Lecture 5
Summarising Literature and Writing Skills

UNIVERSITY OF AUCKLAND
COMPSCI 289
Prof. Robert Amor
Learning Objectives

- Understand what exists in a literature review
- Learn the IEEE referencing style
- Learn to quote and reference correctly
What is a Literature Review?

- An account of what has been published on your topic of interest
- Purpose – to critically analyze a segment of a published body of knowledge through summary, classification, and comparison of prior studies
- Not merely a descriptive list of the material available, or a set of summaries of relevant resources
Anatomy of a Paper or Report

- Title
- Authors
- Abstract
- Keywords
- Introduction
  - Literature Review
- Main Body
- Conclusions
  - Future Work
- Acknowledgements
- References
Immersive virtual reality serious games for evacuation training and research: A systematic literature review

Zhenan Feng¹, Vicente A. González¹, Robert Amor², Ruggiero Lovreglio³, Guillermo Cabrera-Guerrero⁴

¹ Department of Civil and Environmental Engineering, The University of Auckland, New Zealand
² Department of Computer Science, The University of Auckland, New Zealand
³ School of Engineering and Advanced Technology, Massey University, New Zealand
⁴ Escuela de Ingeniería Informática, Pontificia Universidad Católica de Valparaíso, Chile

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ABSTRACT

An appropriate and safe behavior for exiting a facility is key to reducing injuries and increasing survival when facing an emergency evacuation in a building. Knowledge on the best evacuation practice is commonly delivered by traditional training approaches such as videos, posters, or evacuation drills, but they may become ineffective in terms of knowledge acquisition and retention. Serious games (SGs) are an innovative approach devoted to training and educating people in a gaming environment. Recently, increasing attention has been paid to immersive virtual reality (IVR)-based SGs for evacuation knowledge delivery and behavior assessment because they are highly engaging and promote greater cognitive learning.

This paper aims to understand the development and implementation of IVR SGs in the context of building evacuation training and research, applied to various indoor emergencies such as fire and earthquake. Thus, a conceptual framework for effective design and implementation through the systematic literature review method was developed. As a result, this framework integrates critical aspects and provides connections between them, including pedagogical and behavioral impacts, gaming environment development, and outcome and participation experience measures.

1. Introduction

Today, most people spend a large portion of their time living and working in buildings. However, natural or man-made hazards can make the building environment dangerous for staying. Proper evacuation responses and behavior during an emergency is a crucial factor to increase survival chance. In general, people are trained and acquire evacuation knowledge (e.g., emergency response, self-protection skills, best practice) through traditional approaches such as videos, posters, seminars, courses, or evacuation drills. However, these traditional approaches may not effectively transmit knowledge (Gwynne, Boyce, Kulgowski, Nilsson, P.
The Format of a Literature Review

- Introduction
  - Why you are writing a review, why the topic is important, where does it fit in CS
  - The scope of the review — what will the discussion include and exclude
  - The organisational pattern of the review

Today, most people spend a large portion of their time living and working in buildings. However, natural or man-made hazards can make the building environment dangerous for staying. Proper evacuation responses and behavior during an emergency is a crucial factor to increase survival chance. In general, people are trained and acquire evacuation knowledge (e.g., emergency response, self-protection skills, best practice) through traditional approaches such as videos, posters, seminars, courses, or evacuation drills. However, these traditional approaches may not effectively transmit knowledge (Gwynne, Boyce, Kuligowski, Nilsson, P. Robbins, & Lovreglio, 2016). One reason is that after an evacuation drill, building occupants are generally not provided with individual feedback assessing their evacuation behavior (Gwynne, Kuligowski, Boyce, Nilsson, Robbins, Lovreglio et al., 2017). Another reason is that building occupants can be not emotionally engaged in the learning process that may lead to a reduced effect on attitude and limited change in behavior (Chittaro, Buttussi, & Zangrando, 2014). In fact, Yang, Wu, and Li (2011) pointed out that real-life evacuation behavior is different from experiments such as evacuation drills, which means that current evacuation models still have...
The Format of a Literature Review

