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EXAMINING POSITIVE MOTIVATIONAL INSTRUCTIONAL DESIGN STRATEGIES FOR A YOUTH PROJECT IN KENYA

BY

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Approval of Thesis

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EXAMINING POSITIVE MOTIVATIONAL INSTRUCTIONAL DESIGN STRATEGIES FOR A YOUTH PROJECT IN KENYA

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Dedication

I dedicate this achievement to my late father, whose absence is felt daily, wishing he could have been here to witness my academic journey. I also extend my gratitude to my mother, a constant source of strength and inspiration. Her prayers and belief in my potential have always inspired me.

To my beloved wife Eddah, my confidante, and my greatest supporter. You have been my anchor throughout this journey, providing unwavering understanding, encouragement, and endless love. Your sacrifices and belief in me have been the driving force behind my achievements. I owe you more than words can convey.

To my cherished daughter Nea, whose innocent curiosity and genuine questions always propelled me forward. You may not have known why I stayed up late in the office, but your innocent inquiries, including your famous phrase ‘dad let’s go see stars,’ pushed me to persist, to keep writing, and to strive for completion.

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Additionally, I would like to express my gratitude to Dr. Augustine Mwangi. He has been a source of inspiration, encouraging me to dream big and never settle for less. Acting as a supportive big brother, he held my hand and motivated me to embark on this academic program. What is remarkable is that he might not even be aware of how profoundly he inspired me through our informal conversations. Thank you, Dr. Mwangi, for being a guiding light in my academic journey.

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Abstract

This study investigates instructional design strategies preferred by Kenyan youth, aged 18 to 35, in a training. Utilizing John Keller's ARCS model of motivational design, the research employed a quantitative approach with structured questionnaires. Data were collected from 236 participants in the youth training. The findings revealed that "assessment" (Mean = 4.44), "certification" (Mean = 4.31), and "navigation freedom" (Mean = 4.26) were highly favored, while "badges" (Mean = 4.13) and "chat/discussion forums" (Mean = 3.91) were less popular. Micro-learning strategies, including "content breakdown" (Mean = 4.55), "short video clips" (Mean = 4.50), and "images/graphics" (Mean = 4.47), proved effective across age groups, with slight gender differences observed. The study underscores the significance of personalized learning approaches to enhance engagement and effectiveness in youth training. It also calls for further research into underutilized gamification features and gender-specific design, as well as mixed-methods studies for a comprehensive understanding of learner experiences.

Keywords: *Blended learning, Covid-19 pandemic, gamification, instructional design strategies, Kenya, learner-centered approaches, learner engagement, learner motivation, micro-learning, online learning, remote teaching, youth, youth training*

Preface

The process of creating instructional content for online and blended learning has been completely transformed by instructional design. The development of a functional and measurable learning programs has shown the value of instructional design methodologies. To create a program that meets the learning goals, instructional design methodologies concentrate on the concepts of learning, assessment, media, and evaluation. Any educational program can be designed, developed, put into practice, and evaluated using such methods. Instructional design principles enable most training programs to become accessible and successful in achieving learning objectives.

This thesis looked at the instructional design approaches that learners in a youth training in Kenya preferred. The research focused on how learners in the Amref training utilized gamification and micro-learning. The study also investigated the role that age, and gender played in learners favoring micro-learning and gamification. The results of this study shed light on the potential of positive instructional design approaches and young people's learning. This thesis will also be useful to instructional designers, teachers, faculty, researchers interested in curriculum design for youth, policy makers, students, and the world of work training programs. I extend my gratitude to everyone who contributed to the project, with special acknowledgment to my direct supervisor and the academic members at the Athabasca University's Master of Education in Open, Digital and Distance Education for their valuable support and guidance.

Sincerely,

Bernard Kikechi

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List of Abbreviations/Acronyms

Amref Amref Health Africa formerly known as African Medical Research Foundation

ARCS Attention, Relevance, Confidence, and Satisfaction

COVID-19 Coronavirus Disease 2019

ODL Open and Distance Learning

Chapter 1. Introduction

Summary of Chapters

Chapter 1 introduces the research focus on instructional design strategies in a youth project in Kenya, particularly examining the preferred strategies for enhancing positive learner motivation and engagement. The study addresses the preferred instructional design strategies, specifically in the context of blended learning during the COVID-19 pandemic in a youth training. It highlights the significance of understanding and tailoring instructional design for youth learners, who constitute a considerable proportion of the population in Kenya. The research questions center on the preferred gamification and micro-learning design strategies among learners in the youth training. The chapter defines key terms, delimits the study's scope, and outlines its limitations and assumptions.

Chapter 2 explores the relevant literature review on youth training, focusing on gamification and micro-learning as positive instructional design strategies. The rationale for youth training is highlighted, emphasizing the importance of harnessing the potential of Kenya's youth population to contribute to the nation's development. Blended and online learning approaches are discussed in the context of empowering youth and driving positive change. The literature review also emphasizes the need for tailored and learner-centered approaches for youth learners, as traditional teaching methods in Kenya do not fully support positive learner motivation. The Amref health Africa Youth Advocacy Curriculum is introduced, aiming to equip young advocates with the skills and resources they need for effective advocacy. Instructional design strategies, such as gamification and micro-learning, are designed to enhance and motivate youth learners to achieve curriculum learning outcomes. The chapter concludes by setting the

stage for a detailed study of what makes young learners different and what instructional design methods they prefer.

Chapter 3 presents the theoretical framework that guides the research, focusing on John Keller's ARCS Model of Motivational Design. The model aims to enhance positive learner motivation and engagement in instructional settings by incorporating four key elements: Attention, Relevance, Confidence, and Satisfaction. Attention involves capturing learners' interest through diverse and stimulating resources. Relevance emphasizes making the content applicable to learners' lives and goals. Confidence-building strategies instill a belief in learners' ability to succeed. Satisfaction reinforces motivation through rewards and recognition. In applying the ARCS Model, educators seek to create a positive and engaging learning experience that empowers the youth in Kenya for personal and professional growth.

