The judging panel selected *DNA from the Beginning* (DNAFTB) and *Teoria* as the finalist for the multimedia award. The evaluation of the finalist will be conducted using the Learning Object Review Instrument (LORI). Based on the top ratings a winner will be selected.

**Approach to Evaluation**

LORI is an assessment tool used to support the evaluation of multimedia learning objects. Nielsen describes LORI as being founded on general dimensions for the purpose of formulating prescribed strengths and weaknesses (Nielsen, 1994). Learning instruments such as LORI will improve the quality of learning resources by facilitating methods of quality assurance and stimulating improvement to multimedia in general. This assessment tool encourages learners to explore, comprehend and solve problems by experimenting. LORI gives the necessary structure for a valid and efficient evaluation.

 The panel will conduct a review based on the nine dimension of quality: content quality, learning alignment, feedback and adaption, motivation, presentation design, interaction usability, accessibility, reusability and standards compliance (Nesbit, Belfer & Leacock, 2007). The characteristics are categorized into various criteria and allocated a numeric value from 1-5. One indicates a low approval and five indicates a higher approval. As a member of a judging panel, each item will be rated, and calculated as a single average covering all items used in the evaluation (Nesbit, Belfer & Leacock, 2007).

**Finalists**

DNA from the Beginning (DNAFTB) targets teenaged learners and uses animation, image gallery, video, problem solving, biographies and links to expose students and families to experiments related to modern genetics. This learning object follows a constructive pedagogy which provides basic information and builds knowledge of the historical development of genetics (DNA Learning Center, 2013).

Teoria is a website used by higher education and music schools to study and practice music theory. Teoria follows a behaviorist pedagogy that promotes and modifies behavior through brief presentations, response, and affirmative fortification. Activities are categorized as tutorial, exercise and reference. Exercises and tutorials are interactive using flash learning objects. Some of the activities are part of a book published by Oxford University Press and Bompiani (Teoria, 2011).

**LORI Assessment Criteria**

**Content Quality**

The quality of content is a major factor of multimedia. Content should be accurate, without bias or omissions accentuating the most relevant information and ideas (Nesbit, Belfer & Leacock, 2007). The quality of content speaks to the legitimacy and credibility of the instrument (Leacock, & Nesbit, 2007). DNA from the Beginning is a product of the DNA Learning Center, an operating unit of Cold Spring Harbor Laboratory. The legitimacy and credibility of content is supported by a group of molecular genetics researchers. Teoria was developed by Jose’ Alvira, a music theory professor, chairman of the Theory and Composition department and Dean of Academic Affairs at the Conservatory of Music of Puerto Rico. Teoria received the MERLOT (*Multimedia Educational Resource for Learning and Online Teaching*) [Classic Award](http://taste.merlot.org/2006awards.html) in music.

**Learning Goal Alignment**

A well-organized multimedia tool will align the learning objectives with assessment activities. Activities should produce the knowledge and skills necessary for competency and the assessment should sufficiently measure the students’ achievements (Leacock, & Nesbit, 2007). DNAFTB’s learning goals are defined by means of a “Concept” section that is located in each learning module. Contritely, Teoria does not define learning objectives. Their approach is to provide lesson specific tutorials and a plethora of exercise to reinforce students’ achievement.

**Feedback and Adaptation**

It is important that multimedia tools adapt to a multitude of perspectives, assist in discovery and help leaners construct knowledge. Feedback is directly related to adaption in that the information presented by the object is a reflection of the learners’ reactions (Leacock, & Nesbit, 2007). DNAFTB modules offer an adaptive content by providing a “Problem” section for exercises that provides immediate assessment of skills. Teoria has an extensive amount of exercises at various levels of competency that challenge the learners’ knowledge and progression, and provide immediate assessment of skills.

