

Enhancing Employee engagement in Occupational Health and Safety Corporate Training via KAHOOT gamified Learning Tool

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Final Project - 2

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Acknowledgment

Dedication

Abstract

1. Chapter 1: Introduction

Introduction

In recent decades, technological advancements have revolutionized training methodologies across various sectors, including Occupational Health and Safety (OHS). As workplaces evolve, the integration of digital tools to enhance training effectiveness and engagement becomes increasingly imperative. This graduation project explores the utilization of KAHOOT gamified learning tools to elevate employee engagement in OHS corporate training within the context of ports and terminals safety.

Background Information

Occupational safety remains a cornerstone of organizational sustainability and employee well-being. Across industries such as ports and terminals, where operations involve intricate logistics and high-risk activities, maintaining a culture of safety is paramount to mitigate hazards and ensure regulatory compliance (Clarke & Flaherty, 2015). Traditional training approaches often struggle to captivate modern learners or facilitate long-term knowledge retention, prompting a shift towards innovative educational strategies like gamified learning.

Research Problem

Despite the recognized potential of gamified learning to enhance training outcomes, empirical studies specific to its application in OHS within port and terminal environments are scarce. Existing literature predominantly focuses on generic workplace safety contexts, overlooking the nuanced challenges and operational dynamics unique to ports and terminals (Wouters, Paas, & van Merriënboer, 2013). This research aims to fill this gap by investigating how KAHOOT gamified learning tools can effectively engage diverse port and terminal employees in OHS training, thereby fostering a culture of safety and reducing occupational risks.

Objectives

The primary objective of this study is to assess the impact of integrating KAHOOT gamified learning tools on employee engagement levels during OHS corporate training sessions in ports and terminals. Additionally, the research seeks to explore demographic factors—such as age, educational background, and job role—that may influence the reception and effectiveness of gamified learning interventions in this specialized context.

Significance of the Research

This research holds both theoretical and practical significance. Theoretically, it contributes to the evolving discourse on gamified learning interventions by providing empirical insights into their application within high-risk industrial settings. Practically, findings from this study can inform organizational training strategies, equipping port and terminal stakeholders with evidence-based approaches to enhance safety training efficacy and employee participation (Seaborn & Fels, 2015).

Rationale and Importance

The decision to focus on KAHOOT gamified learning tools stems from their proven effectiveness in fostering engagement and knowledge retention in educational settings (Ryan, Rigby, & Przybylski, 2006). By adapting these principles to OHS training, organizations can leverage intrinsic motivational drivers—such as competition and immediate feedback—to cultivate a safety-conscious workforce. This approach not only aligns with global trends towards interactive and personalized learning experiences but also addresses the pressing need for innovative solutions to enhance workplace safety practices worldwide.

Historical Roots and Humanitarian Need

Historically, workplace safety initiatives have evolved from reactive compliance measures to proactive strategies aimed at empowering employees and preventing accidents (Deci & Ryan, 2012). The imperative for this study lies in its potential to advance OHS training methodologies, thereby contributing to broader societal goals of reducing occupational injuries and promoting sustainable development through safer work environments.

Structure of the Introduction

This introduction moves from the general context of technological advancements in training to the specific application of gamified learning in OHS within ports and terminals. Each assertion is supported by relevant literature, establishing a clear linkage between the research problem and existing knowledge gaps in the field.

In summary, this introduction sets the stage for a comprehensive exploration of how KAHOOT gamified learning tools can enhance employee engagement and safety awareness in OHS training within the dynamic and challenging environment of ports and terminals.

1.1. Research Problem

The current research endeavors to explore the integration of KAHOOT gamified Learning Tools in Occupational Health and Safety (OHS) Corporate Training within the context of ports and terminals safety. This investigation is prompted by the growing need for innovative approaches to enhance employee engagement and foster a safety-centric organizational culture in workplaces characterized by diverse occupational risks.