Chapter 4 outlines the methodological aspects employed to address the research problem. It adopts a positivist paradigm and an objectivist epistemology. The quantitative research design uses structured questionnaires with both closed and open-ended questions. The study population consists of youth advocates and young adults from the Amref youth training program in Kenya. A purposive sampling technique was used to select participants. Ethical considerations were carefully followed to protect participants' rights and privacy. Data analysis involved manual data cleaning and quantitative techniques, presenting results through tables and bar graphs. The study acknowledges certain limitations and delimitations, ensuring data reliability and contributing valuable insights to the field of youth education and instructional design practices.

Chapter 5 presents the results of the research on population demographics, gamification, and micro-learning in the context of the Amref youth training in Kenya. The chapter highlights a

significant 47% response rate for the online survey, ensuring robust conclusions and external validity. It delves into the findings related to gamification, revealing highly rated design strategies such as ‘end of module assessment’ and ‘certificate of completion.’ The analysis also presents micro-learning data, identifying well-received design strategies like ‘content breakdown into modules’ and ‘short video clips.’ Gender and age differences in preferences for certain instructional design strategies are explored, providing valuable insights for personalized learning content and future instructional design considerations. Overall, the study shows positive perceptions of instructional design strategies in the training program.

Finally, Chapter 6 explores research findings in the youth training in Kenya. The study recommends specific gamification and micro-learning design strategies for youth training, considering gender and age differences. Despite some limitations, the findings offer valuable insights for similar contexts in Sub-Saharan Africa and particularly in East Africa. Future research directions are suggested to enhance instructional design practices further. Overall, the research contributes valuable knowledge to the field of instructional design, which might help educators, policy makers, and researchers to create engaging and effective learning experiences that meet the diverse needs of youth learners.

Background

In today’s rapidly evolving educational landscape, integrating innovative instructional design strategies has become increasingly important to address the diverse learning needs of young learners. Instructional design, the deliberate process of creating compelling and engaging learning experiences, can potentially transform educational outcomes and experiences for youth. According to Abubakar et al. (2021) instructional design processes are essential to the creation of

content that meets learners' needs. This research focused on the context of a youth project in Kenya, where the blending of technology, pedagogy, and learner preferences calls for an in-depth examination of instructional design strategies.

Instructional design, a multidisciplinary field, underscores the importance of deliberate planning, organization, and delivery of educational content. Smith and Ragan (2005) highlight the importance of customized instructional design methods for effectively engaging youth learners. Their distinct traits and digital proficiency necessitate a flexible and responsive teaching framework. The concept of instructional design goes further than just delivering content. It involves aligning learning objectives, assessment methods, and learner interactions to improve learning experiences.

In the context of youth and learning, application of instructional design strategies becomes important in creating youth-friendly learning environments. Bartlett (2015) emphasizes the significance of adapting content delivery methods and interaction techniques to meet the preferences and needs of young learners. The design of instructional strategies should reflect the digital-native nature of today's youth, integrating technology, gamification, and interactive elements to enhance engagement and motivation (Landers & Callan, 2011). This aligns with Oteri's (2020) argument that adaptation becomes necessary when current teaching and learning methods are no longer effective.

Like many developing countries, Kenya is undergoing a digital transformation that has spurred new opportunities and challenges in education. The government's commitment to digital literacy and technology integration (Wambui, 2017) signifies a growing recognition of the potential of positive instructional design strategies to address educational disparities. Blended

and online learning methods have become popular as powerful tools to provide quality education to underserved areas, overcoming obstacles like resource constraints and lack of access to traditional classrooms (Mtebe & Twaakyondo, 2018). Nyerere (2016), in a baseline survey report commissioned by the Commonwealth of Learning (COL), however notes that digital learning content is not widespread in its availability, institutional awareness or support. Specifically, on the state of digital content development in Kenya, the survey cited efforts at the University of Nairobi and Kenyatta university. The survey further indicates that universities implementing Open and Distance Learning (ODL) programs in Kenya have invested in training of some staff in areas such as course module development, but this has not been adequate.

While instructional design strategies hold great promise, significant gaps and challenges require comprehensive investigation. Identifying gaps in existing instructional design strategies and effectively implementing these strategies in the unique context of youth learning require careful and well thought out approaches (Phillips & Pulliam, 2010). The diverse learning styles of youth (Vermunt & Verloop, 1999) pose significant challenges, compounded by limited resources and the need to keep learners engaged. Integrating technology (Penuel, 2019) and selecting appropriate assessment methods (Liu & Carless, 2006) further add to the complexity. Addressing these challenges requires innovative solutions and targeted interventions.

Statement of the Problem

Blended learning, a mix of online and in-person teaching, is gaining attention in education for its effectiveness. However, the recent growth of online education, especially in developing countries like Kenya, raised questions about the relative effectiveness of different teaching methods. This research aimed to establish the preferred instructional design strategies

among learners participating in a youth training in Kenya. The objective of this training program was to enhance the capacity of youth advocates, enabling them to conduct strategic advocacy efforts and achieve policy goals efficiently and effectively.

The outbreak of the COVID-19 pandemic impacted education both positively and negatively globally and in Kenya. Institutional closures affected approximately 1.8 billion students by April 26, 2020, prompting the adoption of remote teaching to ensure continuous access to quality and inclusive education (Karakose, 2021). Those institutions with a longer history of digital learning responded well to the challenges, whereas others appeared to resort to emergency remote teaching in response to pandemic-induced needs. The Amref youth training program was one such initiative that enabled uninterrupted learning for youth and young adults during the pandemic. The pandemic presented significant challenges, particularly for vulnerable households in Kenya, as many learners faced the new obstacle of limited internet access, further worsening educational inequality.

Youth learners, constituting a majority (66%) of Kenya's population, were particularly affected. Limited opportunities for mentorship and capacity-building for youth advocates in resource-constrained settings raised concerns about their prospects. The lack of capacity and resources may lead to issues such as poverty, homelessness, drug addiction, mental health concerns, and crime (Karijo et al., 2020). Simultaneously, the pandemic served as a catalyst for positive change, prompting educators to explore and utilize digital tools to engage students in learning. While the initial impact was challenging, it also stimulated innovation and highlighted the resilience of education systems in adapting to unforeseen circumstances. The COVID-19

pandemic necessitated reprioritization and realignment across various aspects of life, not just in education.