**Motivation**

Addressing goals and stimulating interests are major factors in a multimedia tools’ ability to motivate users**.** Designers must implement creative and realistic interactive activities to gain and retain attention (Leacock, & Nesbit, 2007). The module descriptions in DNAFTB are alluring and will stimulate interest. Activities located in the “Problem” section may be more exciting if audio functionality were added to the activity. A major concern with the Teoria learning object is the interface is not intriguing and lackluster. The design would benefit from an enhanced creative strategy for engaging the learner.

**Presentation of Design**

Presentation design refers to the artistic features of the multimedia tool. A multimedia tools’ visual and auditory function should be aesthetically pleasing. Information should be presented with clarity and precision (Nesbit, Belfer & Leacock, 2007). DNAFTB permits easy navigation by displaying an index of the modules on the side of each webpage. In addition, text, color and animation where demonstrated sufficiently. Teoria’s animation is strong; however, the color scheme is dull and the overall presentation does not offer elements of surprise or excitement.

**Interaction Usability**

Interaction usability refers to the extent in which learners are able to manipulate the learning object. It can be defined by effectiveness, efficiency and satisfaction of the user (Oppermann, 2002). Each of DNAFTB’s modules has the subpages (Concept, Animation, Gallery, Video, Bio, Problem, Links) which are informative and provide quality interaction. A stand-out quality of Teoria is easy navigation. The highlight of the interface is the search engine which is the central method for locating modules.

**Accessibility/Compliance**

The design of learning objects should provide accommodation for learners with visual or hearing disabilities. Neither learning objects makes explicit provision for disabled students. Both should be in compliance with the World Wide Web Consortium W3C and IMS Global Learning Consortium guidelines when evaluating accessibility (Leacock, & Nesbit, 2007). Reviewers on this judging panel are not qualified to evaluate this criterion.

**Reusability**

The learning object should be capable of transcending courses. Both DNAFTB and Teoria are designed for a diverse population with granular and adaptive context for reuse across courses and contexts. Researchers contend that consideration should be given for various cultures, personalities, preferences and abilities (Leacock, & Nesbit, 2007).

**Explanation for winner of the Multimedia**

**Learning goals are the foundation of a lesson plan. Goals help to give direction, define expectations, identify materials and technology, and guide assessment. By providing a “Concept” section for each module, DNAFTB properly aligns the learning goals with the activities. This significant element was lacking in the Teoria learning object. Furthermore, the presentation design of DNAFTB made good use of text, color and animation. The navigation far exceeds that of Teoria.**

**Winner:** DNA from the Beginning

**Scoring Sheet**

**Learning Objects:** DNA from the Beginning and Teoria.com

**Reviewer:** Renee Burrell

 **Low High**

 **1 2 3 4 5**

|  |  |  |
| --- | --- | --- |
|  **Criteria** | ***DNA from the Beginning*** | ***Teoria*** |
| Content quality | 5 | 5 |
| Learning goal alignment | 5 | 3 |
| Feedback and adaptation | 5 | 5 |
| Motivation | 4 | 3 |
| Presentation design | 4 | 3 |
| Interaction usability | 4 | 4 |
| Accessibility | 2 | 2 |
| Reusability | 5 | 5 |
| \*Standards compliance | NA | NA |
| **Total** | **33** | **30** |

 Reference

DNA Learning Center (2013). DNA from the beginning. Retrieved October 31, 2013 from http://dnaftb.org/

Leacock, T. L., & Nesbit, J. C. (2007). A Framework for evaluating the quality of multimedia learning resources. *Educational Technology & Society*, 10 (2), 44-59.

Nesbit, Belfer & Leacock, (2007) The LORI Manual.

Nielsen, J. (1994). Enhancing the explanatory power of usability heuristics. *Proceedings of the Association for Computing Machinery CHI 94 Conference*, Boston, MA, 152–158.

Oppermann, R. (2002). User-interface design. In H. H. Adelsberger, B. Collis, & J. M. Pawlowski (eds.), *Handbook on Information Technologies for Education and Training* (pp. 234-248). Berlin, Heidelberg, New York: Springer.

Teoria. (2011). About Teoria.com. Retrieved October 28, 2013 from http://teoria.com/docs/help/about.php