulness. Finally, these summative assessments for affective outcomes will involve gaining insight from the learners as they reflect on the program they just finished.

Afterward, the instructional designer will examine and diagnose all summative evaluations. Next, I will host individual discussions and group meetings with pertinent stakeholders. During these informative sessions, an evaluation report will provide a condensed overview to quickly capture the essential results. I will follow the recommendation of Morrison et al. (2019), "Describe supporting data in visual ways with graphs rather than as detailed tables; use artwork as appropriate" (p. 359). Lastly, I will conclude the evaluation report by offering suitable suggestions for the program's future, including options for continuation, expansion, adjustment, or discontinuation.

Relationship Between Formative and Summative Assessment

In formative and summative methods, what gets assessed is directly influenced by instructional goals. My "Technology Integration and Software Skills Training" Rise 360 course began with an overview of specific program objectives that were measured by formative and summative assessments within the course. The main focus of formative assessments is either on enhancing instruction, program effectiveness, or improving student success. Likewise,

Three-Tiered Assessment Plan

summative assessments are practical methods for measuring student and training learning in addition to the following: efficiency of learning, cost of program development, continuing expenses, reactions toward the course or program, and long-term benefits of the program (Morrison et al., 2019, p. 273).

Both formative and summative assessments require multiple sources of data. As Morrison et al. (2019) comments, "Because most units of instruction have multiple objectives with different focuses, all three evaluation approaches require varied sources of outcome data" (p. 275). The Rise 360 course delivers objectives-based and connoisseur-based (expert opinion) formative assessments within a mobile social learning model. This course currently delivers numerous e-learning modules embedded within the district's LMS, including multiple-choice, multiple responses, matching, and short answers. Twitter and a course learning Wiki will include polling data (e.g., true/false, Likert Scale short-answer responses), furnishing immediate formative assessment feedback to myself and the learning community.

Since the Rise 360 course incorporates objective-based formative assessments within e-learning modules, the technology can easily monitor each learner's progress. Differentiation can occur using the CLAS Framework of Ready, Reinforced, Reteach, and Reach. As learners advance through each e-learning module, they must achieve a 90% on each Knowledge Check (Quiz), demonstrating that they are Ready to progress to the next module. Otherwise, they might need Reinforcement through additional practice and engaging in learning activities. Other learners might need Reteaching to aid understanding and clarification, which can be accomplished by reviewing course materials and supplemental information. Learners who routinely score above 90% on quizzes will advance or Reach through the e-learning modules more quickly and need to be challenged with higher-level formative assessment.

Three-Tiered Assessment Plan

Both formative and summative assessments complement each other regarding processes, products, time of testing, and evaluation windows. Formative evaluation places equal emphasis on both processes and outcomes. Summative evaluations assign more significance to outcomes or products. In formative evaluations, assessment is essential throughout all stages of instruction, including pretesting, integrated testing, and post-testing. While all three testing types can be applied in summative assessments, post-testing is the most crucial and is the primary foundation for drawing conclusions about the instruction. Formative and summative assessments occur at distinct moments in my Rise 360 course, yet their purposes significantly intersect. Morrison et al. (2019) highlight this principle, "Regardless of when an evaluation is conducted, its results can almost always be used to inform further development of the instruction" (p. 276).

Tier Three - Confirmative Assessment

Confirmative assessment originates from the reasoning that the evaluation of instruction should be ongoing and, as a result, go beyond summative assessment. This assessment relies on multiple data sources "...such as questionnaires, interviews, performance assessments, self-reports, and knowledge tests" (Morrison et al., 2019, p. 274). Moreover, Morrison, Ross, Morrison, and Kalman highlight the investigation of certain questions that are relevant to the confirmative evaluator, which include:

1. Do learners continue to perform successfully over time?
2. Do materials still meet their original objectives?
3. How can clients' needs be best met over time?
4. If improvements are needed in the training or materials, how can they be made most effectively?
5. If the instruction is not working as well as originally, what are the reasons?

Three-Tiered Assessment Plan

6. Should the instruction be continued, revised, or terminated? (Morrison et al., 2019, p. 274)

Like formative and summative assessment, confirmative assessment is influenced by the role of instructional objectives, multiple data sources, processes, products, and testing windows. Instructional objectives and goals directly determine confirmative assessment. Confirmative evaluation assesses all training outcomes; however, it typically occurs after the conclusion of instruction and often in the real work setting, such as the workplace. Like summative assessment, confirmative evaluations assign more importance to outcomes or results.

While all three testing methods can be used in confirmative assessment, it is evident that post-testing is the most crucial and is the primary foundation for developing conclusions about the instruction. Our course textbook authors comment, "Confirmative evaluation, however, should generally include repeated post-testing to monitor performance over time" (Morrison et al., 2019, p. 275). Confirmative evaluation is performed after the learning program has been implemented for an extended time, typically at least six months to a year (Morrison et al., 2019). Appropriate, reasonable, and low-cost data sources for continuing assessment include the following methods: completing questionnaires, conducting interviews, making observations, and examining records.