- Body
  - Headings and subheadings
  - Summarize and evaluate the current state of knowledge
  - Note major themes or topics, the most important trends, and any findings about which researchers agree or disagree
  - Its purpose is to make an argument that will justify your proposed conclusions
The Format of a Literature Review

- Conclusion
  - A summary of the main agreements and disagreements in the literature
  - The general conclusions that are being drawn
  - Highlight gaps and indicate how previous research leads to your own conclusions

5. Conclusions

We carried out a systematic literature review on IVR SGs for evacuation training and research. The pedagogical and behavioral outcomes, game environment development, and outcomes and participation experience measures were extensively explored. The findings indicate the advantages and disadvantages of IVR SGs in terms of delivering evacuation knowledge and conducting evacuation behavior analysis. This study provided insights into the characteristics and structure of IVR SGs. As a result, we proposed a conceptual framework for developing and implementing IVR SGs based on the investigation into the existing literature. This framework aims to contribute to future applications of IVR SGs for evacuation training and research.

This review has a few limitations. The review excluded theoretical papers without following up case studies. As a result, all the analyzed data involves empirical evidence extracted from the prototypes given in the existing literature. There may be other aspects that are important to developing and implementing successful IVR SGs for evacuation training and research. Furthermore, the conceptual framework is derived from systematic literature review findings. Regarding that, this framework must be further studied and validated.

When conducting this study, we found some potential directions for future research. As we stated before, there is still in need to investigate the impact of different navigation solutions on motion sickness. Apart from that, within the 15 reviewed papers, eleven focused on fire evacuation, three focused on aviation and spacecraft evacuation, while only one refers to evacuation during earthquakes. There seems to be a significant gap between the research on fire evacuation and research on earthquake evacuation, with little attention given to the latter. Regarding that, more attention needs to be paid on earthquake safety training (Gavreglio et al., 2017). Another interesting finding is that only one study took children as research subjects (Smith & Ekron, 2009). The rest of the research were carried out in universities, with students and staff comprising the majority of the subjects. During an emergency, children are more vulnerable than adults. Therefore, it would be valuable to conduct more research on children using an IVR SG approach.
Writing the Literature Review

- Organise the section structure first
- Be selective
- Use quotes sparingly
- Summarise and synthesize
- Keep your own voice
- Use caution when paraphrasing (remember to cite)
- Focus on analysis, not description
- Revise, revise, revise
Systematic Literature Reviews (SLR)

- Methodology to identify all literature relevant to particular research questions
- Process includes
  - Identifying research
    - Search string
    - Publication databases
  - Selecting primary studies
    - Inclusion/Exclusion criteria
    - “How to Read a Paper”
  - Summarising papers, data extraction, classification
  - Data synthesis

Referencing – IEEE Style

I. CITING REFERENCES

A. References in Text

References need not be cited in the text. When they are, they appear on the line, in square brackets, inside the punctuation. Grammatically, they may be treated as if they were footnote numbers, e.g.:

as shown by Brown [4], [5]; as mentioned earlier [2], [4]–[7], [9]; Smith [4] and Brown and Jones [5]; Wood et al. [7]

**NOTE:** Use et al. when three or more names are given for a reference cited in the text.

or as nouns:

as demonstrated in [3]; according to [4] and [6]–[9].

Referencing – IEEE Style

Periodicals

Basic Format:

Examples:

Periodical With DOI

Basic Format:

Example:
Referencing – IEEE Style

Conference Proceedings in Print (Paper Presented at a Conference)

Basic Format:
- J. K. Author, “Title of paper,” in Abbreviated Name of Conf., (location of conference is optional), (Month and day(s) if provided) year, pp. xxx–xxx.

Examples:
- G. R. Faulhaber, “Design of service systems with priority reservation,” in Conf. Rec. 1995 IEEE Int. Conf. Commun., pp. 3–8. *** If the year is given in the conference title, it may be omitted from the end of the reference as shown here.***

Conference Proceedings With DOI

Basic Format:

Examples:

Referencing – IEEE Style

A. Books

Book

Basic Format:

- J. K. Author, “Title of chapter in the book,” in *Title of His Published Book*, xth ed. City of Publisher, (only U.S. State), Country: Abbrev. of Publisher, year, ch. x, sec. x, pp. xxx–xxx.