1.1.1. Theoretical Gaps

Despite the expanding interest in gamified learning interventions and their potential impact on OHS training, there exists a notable theoretical gap in understanding the specific nuances and outcomes associated with the integration of KAHOOT within the specialized domain of ports and terminals safety. The current literature provides limited insights into the distinctive factors that influence the efficacy of gamified learning tools in OHS training within this specific industry context.

1.1.2. Practical Gaps

Furthermore, the empirical gaps in the literature are evident in the scarcity of studies that have systematically examined the practical implications, long-term effectiveness, and organizational benefits of utilizing KAHOOT gamified Learning Tools in OHS corporate training for the ports and terminals sector. While preliminary research indicates positive outcomes in generic OHS contexts, there is a clear need for targeted investigations tailored to the unique challenges, occupational hazards, and workforce characteristics prevalent in ports and terminals.

1.1.3. Justification of the Problem:

The significance of addressing this research problem lies in its potential to bridge the existing knowledge gap and provide actionable insights for trainers, practitioners, and organizational leaders within the ports and terminals industry. Effective OHS training is critical for reducing accident rates, ensuring regulatory compliance, and cultivating a safety-conscious workforce. By investigating the integration of KAHOOT gamified Learning Tools, the research aims to contribute practical solutions to the challenges associated with engaging a diverse workforce in safety training programs.

1.1.4. Main Research Question:

Based on the identified theoretical and empirical gaps, the central research question guiding this study is:

"What is the impact of integrating KAHOOT gamified Learning Tools on employee engagement in Occupational Health and Safety Corporate Training within the context of ports and terminals safety?"

1.2. Research Significance

In this section, the student should clarify the importance of the study at the theoretical level, and the empirical level

1.2.1. At the theoretical level

The research endeavors to contribute significantly to the theoretical landscape of occupational health and safety (OHS) training by addressing existing gaps in understanding the efficacy of gamified learning interventions, particularly within the context of ports and terminals safety. By exploring the integration of KAHOOT gamified Learning Tools, the study aims to advance scholarly discourse surrounding innovative pedagogical approaches and their impact on employee engagement and knowledge retention in OHS training programs.

The investigation of KAHOOT's effectiveness in enhancing employee engagement within OHS corporate training represents a novel extension of existing research paradigms. By delving into the intricacies of gamified learning experiences tailored to the unique challenges and occupational hazards prevalent in ports and terminals, the study seeks to broaden theoretical frameworks and refine conceptual models related to workplace safety training methodologies.

Furthermore, the research holds promise in offering theoretical insights into the mechanisms underlying employee motivation, learning outcomes, and behavioral change within the context of gamified learning environments. By elucidating the cognitive, affective, and behavioral processes at play, the study aims to contribute to a deeper understanding of how gamified learning interventions can be optimized to promote safety consciousness and cultivate a culture of prevention in high-risk work environments.

1.2.2. At the practical level

In addition to its theoretical contributions, the research also holds significant implications for practical application and organizational practice within the ports and terminals industry. By addressing the empirical gap in the literature through rigorous empirical inquiry, the study seeks to provide actionable insights and evidence-based recommendations for enhancing the effectiveness of OHS training programs.

The findings derived from the empirical investigation of KAHOOT gamified Learning Tools have the potential to inform decision-making processes and guide resource allocation strategies within organizations seeking to optimize their safety training initiatives. Through the identification of best practices, challenges, and implementation strategies, the research aims to equip organizational stakeholders with the knowledge and tools necessary to design and deliver engaging, impactful, and sustainable OHS training programs.

Moreover, the empirical significance of the study extends beyond individual organizations to encompass broader societal implications, including the potential for reducing workplace accidents, improving regulatory compliance, and enhancing overall occupational health outcomes within the ports and terminals sector. By fostering a culture of safety rooted in active employee participation and ownership, the research aims to contribute to the creation of safer, healthier, and more resilient work environments that benefit employees, employers, and society at large.

In summary, the research holds both theoretical and empirical significance by advancing scholarly understanding of gamified learning interventions in OHS training and providing practical insights to drive organizational change and promote workplace safety within the ports and terminals industry. Through its dual focus on theoretical refinement and real-world application, the study seeks to catalyze positive transformations in OHS training practices and contribute to the broader discourse on organizational learning, human factors, and safety management.