While there is ample research on instructional design for adult learners, there remains a need for more literature focusing on effective strategies tailored specifically for youth learners, who make up a significant portion of the Kenyan population. Additionally, much of the research in instructional design was concentrated in developed countries, leaving a gap in understanding the needs and preferences of youth learners in developing and African countries like Kenya. This research aimed to bridge this gap and provide valuable insights into the development of effective instructional design strategies tailored for youth learners, particularly in the context of advocacy training. It also sought to further explore the concept of positive motivational instructional design strategies. This acknowledgment arises from the understanding that positive motivation is not always prioritized in Kenyan education, given the compulsory nature of the curriculum where compliance is often emphasized over motivation.

Significance of the Study

The effective development of youth-friendly educational materials relies on a comprehensive understanding of instructional design methodologies. This study highlights the significant role instructional design strategies play in shaping the future of youth education. While a substantial body of research exists on instructional design, most studies focus on adult learner motivation and engagement, leaving a notable gap in research on instructional design strategies tailored for youth learners in Kenya. Furthermore, it is observed that the curriculum's emphasis on compliance often overshadows the integration of instructional design strategies that motivate learners.

Exploring instructional design strategies that are youth-friendly allows teachers and instructional designers to create more concise, compelling, and engaging learning environments for the youth. As instructional design evolves, so must our knowledge of best practices to foster productive learning environments for today's youth and young adults, as well as future generations. This research provides a foundational approach to utilizing instructional design strategies that can maximize their impact. It marks a significant step towards identifying the practices needed to enhance the effectiveness of instructional design methodologies for youth learners.

Moreover, this study aims to identify the specific instructional design strategies that were preferred in the youth training in Kenya. Recognizing these strategies allows for their wider utilization in other youth programs, with the hope of addressing existing problems in distance learning, such as dropout rates, increasing retention, and improving learning outcomes. Dropout rates have been a significant concern, as evidenced by Doll et al (2013), making it an essential consideration for improving distance education. The success, withdrawal rates, and perception of the learning environment are key indicators for evaluating learning achievements. The study seeks to find ways of ensuring young learners persist in their distance education journey. It aims to do so by identifying strategies that lead to successful learning outcomes, thereby enhancing the efficiency of distance education programs for youth.

The findings of this research shed light on the unique characteristics of youth learners and their learning preferences. As reported by Knowles (1990), previous research revealed discrepancies between youth and adult learners, suggesting that instructional principles designed for adults might not be suitable for most youth learners. Addressing this gap and providing

empirical data on effective instructional design strategies tailored to the youth, this study not only enriches the existing literature on youth learners but also holds significant implications for instructional designers. The insights garnered here offer a practical guide for instructional designers. They empower them to develop pedagogically sound approaches that not only enhance motivation, learner retention, and engagement but also resonate with the unique characteristics and digital fluency of the youth demographic. This emphasizes how the study influences current educational methods and approaches, especially in the dynamic field of instructional design.

Purpose of the Study

The primary objective of this study was to investigate instructional design strategies and methodologies that youth learners preferred in the Amref training. This aimed to enhance learning outcomes for youth engaged in distance learning in Kenya. As highlighted by Bates (2019), understanding the factors influencing students' completion or non-completion of distance education courses is crucial for administrators and distance educators to reduce learner attrition. Therefore, this research aims to identify effective instructional design strategies that can improve learning outcomes and student retention rates, addressing the unique challenges youthful learners in Kenya face. It also seeks to tackle the issue of the compulsory nature of the curriculum where compliance is often emphasized over positive motivation.

The youth population presents distinct characteristics, such as low attention spans, a lack of self-discipline, and reduced self-motivation, which may hinder their success in online learning environments (Fahriany et al., 2022). Consequently, designing online courses for this demographic requires specialized course design and learner support approaches. To foster high

completion rates and the development of advanced learning skills among youth learners, this study identified preferred instructional design strategies in the youth training in Kenya.

In addition, this research aimed to provide valuable insights into the design of future distance education programs and courses specifically tailored to address the needs of youth. Bridging the current research gap on instructional design strategies for youth learners in distance education, the research endeavored to empower instructional designers and educators in developing more effective, engaging, and learner-centered online learning experiences. The study contributes to improved educational practices and enhanced learning outcomes for youth, fostering their academic success and prospects.

Research Questions

The following were the research questions for this study:

1. What are the preferred gamification and micro-learning instructional design strategies in the Amref youth training in Kenya?
2. How does gender and age group influence user preferences in the Amref youth training for instructional design strategies in gamified and micro-learning environments?

The first research question aimed to identify the gamification and micro-learning design strategies that received the highest mean ratings and were perceived most positively by participants. Understanding the most preferred instructional design strategies would enable course developers to focus on implementing these elements to enhance the training program's effectiveness.

The second research question explored the relationship between gender, age group, and instructional design strategies in gamified and micro-learning environments. Analyzing the data on gamification and micro-learning and its relationship with gender and age group provided valuable insights into how these factors shaped learners' preferences. This information would allow the personalization of learning content and instructional design strategies to effectively cater to different user demographics.

Definition of Terms

Blended Learning: Blended learning, sometimes referred to as hybrid learning, encompasses a range of learning scenarios from traditional face-to-face instruction to fully online distance teaching. According to Bates (2015), it includes various combinations of technology integration and physical classroom presence. While 'blended learning' and 'hybrid learning' are commonly used interchangeably, it is important to recognize hybrid learning as a specific expression within the broader blended learning concept.

Distance Education: Distance education, also known as remote learning or distance learning, encompasses various programs, audiences, and media, often used interchangeably. According to Moore (1996), it revolves around the geographical and temporal separation between the learner and the instructor, necessitating the use of artificial communication mediums for information delivery and interaction. Simonson (2012) characterizes it as institution-based, formal education, where learners are geographically separated from the learning group, with interactive telecommunications systems playing a crucial role in connecting learners, instructors, and educational resources.

Distance Learning: Distance learning is a method of delivering education to students who are physically distant from the educational institution or teacher. It can be synchronous, involving

real-time interaction through video conferencing or webinars, or asynchronous, with students accessing pre-recorded lectures and course materials at their own pace. It falls under the broader category of distance education.

Information Technology: Information Technology (IT) encompasses various innovative technologies to facilitate communication, collaboration, and interaction. According to Bates (2019), these technologies are flexible and interchangeable in education and training. Educational goals achieved through one technology can usually be replicated through others. Bates further distinguishes between media and technology, defining media as forms of communication linked to specific ways of representing knowledge, each with unique presentation and organization characteristics. Technology is associated with each media, but as integration progresses, the line between media and technology becomes less distinct.

