BSU **Graduate Research** Workshop
Abstract Submission Guidelines

<u>Abstract Development Guide and Sample Abstract</u>

1.) <u>ABSTRACT TITLE:</u> The ABSTRACT TITLE should be no longer than 100 characters, including punctuation and spaces. The abstract title should be initial capped and NOT in a sentence format.

TITLE : The Science of Education, Life, and the Computer Era

2.) <u>ABSTRACT PRIMARY AUTHOR AND ABSTRACT PRESENTER:</u>

PRIMARY AUTHOR: John Doe, xyz@bowiestate.edu

The PRIMARY AUTHOR is the person submitting and presenting the abstract.

3.) <u>PRIMARY AUTHOR'S INSTITUTION:</u>

PRIMARY AUTHOR'S INSTITUTION: HRD University

The PRIMARY AUTHOR'S INSTITUTION should be the institution where the student is currently enrolled.

4.) <u>CO-AUTHOR(S):</u>

Approval must be obtained from all co-authors listed on the abstract. Failure to do so will result in the immediate rejection of the abstract.

Co-Authors are NOT PERMITTED to co-present with the Primary Author. NO co-presentations are allowed during the conference.

***If there is no co-author, students may leave this field blank.

CO-AUTHOR(S): Jane Doe, Howard University, DC; Mary Doe, Morgan State University, MD ; James Doe, Savannah State University, GA

5.) <u>ABSTRACT INFORMATION:</u>

3000 character limit, INCLUDING spaces and
punctuation. All abstracts MUST include the following:

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- ❖ **Hypothesis statement and why the research is important**
- ❖ **Methods and controls**
- ❖ **Results**
- ❖ **Conclusions and future research questions**

6.) ACKNOWLEDGEMENT OF FUNDER(S):

Students must list the funder(s) of their research project. If there is more than one funder, each funder should be listed separately.

PRINTED ABSTRACT SAMPLE

After all of the pieces of the abstract have been compiled, a sample of the completed abstract printed in the ERN Conference Program Book is provided below: (Please NOTE: The abstract body highlighted in YELLOW should be no longer than 3000 characters, including spaces and punctuation.)

Game Theme Based Instructional Module for Array and Objects using Virtual Reality

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Co-Author(s): Chris Carlson, Morgan State University, MD

There is a need to change the traditional passive method of teaching to an active method of teaching such as game and simulation-based learning. In the expansion of education reform, gaming is considered one of the effective tools to teach students. There is also a need to embody the educational effect of games, for combining games and learning together. Every upcoming programmers or advance programmers know that arrays and objects are widely known key programming terms which are keep to heart. Sometimes, key programming terms are difficult for students to comprehend who are newly introduced to arrays and objects. Every semester, countless students seek tutor center help concerning arrays. The authors of the text-book try to solve these problems by repetitively changing the illustrational design of the test-book for every edition they produce, which to no avail isn't enough to simplify the structure of an array.

The objectives of this research is to design, develop, and evaluate a game theme based instructional (GTI) module. The aim is to create Virtual Reality course educational modules with more inquiry based problem-solving activities and hand-on experiences. The GTI module is based on a proven framework for evaluation of game and simulation-based learning. The gaming instructional module will help students learn about arrays and objects through the use of trial and error games and demonstrations. Our hypothesis is that the use of gaming instructional modules will lead to better student learning outcomes. The GTI modules have adopted the constructive learning approach and are developed using a gaming metaphor. The design of the GTI modules is modeled from the revised 'Bloom's taxonomy.' Furthermore, in this research, we have incorporated a proven framework with a minor extension for the design and development of GTI modules. Our proposed instructional module uses a gaming metaphor in demonstrating the concepts of Multidimensional Arrays and objects. The proposed GTI module is designed and developed using 3Ds Max and Vizard.

Students were evaluated in two phases during the research study. The data were analyzed using statistical analysis methods. We have applied proven evaluation scale/methodology for the evaluation of the effectiveness of GTI modules, which includes: (1) Student Assessment of Learning Gains (SALG) to evaluate the learning gain. (2) Science Motivation Questionnaire II (SMQII) for evaluating the motivation of students. (3) User Engagement Scale (UES) for evaluating the usability of GTI modules. (4) Theory of Reasoned Action (TRA) for evaluating the likability of GTI modules. We have performed the t-test for evaluating learning gain and motivation of students, ANOVA test for evaluating the likability based on familiarity with other virtual reality games and, grounded theory for the evaluation of usability of GTI modules. The result of evaluation shows that the GTI modules produces better learning gain and; are usable, likable, motivational, and engaging.

References:

1. Rajeev,S., Sharma, S, "Evaluation of Game-Theme Based Instructional Modules for Data Structure Concepts ", International Journal of Computers and their Applications, IJCA, Vol. 27, No. 1, March 2020.

2. Rajeev,S., Sharma, S, "Motivational Game-Theme Based Instructional Module for Teaching Binary Tree and Linked List, Proceedings of ISCA 28th International Conference on Software Engineering and Data Engineering (SEDE 2019) in San Diego, CA, USA , vol 64, pages 31-40, 2019.

3. Rajeev,S., Sharma, S, "Evaluation of GTI modules based on usability and likeability", Proceedings of ISCA 27th International Conference on Software Engineering and Data Engineering (SEDE 2018), New Orleans, Louisiana, USA, pp. 69-74, October 8-10, 2018.