1.3. Research Questions

Question 1: How does the integration of KAHOOT gamified Learning Tools impact employee engagement levels in Occupational Health and Safety (OHS) Corporate Training within the context of ports and terminals safety?

Question 2: How do demographic factors (e.g., age, educational background, job role) influence the reception and effectiveness of gamified learning interventions in OHS training programs within the ports and terminals industry?

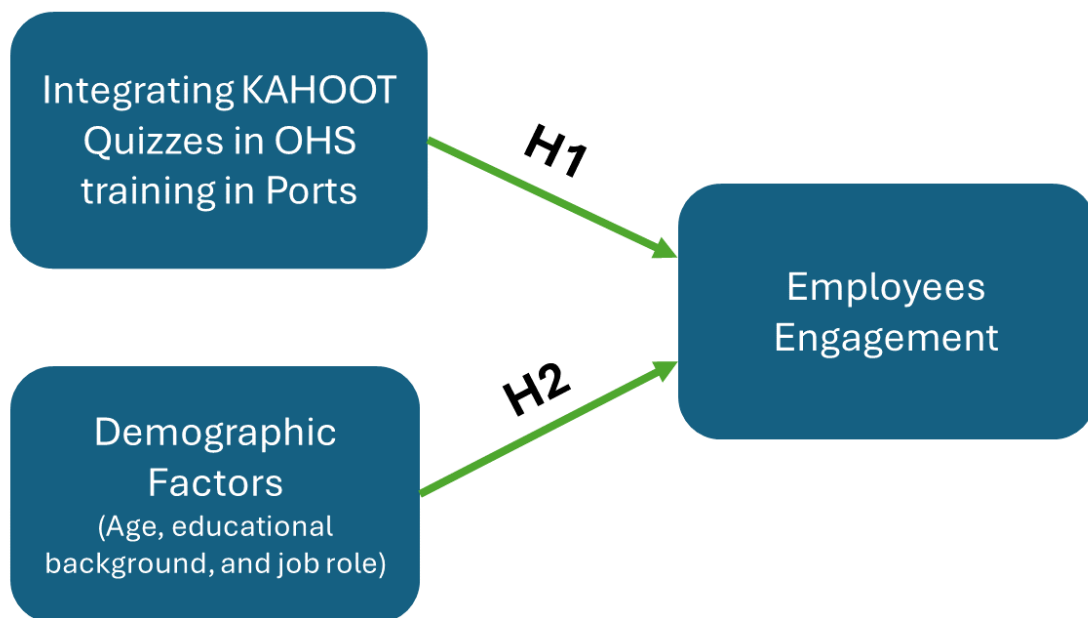
1.4. Research Objectives

1. To assess the impact of integrating KAHOOT gamified Learning Tools on employee engagement levels in Occupational Health and Safety (OHS) Corporate Training within the context of ports and terminals safety.
2. To investigate how demographic factors, such as age, educational background, and job role, influence the reception and effectiveness of gamified learning interventions in OHS training programs within the ports and terminals industry.

1.5. Research Hypotheses

1. Integrating KAHOOT gamified Learning Tools significantly enhances employee engagement levels in Occupational Health and Safety (OHS) Corporate Training within the context of ports and terminals safety.
2. Demographic factors, such as age, educational background, and job role, significantly influence the reception and effectiveness of gamified learning interventions in OHS training programs within the ports and terminals industry.

1.6. Research Model



1.7. Scope of The Study

1.7.1. Geographic Scope

The research will primarily focus on the application of KAHOOT gamified learning tools in Occupational Health and Safety (OHS) corporate training within the context of ports and terminals safety. The study will be conducted in Egypt, specifically targeting ports and terminal facilities located in Suez. This geographic scope ensures relevance to the local industry context while allowing for insights that may be applicable globally to similar high-risk work environments.