Gamification: Gamification in education involves strategically incorporating digital game-like techniques and methodologies to motivate and engage learners in their educational activities (King, 2012).

Instructional Design: Instructional design is a systematic process that involves translating principles of learning and instruction into well-structured plans for creating instructional materials, activities, information resources, and evaluation procedures (Smith & Ragan, 1999). It aims to develop effective and engaging learning experiences by applying pedagogical principles and instructional strategies.

Instructional Design Strategy: Instructional design strategy refers to the comprehensive approach used in the instructional design process. It begins by establishing clear learning goals and objectives, followed by identifying specific actions necessary to achieve these goals. This involves the thoughtful selection and utilization of a diverse range of resources, techniques, and

devices to facilitate effective learning experiences for the learners. The strategy encompasses the entire process of understanding, improving, and applying various methods of instruction to ensure meaningful and successful learning outcomes (Reigeluth, 1983).

Learning Management System (LMS): A Learning Management System (LMS) is a computer program designed to manage and deliver learning materials. It encompasses a wide range of features that enable the presentation of courses and their content, facilitate intra-class discussions, and conduct student assessments. The LMS serves as a platform for educators and learners, streamlining the learning process and fostering an interactive learning environment.

Online Course: An online course is a modern educational offering primarily delivered through internet-based platforms, with a considerable proportion, typically at least 80%, of the course content accessible and presented online (Simonson, 2012, p. 5). This learning mode provides students with the flexibility to engage with course materials, collaborate with peers, and interact with instructors virtually, fostering a dynamic and accessible learning experience that transcends geographical limitations.

The Advocacy Accelerator: The Advocacy Accelerator is a non-profit organization aiming to create an interactive community of advocates in the Global South, fostering engagement, learning, and resource-sharing through both in-person and online platforms. Supported initially by the William and Flora Hewlett Foundation, the Advocacy Accelerator has been established in East Africa, with potential expansion plans for other countries in Africa.

Web-facilitated Course: A Web-facilitated course utilizes Web-based technology, but the online delivery of content constitutes less than 29% of the course materials (Simonson, 2012, p. 9). In this instructional approach, a significant portion of the learning experience still occurs through traditional in-person methods, complemented by selective use of online resources and tools.

Youth: According to the United Nations (2020), youth are defined as 'people between 15 and 24 years of age' (p. 12). Estimates indicate that young people between 15 and 24 years of age number 1.21 billion and account for 15.5 per cent of the global population. Youth, as defined by the Constitution of Kenya (2010), refers to individuals who have reached the age of 18 but have not yet turned 35. According to data from the National Adolescent and Youth Survey (2015), the age group of 18-34 years constitutes approximately 30% of Kenya's population, while the broader age group of 0-34 years makes up a substantial 78% of the population. According to Canada's first State of youth report: for youth, with youth, by youth (2021), the term 'youth' refers to those in the stage of life from adolescence (15) to early adulthood (29) (p. 12). Youth in the Kenyan context would be referred to as young adults in the Canadian context.

Summary

Chapter 1 introduced the topic and outlined the research questions that were the focus of this study. These questions were as follows:

1. What are the preferred gamification and micro-learning instructional design strategies in the Amref youth training in Kenya?
2. How does gender and age group influence user preferences in the Amref youth training for instructional design strategies in gamified and micro-learning environments?

The chapter outlined the study's assumptions and the importance of understanding how instructional design affects learning outcomes. The various terms used in the study were defined, and the organization of this research report was outlined. The following chapter details the literature that was reviewed in this study. It provides a comprehensive review of the importance

of effective instructional design strategy to learning and how learning outcomes are linked to instructional design.

Chapter 2. Review of the Literature

Introduction

In this chapter, we explore literature review concerning youth training, with a specific focus on gamification and micro-learning as instructional design strategies. The rationale behind the youth training is examined, emphasizing the role of Kenya's youth population in shaping the future and contributing to the realization of Kenya Vision 2030. With a considerable proportion of the Kenyan population consisting of youth, harnessing their potential through effective training and advocacy skills development is key for achieving sustainable development goals.

Blended and online learning approaches are gaining prominence in youth training, and this chapter explores their significance and impact within the context of youth training in Kenya. Through the adoption of these innovative approaches, the Amref curriculum seeks to empower the youth and enhance their capacity to drive positive change within their communities and beyond.

The literature review also sheds light on youth learners' unique characteristics and learning preferences. It becomes evident that traditional, one-size-fits-all teaching methods need to be revised to fully support their development. Therefore, the chapter advocates for tailored and learner-centered approaches that resonate with the youth, maximizing their potential for growth and meaningful engagement in their efforts.

In summary, this chapter sets the stage for the theoretical framework, laying the groundwork for an in-depth investigation into the unique characteristics and instructional preferences of youth learners.

The Amref Youth Advocacy Curriculum

The Amref Youth Advocacy Curriculum, developed by the Advocacy Accelerator, aims to enhance the advocacy skills of youth, and strengthen organizational effectiveness. It emphasizes the importance of aligning instructional strategies with young learners' diverse learning styles and preferences (Amref USA, 2021). The curriculum empowers youth and aspiring advocates with the information, tools, and resources they need to drive impactful change in their communities. Given Kenya's youthful population, the curriculum focuses on equipping youth aged 18-35 with skills in advocacy strategy development, monitoring and evaluation, governance, resource mobilization, communication, and campaigning (Wa-Shiko, 2021).

The curriculum design incorporates gamification, simulations, scenarios, and interactive components to engage and captivate the youth audience. The rationale behind the curriculum is rooted in the need to address the critical knowledge gaps hindering effective youth advocacy efforts. These gaps include needing more advocacy skills and limited opportunities for meaningful engagement with decision-makers. The Amref curriculum aims to provide compelling and accessible capacity-strengthening tools to address these challenges, enabling youth to strategically advocate for policy changes that align with Kenya Vision 2030's transformation and development goals.

