

# Linking Gamification, Ludology and Pedagogy: How to Use Serious Games for Various Knowledge Domains

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**Abstract**—Education as a whole has seen no major improvements for a long period of time while society has matured and grown rapidly in the same time frame. Due to this teaching and learning methods can be seen as stale to certain students. One way to solve this issue is with the implementation of some from of the technology that has developed over the years. This study looks at the possibility of adapting various domains of knowledge into digital games referred to as Serious Games. The implementation of serious games within teaching may help keep certain students engaged with the content being presented and create further interest in the topic. However, before reaching this stage the means to transform these knowledge domains into a serious games must be studied. This is done by focusing on three fields in particular, those being Gamification, Ludology and Pedagogy.

**Index Terms**—Education, Gamification, Knowledge Domains, Ludology, Pedagogy, Serious Games

## I. INTRODUCTION

This document is a model and instructions for L<sup>A</sup>T<sub>E</sub>X. Please observe the conference page limits.

## II. LITERATURE REVIEW

- A. *Serious Games and Ludology*
- B. *A Pedagogical Approach*
- C. *Gamification and the Knowledge Domains*

## III. METHODOLOGY

The following steps were taken to determine how serious games can be used for the various knowledge domains:

1. Literature surrounding the applicable fields was researched
2. Case studies concerning serious games was studied and similarities noted
3. Select theories that aid this process were pinpointed
4. From this research, recommendations for the knowledge domains were made

- A. *Sampling of Literature*
- B. *Collection of Case Studies and Determine Similarities*
- C. *Pinpointing Connected Theories*
- D. *Extrapolate to other Knowledge Domains*

## IV. FINDINGS

- A. *Helpful Teaching Theories*
- B. *Case Studies and the Similarities in Design Principles*

## V. SYNTHESIS FROM RESEARCH

- A. *Recommendations per Knowledge Domain*
- B. *Limitations and Future Research*
- C. *Maintaining the Integrity of the Specifications*

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Please use “soft” (e.g., `\eqref{Eq}`) cross references instead of “hard” references (e.g., (1)). That will make it possible to combine sections, add equations, or change the order of figures or citations without having to go through the file line by line.

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- In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
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- The prefix “non” is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the “et” in the Latin abbreviation “et al.”.
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An excellent style manual for science writers is [7].

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Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy <sup>a</sup>		

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Fig. 1. Example of a figure caption.

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity “Magnetization”, or “Magnetization, M”, not just “M”. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”.

### ACKNOWLEDGMENT

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Please number citations consecutively within brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]—do not use “Ref. [3]” or “reference [3]” except at the beginning of a sentence: “Reference [3] was the first ...”

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