1.7.2. Industry Focus

The research will concentrate on the ports and terminals sector, which serves as a critical hub for global trade and transportation. This sector is characterized by diverse occupational hazards and workforce demographics, making it an ideal setting to examine the effectiveness of gamified learning interventions in enhancing OHS training outcomes. By focusing on this industry, the study aims to address sector-specific challenges and opportunities related to safety training and employee engagement.

1.7.3. 1.8.3 Participant Selection

Participants for the empirical study will include a diverse sample of employees working within ports and terminals, encompassing both managerial staff and frontline workers across various job roles (e.g., dockworkers, equipment operators, safety officers). The selection criteria will ensure representation from different age groups, educational backgrounds, and levels of experience within the industry to capture a comprehensive perspective on the reception and effectiveness of KAHOOT gamified learning tools.

1.8. The Project Structure



2.Chapter 2: Literature Review

2.1. Introduction

The landscape of educational and corporate training has undergone significant transformation with the advent of digital technologies, particularly the integration of gamified learning tools. Gamification, defined as the application of game elements and mechanics in non-game contexts, has gained traction for its potential to enhance engagement, motivation, and learning outcomes (Clark & Mayer, 2008). In the realm of occupational health and safety (OHS) training, where ensuring employee compliance and fostering a safety-conscious culture are paramount, the adoption of innovative training methodologies becomes crucial (Becker, 2001).

2.2. The independent variable: Using KAHOOT Gamified Learning Tools

KAHOOT stands out as a leading gamification platform renowned for its interactive features designed to create engaging learning experiences. It employs gamified elements such as quizzes, challenges, and leaderboards to stimulate competition, provide immediate feedback, and promote active participation among learners (Boller, 2012). These features not only enhance the enjoyment of learning but also support knowledge retention by reinforcing learning objectives through interactive simulations and adaptive learning pathways.

2.3. The dependent variable: Employee Engagement in OHS Corporate Training

Employee engagement in OHS training refers to the level of active involvement, motivation, and commitment exhibited by employees towards learning and applying safety practices within their work environment (Becker, 2007). Engaged employees are more likely to adhere to safety protocols, proactively identify hazards, and contribute to a safer workplace culture. This behavioral

engagement is crucial for reducing accident rates, improving regulatory compliance, and fostering a culture of safety within organizations.

2.4. The relationship between the independent and the dependent variables

The theoretical underpinning of integrating KAHOOT gamified learning tools in OHS training lies in its ability to enhance employee engagement through intrinsic motivational factors embedded in game mechanics (Clark & Mayer, 2008). Gamification principles, such as points, badges, and leaderboards, tap into individuals' natural desires for achievement, recognition, and competition, thereby motivating them to actively participate in learning activities (Boller, 2012).

Research indicates that gamified learning interventions not only increase motivation but also improve learning outcomes by providing learners with immediate feedback, opportunities for skill mastery, and a sense of accomplishment (Becker, 2001). In the context of OHS training, KAHOOT's gamified elements are expected to foster a deeper understanding of safety procedures, enhance hazard recognition skills, and promote a proactive approach to workplace safety among employees.

2.5. Conclusion

In conclusion, the literature supports the potential of KAHOOT gamified learning tools to revolutionize OHS corporate training by enhancing employee engagement and promoting a culture of safety. While theoretical frameworks provide a robust rationale for adopting gamification in training programs, empirical studies specific to industries like ports and terminals are scarce. Future research should focus on conducting rigorous empirical investigations to validate the effectiveness of KAHOOT in improving OHS training outcomes and its practical implications for enhancing safety culture within high-risk work environments.

3. Chapter 3: Research Methodology

4. Chapter 4: Statistical Analysis & Findings discussion

5. Chapter five: Research limitations, Recommendations & Conclusion

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Appendix

Appendix 1: Questionnaire

Dear Participant,

We are conducting a research study titled "Enhancing Employee Engagement in Occupational Health and Safety Corporate Training via KAHOOT Gamified Learning Tools" The primary goal of this study is to investigate the impact of integrating gamified learning tools, specifically KAHOOT, on employee engagement and learning outcomes in Occupational Health and Safety (OHS) training within the context of ports and terminals safety.