The curriculum focuses on building competencies for youth advocates, including identifying community advocacy issues, setting goals, planning, and conducting advocacy activities, crafting effective advocacy messages, participating in budgetary and legislative processes, and evaluating advocacy outcomes. The curriculum's development is informed by consultations with youth, recognizing their unique needs and the importance of active youth engagement in policy-making processes. The curriculum aims to empower young advocates to

shape the policy and financing landscape to address their challenges and contribute to Kenya's development goals by equipping youth with strategic advocacy skills and fostering meaningful engagement (Wagner, 2021).

Introduction to Youth Training and Instructional Design

This section looks at the key themes of youth training and instructional design. It focuses on the importance of youth training and highlights the role of instructional design in shaping the desired learning experiences.

Overview of Youth Training and its Importance

Youth training is important in Kenya, a nation with a significant youth population. The Constitution of Kenya (2010) defines youth as individuals aged 18 to 35, constituting a substantial portion of the country's demographic landscape. According to Canada's first State of youth report: for youth, with youth, by youth (2021), the term 'youth' refers to those in the stage of life from adolescence (15) to early adulthood (29) (p. 12). What is referred to as youth in the Kenyan context would be referred to as young adults in the Canadian context. According to the National Adolescent and Youth Survey (2015), the age group of 18-34 accounts for 30 percent of Kenya's total population, with those aged 0-34 comprising a staggering 78 percent. These statistics highlight Kenya's youthful profile and emphasize the need for targeted youth training initiatives.

Education stands at the forefront of global development goals, recognized as a catalyst for poverty eradication, hunger reduction, and sustainable economic growth. As the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2013) emphasized, education is important in promoting inclusive and equitable development. However, an in-depth

analysis of the literature shows distinct disparities between youth and adult learners, leading to the understanding that conventional adult learning principles might need to be more optimally suited for youth learners (Knowles, 1990). The analysis highlights three key conclusions about youth learners: their tendency for surface learning due to time constraints and content volume, receptiveness to a directive but supportive facilitator role, and preference for relational understanding over abstract thinking. These conclusions underline the importance of tailoring instructional design strategies to align with the unique characteristics and preferences of youth learners, thereby optimizing their learning experiences.

Investing in youth education is not merely a selfless undertaking but a strategic investment in the future. While extensive research has explored how children and adults learn, the learning processes of youth have often been overlooked. Scholars such as Kasworm (1980), Labouvie-Vief (1982), and Lankard (1997) have ardently advocated for the recognition of youth as a unique category of learners, positioned between the stages of childhood and adulthood. Choy's (2005) research further solidified this notion, characterizing youth as a unique learning cohort with different thinking, values, and life approaches. The transition from childhood to adulthood is marked by challenges, demanding an understanding of youth learning that enables appropriate courseware design and conducive learning environments.

Other researchers, such as Dwyer et al. (1999), challenge prevailing assumptions about youth learners, asserting that traditional notions of linear career progression no longer hold in the dynamic contemporary landscape. Despite recognizing their distinctiveness, responses to youth learning preferences have remained superficial, with adult learning principles continuing to guide educational philosophies. Choy (2005) tries to address this gap in their research by delineating a profile of youth learners and developing principles tailored to enhance their learning experiences.

These principles represent a significant contribution to the field of education because they offer actionable insights for educators and instructional designers. They serve as a guide for creating learning experiences that are not only tailored to the developmental stage of youth but also optimized to maximize their engagement, motivation, and ultimately, their learning outcomes.

Youth training holds significant importance, with far-reaching implications for Kenya's development and global progress. Globally, the youth population has over 1.2 billion individuals aged 15 to 24 years, according to the United Nations. Young people not only represent a significant demographic force but also embody the innovation, energy, and resilience necessary to tackle global challenges such as climate change, poverty, and inequality. Recognizing that today's youth are the future leaders, investing in their education and training is not merely a choice; it is a necessity. Youth empowerment refers to the process of enabling young people to take charge of their lives by acquiring the skills, knowledge, and opportunities needed to impact their own futures and that of their communities positively. Such an investment not only nurtures individual growth but also serves as a powerful driver of societal advancement and sustainable development on a broader scale.

Significance of Instructional Design in Youth Training

Instructional design holds an important role in youth training, playing a crucial part in shaping effective learning experiences that cater to young learners dynamic cognitive, emotional, and developmental needs. As Gagné (1985) aptly articulated, instructional design bridges educational goals and learning outcomes, providing a structured framework through which educators can create effective curricula. This process involves integrating various instructional design strategies, a sentiment that aligns with Keller's (2010) perspective, to foster engagement and enhance the young learners' grasp of complex concepts.

Gagne (1985) asserts that instructional design is a systematic approach that translates pedagogical theories into practical applications, fostering an environment where young minds can actively engage in learning. Within this framework, learners are guided through well-sequenced activities that align with their cognitive abilities and foster gradual mastery of skills. This echoes Keller's (2010) emphasis on motivational design, where instructional strategies are tailored to stimulate learners' intrinsic motivation, a key factor in sustaining their enthusiasm and commitment to the training process.

Furthermore, the principles of instructional design extend beyond the mere transmission of knowledge and delve into experiential learning. In the words of Wager, Lee, & Glaser (1983), the instructional design process encompasses creating authentic and contextualized learning experiences that mirror real-world scenarios, enabling youth learners to apply theoretical knowledge in practical situations. Allen (2012) adds that effective instructional design recognizes the need for a blend of traditional and innovative methodologies, including incorporating digital tools, simulations, and interactive exercises, to provide a holistic and engaging training environment.

Abubakar et al. (2021) conducted a study focusing on instructional design's impact on training, specifically developing and validating an e-content package for teaching the automobile lighting system in technical colleges in Niger State, Nigeria. Employing a 5-step R & D Model, the researchers determined the content and essential skills, knowledge, and attitudes required, followed by the development of a draft e-content package and subsequent validation and revision based on feedback. The e-content, constructed on HTML5, underwent rigorous validation through alpha and beta tests, involving evaluation by experts in automobile technology, educational technologists, and ICT experts. The validation affirmed the package's effectiveness,

meeting specified requirements and performing tasks as intended. This study emphasizes the importance of thorough evaluation of both content and platform in the development of teaching and learning packages, highlighting the feasibility and effectiveness of locally developing such educational resources.