Examples:


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Zhenan Feng\textsuperscript{a,}\textsuperscript{*}, Vicente A. González\textsuperscript{a}, Robert Amor\textsuperscript{b}, Ruggiero Lovreglio\textsuperscript{c}, Guillermo Cabrera-Guerrero\textsuperscript{d}

\textsuperscript{a} Department of Civil and Environmental Engineering, The University of Auckland, New Zealand
\textsuperscript{b} Department of Computer Science, The University of Auckland, New Zealand
\textsuperscript{c} School of Engineering and Advanced Technology, Massey University, New Zealand
\textsuperscript{d} Escuela de Ingeniería Informática, Pontificia Universidad Católica de Valparaíso, Chile

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Referencing Exercise

Human-Robot Interaction with Smart Shopping Trolley using Sign Language: Data Collection

Dmitry Ryumin  
*St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)*  
St. Petersburg, Russia  
dl_03.03.1991@mail.ru

Denis Ivanko  
*St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)*  
St. Petersburg, Russia  
denis.ivanko11@gmail.com

Ildar Kagirov  
*St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)*  
St. Petersburg, Russia  
kagirov@iias.spb.su

Alexey Karpov  
*St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)*  
St. Petersburg, Russia  
karpov@iias.spb.su

Alexandr Axyonov  
*St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS)*  
St. Petersburg, Russia  
axyonov@iias.spb.su

Milos Zelezny  
*University of West Bohemia (UWB)*  
Pilsen, Czech Republic  
zelezny@kky.zcu.cz

Kyoto, Japan  
pp. 949-954  
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Plagiarism

- Using the work of others without explicit acknowledgement and referencing, that is, plagiarism. It includes: use of other people's data without acknowledgement; use of published or unpublished expressions and ideas from other people without adequate attribution; use of published or unpublished charts, diagrams. (Student Academic Conduct Statute, UoA)

- Plagiarism is the representation of another author's language, thoughts, ideas, or expressions as one's own original work (Wikipedia)
Avoid Plagiarism

- Always acknowledge the sources
- Present as quotes – Gallimore suggests that “valuers tend to give greatest weight to more recent information....” [12, p. 25].
- References included for:
  - Tables
  - Figures
  - Graphs or diagrams
- Self-plagiarism
Avoid Plagiarism

- Minimise what is quoted from other sources
  - 1-2 sentences
  - Almost never a paragraph
  - Many quotes strung together is not your writing

- Paraphrase
  - Really needs to be in your own words

- Plagiarism detection systems, UoA subscribes to:
Example Approaches

Figure 1: Modified Leavitt’s diamond theory of technology impact [6]

Jones and Amor (2020)

Examples of a short direct quote:

Baez et al. have noted that “full 3D stacking can potentially offer additional advantages for memory and processor applications” [7, p. 14].

In fact, Wilds at al. [3, p. 21] suggest that energy storage is achieved “by means of static charge rather than of an electro-chemical process inherent to the battery”.

If you need to leave some unnecessary words out of the quotation, use a set of dots (...), called an ellipsis, indicating a break in quotes.

As seen in [5, p. 14], “the proposed circuit has improved signal attenuation ... and has been experiencing less performance degradation due to resistor variation”.

https://libraryguides.vu.edu.au/ieeereferencing
### TurnItIn Example

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### Summarising Literature and Writing Skills

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<td>No way to easily re-book</td>
<td>low</td>
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<td>8. Aesthetic and Minimalist Design</td>
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<td>The <em>default</em> site is meaningless and confuses new users</td>
<td>moderate</td>
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<td>9. Help Users to Recognise, Diagnose, and Recover from Errors</td>
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<tr>
<td>When the issue “advanced bookings is not allowed” there is not information on how to properly select a booking.</td>
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<td>10. Help and Documentation</td>
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<tr>
<td>“Booking Instructions” does not teach you how to book</td>
<td>High</td>
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Summary

- Standard requirements for literature reviews
  - Not just summarizing papers
- Simple syntax for IEEE referencing
- Simple requirements for quoting text and figures
Referencing Exercise Answers