Purpose of the Study: The purpose of this study is to enhance our understanding of how gamified learning interventions can improve engagement and effectiveness in OHS training. Additionally, we aim to explore how demographic factors such as age, educational background, and job role influence the reception and effectiveness of these tools.

Why Your Participation Matters: Your participation is crucial to the success of this study. By sharing your experiences and perceptions, you will help us gain valuable insights into the effectiveness of gamified learning tools in OHS training. This, in turn, will enable us to make informed recommendations for improving training programs and enhancing workplace safety.

Confidentiality: Please be assured that all information you provide will be kept strictly confidential and will be used solely for the purposes of this research. Your responses will be anonymized, and no identifying information will be linked to your answers.

Instructions: The questionnaire is divided into **Four sections:**

- Demographic Information - This section collects basic information about your background.
- Current Engagement in OHS Training - This section assesses your current level of engagement in OHS training.
- Perception of Gamified Learning Tools (KAHOOT) - This section gathers your views on the use of KAHOOT in training.
- Impact on Engagement and Learning Outcomes - This section evaluates the impact of KAHOOT on your motivation and knowledge retention.

The questionnaire should take approximately 10-15 minutes to complete. Your honest and thoughtful responses are greatly appreciated.

Consent: By proceeding with this questionnaire, you consent to participate in this study voluntarily and understand that you may withdraw at any time without penalty.

Thank you for your time and valuable contribution to this research.

Section 1: Demographic Information

Question	Options
1. Age:	Under 25 - 25-34 - 35-44 - 45-54 - 55 and above
2. Gender:	Male - Female
3. Educational Background:	High school diploma - Associate degree - Bachelor's degree - Master's degree - Doctorate - Other
4. Job Role:	Blue-collar worker - White-collar worker - Manager/Supervisor - Executive - Other
5. Years of Experience in Current Role:	Less than 1 year - 1-3 years - 4-6 years - 7-10 years - More than 10 years

Section 2: Current Engagement in OHS Training

Question	Options
1. How often do you participate in Occupational Health and Safety (OHS) training?	Never - Rarely (Once a year or less) - Occasionally (2-3 times a year) - Frequently (4-6 times a year) - Very Frequently (More than 6 times a year)
2. How would you rate your current level of engagement in OHS training sessions?	Very Low - Low - Moderate - High - Very High

Section 3: Perception of Gamified Learning Tools (KAHOOT)

Question	Options
1. Have you ever used KAHOOT in any training or educational setting?	Yes - No
2. If yes, how would you rate your experience with KAHOOT in terms of engagement?	Very Poor - Poor - Average - Good - Excellent
3. How do you perceive the integration of gamified tools like KAHOOT in OHS training?	Strongly Negative - Negative - Neutral - Positive - Strongly Positive
4. Do you believe that using KAHOOT can enhance your engagement in OHS training?	Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

Section 4: Impact on Engagement and Learning Outcomes

Question	Options
1. How motivated are you to participate in OHS training when gamified tools like KAHOOT are used?	Not Motivated at All - Slightly Motivated - Moderately Motivated - Highly Motivated - Extremely Motivated
2. Do you feel that KAHOOT helps in better retention of OHS training content?	Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree
3. How likely are you to recommend KAHOOT-based OHS training to your colleagues?	Very Unlikely - Unlikely - Neutral - Likely - Very Likely

Questionnaire Link: <https://forms.gle/Bct2jyxC2qPBBibv6>

Research Instruments:

Variable	Variable Dimensions	Number of Statements	Source
Employee Engagement in OHS Training	- Frequency of Participation - Level of Engagement - Motivation	5	Developed for the study based on literature review
Perception of Gamified Learning Tools (KAHOOT)	- Previous Experience - Engagement Level - Perceived Effectiveness	6	Developed for the study based on literature review
Impact on Engagement and Learning Outcomes	- Motivation to Participate - Content Retention - Likelihood to Recommend	6	Developed for the study based on literature review
Demographic Factors	- Age - Gender - Educational Background - Job Role - Years of Experience	5	Standard demographic questions for survey research