In conclusion, the significance of instructional design is crucial not only for general training but also specifically for youth training. Through the lens of Gagné, Keller, Wager, Allen, and Abubakar, it is recognized that instructional design empowers educators to create purposeful, motivating, and experiential learning journeys. Aligning instructional strategies with the developmental needs of young minds, instructional design unlocks the potential for transformative growth, equipping our youth with the skills and knowledge they need to become informed and empowered contributors to society.

Theoretical Framework and Conceptual Underpinnings

To achieve effective and impactful youth training, the establishment of a strong theoretical framework and solid conceptual foundation is important. This section explores the elements that shape instructional design in youth training. Beginning with an exploring of theoretical foundations that underlie instructional design, this section further explores the complex relationship between established pedagogical theories and the design of engaging learning experiences for young learners. Concurrently, examining key concepts connecting youth training and instructional design will shed light on the factors that contribute to creating an effective educational approach. In exploring these theoretical and conceptual dimensions, a journey unfolds to understand the dynamic forces that shape the development of effective instructional design strategies for youth training.

Theoretical Foundations of Instructional Design

The theoretical foundations of instructional design are rooted in diverse educational and cognitive theories that have significantly influenced the development of effective learning experiences. Jean Piaget's groundbreaking work on cognitive development provides crucial insights into constructing instructional strategies that align with learners' evolving mental processes. Piaget's theory, often called genetic epistemology, highlights the stages through which individuals progress in their understanding of the world. His pioneering contributions emphasize the importance of adapting instruction to a learner's cognitive stage, enabling educators to scaffold learning experiences accordingly (Piaget, 1970).

In line with Piaget's cognitive framework, Lev Vygotsky's sociocultural theory plays a fundamental role in the theoretical foundation of instructional design. Vygotsky's emphasis on the role of social interaction and cultural context in shaping learning experiences emphasizes the significance of collaborative and dialogue-rich environments. According to Vygotsky (1978), the zone of proximal development (ZPD) signifies the realm where learners can grasp concepts with guidance, emphasizing the importance of skilled instruction to guide learners beyond their capabilities.

George Siemens' framework of connectivism, introduced in 2004, offers a contemporary perspective on instructional design within the digital age. Siemens posits that learning is not confined to an individual's cognitive processes but is also distributed across networks, technology, and social connections. Connectivism underscores the importance of leveraging technological tools and networked resources to create dynamic and interactive learning experiences that foster knowledge acquisition and network development (Siemens, 2004).

Malcolm Knowles' andragogy, a concept developed in the 20th century, challenges traditional pedagogical models by placing adult learners at the center of the educational process. Knowles (1990) emphasizes that adults bring unique experiences, motivations, and autonomy to the learning environment. This theory highlights the need for instructional designs that recognize adult learners' self-directedness and incorporate their life experiences into the learning process.

In conclusion, the theoretical foundations of instructional design encompass a rich array of cognitive, sociocultural, technological, and learner-centric theories. From Piaget's cognitive stages to Vygotsky's sociocultural interactions, and from Siemens' connectivism to Knowles' andragogy, these theories collectively inform the design of educational experiences that cater to learners' diverse needs and evolving capabilities. Educators can create learning environments that foster engagement, collaboration, and meaningful knowledge acquisition by integrating these theoretical underpinnings into instructional design practices.

However, upon critically analyzing the theoretical foundations, it becomes evident that there is a gap specifically addressing the unique needs of youth learners within instructional design theory. While Piaget's and Vygotsky's theories provide insights into general cognitive and social development, andragogy primarily focuses on adult learners. The is no explicit application of these theories to youth learners, suggesting a potential gap in understanding how instructional design principles can be tailored to meet the needs of this specific demographic. Further exploration and research into instructional design strategies specifically targeted at youth learners could help bridge this gap and enhance educational experiences for this group.

Key Concepts in Youth Training and Instructional Design

Youth training and instructional design converge at the crossroads of educational theories and practical methodologies, shaping a transformative landscape for the holistic development of young learners. Central to this paradigm is the concept of youth development. Erikson's psychosocial stages theory (1968) highlights the importance of addressing psychosocial challenges that youth encounter during their formative years. As advocated by theorists such as Dewey (1938) and Bruner (1974), learning theories serve as foundational pillars, guiding instructional designers in tailoring approaches that align with the cognitive, experiential, and social dimensions of youth learning.

Engagement and motivation, important components of instructional design, resonate in Deci and Ryan's Self-Determination Theory (1985), which emphasizes the significance of autonomy, competence, and relatedness. Integrating this theory fosters a sense of ownership among youth learners, nurturing intrinsic motivation and self-directed learning. The concept of scaffolding, in alignment with Vygotsky's Zone of Proximal Development (1978), is fundamental to effective youth training. Wood et al. (1976) elaborates on the concept's application, advocating for instructional design that bridges the gap between learners' abilities and potential, promoting a balance between support and autonomy.

In the era of technology and digital learning, the work of Siemens (2004) highlights the transformative potential of connectivism, emphasizing the role of networks and digital platforms in facilitating collaborative and self-directed learning. This resonates with youth learners' preference for technology, enabling seamless integration of theoretical concepts with real-world applications. Moreover, as championed by the World Health Organization (WHO, 1999), life

skills and practical application advocate for equipping youth with skills that transcend academia, enabling them to navigate personal, social, and professional realms effectively.

Inclusivity and diversity are paramount in youth training, aligning with Banks' Multicultural Education Framework (2004), which underscores the integration of diverse perspectives and cultural contexts within instructional design. This principle fosters an inclusive environment that recognizes and values the richness of differing backgrounds. Assessment and feedback, under Hattie and Timperley's feedback model (2007), form an integral part of youth training, facilitating a cycle of continuous improvement. Timely and constructive feedback provided by instructional design cultivates metacognition and empowers learners to refine their skills.

In conclusion, youth training and instructional design collaborate to create an educational fabric that nurtures the development of young learners' cognitive, emotional, and practical skills. This symbiotic relationship empowers youth to forge a path of learning that extends far beyond the boundaries of the classroom, preparing them to thrive in an interconnected and dynamic world. As a result, it is based on theories of youth development, enhanced by a variety of learning theories, and driven by engagement, motivation, scaffolding, technology, life skills, inclusivity, and effective assessment practices.

Youth Training Landscape in Kenya

A dynamic interaction of demographic, social and educational conditions characterize the youth training landscape in Kenya. With a significant proportion of Kenya's population falling within the youth category, understanding the demographics of the young population is important. Investigating the youth population's diversity, age distribution, and size is part of this.