In our course textbook, *Designing Effective Instruction*, two fundamental circumstances justify the implementation of confirmative evaluation studies. One category is *learner-oriented* and centers on assessing how effectively individuals who have participated in a learning program sustain the essential skills and knowledge required to achieve desired performance levels over an extended period. Another category is *context-oriented*, which addresses the extent to which the instructional program retains its effectiveness as circumstances evolve, including

Three-Tiered Assessment Plan

factors such as policies, politics, resources, and technological advancements. In the following sections, I will outline how the "Technology Integration and Software Skills Training" Rise 360 course approaches learner and context orientations for confirmative evaluation within a training program.

The Rise 360 course took place in an educational setting but involved training on software skills and technology integration. For training programs, Morrison et al. (2019) recommend, "Three areas may need to be assessed in post-training evaluation: appropriateness of the training, competencies of the employees, and benefits to the organization" (p. 357). The summative assessment sections within the Rise 360 course involved cognition, skills, and procedures. For the summative assessment that involved cognition, objective tests within my Rise 360 course included multiple choice, multiple responses, matching, and short answers, which occurred at the end of each learning module. Summative assessments measuring skills and procedures involved the elementary teachers creating website portfolios containing screencast videos as exhibitions. These digital artifacts directly demonstrated naturally occurring events used in the teacher's classroom instruction.

Learner-Oriented Approach

The confirmative evaluation using a learner-oriented approach will occur at six-month, nine-month, and twelve-month intervals. At each stage, direct observations of teacher classroom websites and classroom instruction will be done to evaluate the incorporation of technology integration concepts and software skills. Afterward, elementary teachers will be interviewed to examine the helpfulness of different elements of course content and activities in meeting their job demands.

Three-Tiered Assessment Plan

Teachers will review the Rise 360 course content, assessments, classroom portfolio websites, and teacher-created screencasts during these interviews. Next, they will complete a questionnaire assessing how training or materials were effective or ineffective. Open-ended questions will provide opportunities for learners to reflect on training that was not working as well as originally intended and any potential reasons. Morrison et al. (2019) comment on the importance of this information: "From these data, the evaluation study identified course components that were successful for long-term achievement of objectives and those that were not" (Morrison et al., 2019, p. 275). Lastly, inconsistencies in learner performance or comprehension will be recognized, and adjustments to the program will be made to conform to developing learner needs.

Context-Oriented Approach

The confirmative evaluation using a context-oriented approach will occur at six-month, nine-month, and twelve-month intervals. This context-oriented approach for confirmative evaluation will determine if the instruction meets its objectives as conditions and policies evolve. There might be diminishing effectiveness in my Rise 360 learning program on technology integration and software skills training due to the following: learner characteristics, the training need, curriculum expectations, or teacher support (Morrison et al., 2019).

At each stage, observations of teacher classroom websites and classroom instruction will be done to assess the inclusion and updating of technology integration concepts and software skills. Next, elementary teachers, the school principal, and pertinent stakeholders will be interviewed to assess any changes in the educational curriculum, teacher characteristics, technology, budget, or teacher support for using the program. Likewise, questionnaires, which include open-ended questions, will ask former learners and administrators to evaluate the current

Three-Tiered Assessment Plan

proficiency levels. Teacher competencies in technology integration and software skills training derived from the course will be analyzed concerning classroom instruction, curriculum, or school setting changes. Finally, any identified concerns will undergo analysis to assess whether modifications should be made to the training.

Conclusion:

A three-tiered assessment plan is a robust, objective set of processes for supporting instructional designers as they seek to provide effective and efficient learning programs. Formative assessment provides feedback to the designer, instructor, or planning team about aligning the learning program with course objectives as it develops. Summative assessment can benefit instructional designers by delivering data on the effectiveness of the learning materials and providing data to instructors on student success and areas for remediation. Confirmative evaluation assesses all training outcomes; however, it is performed after the learning program has been implemented for an extended time. A three-tiered assessment plan serves the instructional designer by evaluating the extent to which instructional objectives are being achieved so the learning program can best align to meet the target audience's needs.

References

- CLAS Network. (2015, September 11). Formative assessment and differentiation / YouTube Informational Video. https://www.youtube.com/watch?v=x9T3H__Ge9I
- Morrison, G. R., Ross, S. J., Morrison, J. R., & Kalman, H. K. (2019, March 19). Designing effective instruction, 8th edition. <https://www.wiley.com/en-us/Designing+Effective+Instruction%2C+8th+Edition-p-9781119465935>