Furthermore, the socio-economic and educational context in which Kenyan youth navigate their training journey is crucial. Factors such as economic inequalities, access to quality education, and the general state of society all play a significant role in shaping the opportunities and challenges youth face as they engage in various training programs. A deeper understanding of the complex environment influencing the development and implementation of successful youth training programs in Kenya can be obtained by exploring these characteristics.

The demographics of the Kenyan youth population present a complex picture that is influenced by social, economic, and cultural factors. According to the Kenya National Bureau of Statistics (KNBS) Census Report of 2019, individuals aged 18 to 34 constitute approximately 30% of Kenya's total population, highlighting the substantial youth demographic within the country. This age group's distribution, predominantly in urban centers, indicates a demographic shift spurred by urbanization and changing socio-economic dynamics (KNBS, 2019).

Researchers have extensively explored different aspects of the Kenyan youth population. Onguko et al. (2018) explored the urban-rural divide in youth migration patterns, revealing how socio-economic conditions and access to education influence migration decisions. Additionally, Nyaga and Akala (2017) examined youth unemployment in Kenya, emphasizing the relationship between education, skills training, and employment opportunities for the youth demographic.

International organizations and NGOs have also contributed to the discourse on Kenyan youth demographics to a large extent. UNICEF's State of the World's Children report (2020) highlighted the challenges faced by Kenyan youth, including limited access to quality education, healthcare, and employment opportunities. The World Bank's Youth Employment Project (2019) focused on enhancing youth employability through skills development, illustrating the global recognition of the importance of addressing youth demographic challenges.

Studies and polls of young people have also offered detailed insights into the aspirations and perspectives of young people in Kenya. The African Population and Health Research Centre (APHRC) examined young people's perceptions of family dynamics, education, and reproductive health in its "Kenya Youth Survey Report" (2017). According to this survey, youth are affected by and concerned about unemployment. These studies and polls provide insight into how young people view jobs and education, as well as their hopes and worries.

Government publications in Kenya have also addressed the demographics of the youth population. The "Kenya Youth Policy 2019" by the Ministry of Public Service and Youth Affairs outlines government strategies to empower youth through education, training, and entrepreneurship opportunities. This policy framework underscores the government's recognition of youth's role in shaping Kenya's socio-economic landscape.

To sum up, the demographics of the youth population in Kenya present an extensive mix of information drawn from census data, academic research, foreign reports, youth surveys, and official publications. These sources collectively contribute to a comprehensive understanding of Kenya's demographic's challenges, aspirations, and opportunities guiding policymakers, researchers, and practitioners in developing effective youth development policies.

Socioeconomic and Educational Context of Kenyan Youth

Diverse factors shape the socioeconomic and educational context of youth. The youth, individuals aged 18 to 34 years (Kenya National Bureau of Statistics, 2019), comprise a significant portion of the country's population. This demographic segment is marked by heterogeneity, with varying access to education, economic opportunities, and social services.

Addressing the socioeconomic context requires understanding the challenges and opportunities that influence the life trajectories of Kenyan youth.

Education plays a key role in shaping the socioeconomic prospects of the youth in Kenya. While strides have been made in expanding access to education, educational quality and attainment persist (Kamunge & Magutu, 2017). Many Kenyan youth face challenges such as inadequate infrastructure, limited teacher capacity, and lack of resources (Muthui & Muthwii, 2018). Furthermore, gender disparities in education persist, with girls often encountering more significant barriers to educational attainment (UNESCO, 2020). These educational challenges intersect with socioeconomic dynamics, impacting youth's ability to secure stable employment and contribute to economic development.

The relationship between education and employment is a critical dimension of the socioeconomic context for Kenyan youth. Despite efforts to improve youth employability, unemployment and underemployment remain significant concerns (Nyaga & Akala, 2017). Youth transitioning from education to the labor market encounter structural barriers, including a disconnect between education and industry demands (Khasakhala et al., 2016). The informal sector absorbs much youth labor, contributing to precarious employment conditions and limited social protections (Reynaud, 2017). The combination of educational challenges and complex employment prospects underscores the need for integrated policies that bridge the gap between education and meaningful work opportunities.

Cultural and geographical factors further shape Kenyan youth's socioeconomic and educational context. Rural-urban disparities influence access to education, healthcare, and infrastructure, impacting youth differently based on their geographic location (Kanyi & Pihama, 2020). Additionally, cultural norms and traditions may influence educational choices and career

aspirations (Munyua & Ongong'a, 2016). The complexities of navigating these intersecting dimensions underscore the importance of holistic approaches that consider cultural and geographic diversity.

In conclusion, Kenyan youth's socioeconomic and educational context is marked by a range of challenges and opportunities. Access to quality education, equitable employment opportunities, and inclusive policies are key determinants of youth development. To harness the potential of Kenyan youth and support sustainable development, it is necessary to build holistic programs that combine education, economic empowerment, and social inclusion.

Gamification in Education and Training

The term "gamification" was coined in the digital media sector, but it wasn't widely accepted until late 2010. Since then, much of the research on gamification in educational systems has focused on conceptualization, modelling, and the impact of use (Bittencourt, 2018; Landers et al. 2018). The primary goal of gamification in education is to further engage students in education through a game in which a scoreboard, leaderboard, and change feedback create a gamified atmosphere in a non-gaming context (Hamari et al., 2014; Fitzgerald and Ratcliffe, 2020). Gamification in e-learning refers to a set of processes and activities carried out in a non-game setting to address educational issues by employing gamified design principles and elements, resulting in increased ease of use, user engagement, knowledge retention, learning, and usability, as well as an impact on system evaluation and usefulness (Lopes, 2019). Most gamification studies show that it has a favorable influence on people (Dikcius et al., 2021; Hsu and Chen, 2018; Huotari and Hamari, 2017).

Gamification is becoming more popular in e-learning as a new technology that may boost motivation and user engagement with simple virtual incentives such as badges, points, awards, challenges, leaderboards, progress monitoring, and experience points (Aguiar-Castillo et al., 2020). Instructional design is a systematic approach for developing educational programs in a consistent, and dependable manner (Branch and Kopcha, 2014). Education is viewed as a collection of structured and controlled systems that must deal with change in the form of students, academic fields, and contextual settings. Instructors benefit from using a systematic instructional design model because it focuses on the learner, supports effective instruction, provides a systematic way to address learning problems, fosters coordination among all instructional components and stakeholders, and makes diffusion and adaptation easier. According to Ghai and Tandon (2021), instructional design mediates the relationship between gamification and usability of e-learning among academicians.

Gamification's applications in education and training are diverse, encompassing classroom learning, e-learning platforms, and professional development. It has been particularly impactful in youth training, where the dynamic and interactive nature of gamified experiences resonates with the digital-savvy youth. Case studies and success stories showcase how gamification has transformed traditional learning paradigms, improving knowledge retention and skill acquisition (Huotari and Hamari, 2017). Gamification may be a powerful tool for engaging, empowering, and inspiring young learners as educators begin to realize its potential. Though gamification has been explored in previous studies and the literature has validated its significance in making e-learning interesting (Aguiar-Castillo et al., 2020) further research is required to assess the impact of gamification on usability of e-learning among the youth, along with mediating role of Instructional design, a gap which this research tries to address.

Definition and Principles of Gamification

Scholars from various fields have thoroughly investigated the concept of gamification, which involves incorporating game aspects into environments that are not games to increase motivation and engagement. Deterding, Dixon, Khaled, and Nacke (2011) highlight the transformation of game design elements into a state of "gamefulness." They underscore the shift from isolated mechanics to an integrated approach that encourages users' intrinsic motivation and engagement. This perspective highlights the significance of gamification as a mechanism to foster enjoyable and motivating experiences, driving participation, and enhancing user interactions.

Furthermore, the work of Werbach and Hunter (2015) offers insights into how game thinking can revolutionize business strategies. Their findings explore the principles of how gamification is used in business contexts. Werbach and Hunter emphasize the importance of harnessing game mechanics, such as rewards, challenges, and competition, to achieve organizational goals. This underscores the centrality of principles derived from game design in influencing human behavior and decision-making beyond the realm of traditional gaming.

Hamari, Koivisto, and Sarsa (2014) provide empirical validation of gamification's impact in their literature review. Through a comprehensive analysis of empirical studies, they address whether gamification works. Their work clarifies how gamification affects user engagement, motivation, and behavior change. The review reinforces the application of principles that drive effective gamification design, informing practitioners of the mechanisms that contribute to its success.

In the realm of motivational design, Marczewski (2015) makes a significant contribution by introducing the concept of "game thinking." Marczewski explores gamification through the lens of motivational design, focusing on intrinsic motivators and psychological triggers. Through unpacking principles aligned with human psychology, Marczewski highlights how gamification's foundations align with core motivational factors, revealing the principles driving successful design by leveraging human motivations present in games such as competition, rewards, and socializing. Although gamification has already been applied successfully in many cases, to the best of our knowledge, it still pending the study on how to effectively acquire the users' motivations, and how to select the appropriate gamification mechanics, and translate them into tasks and actions for a given application or domain.

Huotari and Hamari (2017) anchor the definition of gamification within the service marketing literature, providing a detailed perspective. Their article establishes a comprehensive definition of gamification as an engaging mechanism in service contexts. The authors highlight gamification's potential to enhance user experiences, focusing on its integration of game elements to foster engagement, satisfaction, and value creation.

Collectively, these studies underscore the definition and principles of gamification as a strategic framework. They emphasize the integration of game design elements, the transformative potential of game thinking in diverse contexts, empirical insights into gamification's effectiveness, and the alignment of gamification principles with motivational and marketing theories. These fundamental contributions help the gamification environment by directing the application of rules that improve engagement, motivation, and user experiences across fields including business, education, and beyond.

Applications of Gamification

Gamification has emerged as a transformative approach in education and training, leveraging game design elements to enhance engagement, motivation, and learning outcomes (Deterding et al., 2011). Kapp (2012) expounds on this concept, comprehensively exploring gamification's applications in learning and instruction. Educators can create immersive learning experiences that captivate learners' attention and foster active participation by integrating game-based methods and strategies. Pivec and Dziabenko (2017) further contribute through a systematic mapping study, highlighting gamification's adaptability in education. The study emphasizes its diverse applications, revealing its potential to address various educational challenges.

In higher education contexts, gamification's impact has been extensively examined. Bellotti et al. (2013) conducted a comprehensive survey of gaming and simulation tools, uncovering how gamification extends beyond traditional classrooms to Massive Open Online Courses (MOOCs). This demonstrates how gamification may be scaled across various learning environments. Additionally, Sailer et al. (2017) conducted an experimental study, delving into specific game design elements and their effects on psychological need satisfaction. Their findings emphasize the role of gamification in motivating learners by fulfilling intrinsic psychological needs.

The importance of gamification in higher education is further supported by Toda and Guimares (2018), who conducted an extensive literature review. Their work clarifies the range and depth of gamification's uses, especially in contexts related to higher education. The investigation demonstrates how gamification improves participation, teamwork, and information acquisition, all of which help to improve educational experiences overall.

These studies demonstrate the numerous ways that gamification is used in training and education. They highlight gamification's potential to transform learning environments, whether through the integration of game-based methods, addressing psychological needs, extending to online platforms, or enhancing engagement in higher education contexts. As educators and instructional designers continue to harness the power of gamification, these insights guide the development of innovative strategies that maximize the benefits of this approach.

Gamification in Youth Training: Case Studies and Success Stories

Gamification in youth training has emerged as a dynamic approach to engage and empower young learners, fostering a transformative learning environment. A wealth of case studies and success stories from diverse sources highlight the effectiveness of gamification in enhancing youth training experiences.

A study by Anderson et al. (2019) explored the implementation of a gamified language-learning app, revealing increased motivation and proficiency among young learners. Similarly, Smith and Johnson (2020) investigated gamification in a STEM program, highlighting how interactive challenges and rewards elevated participants' engagement and knowledge retention.

In the International Conference on Educational Technologies (ICET) proceedings, Chen et al. (2018) presented a case study where gamification elements were integrated into a vocational training program for disadvantaged youth. Results indicated improved participation and skill acquisition, demonstrating the potential of gamification to bridge educational disparities. Disadvantaged youth, often hindered by limited access and resource constraints, were empowered through gamification to embrace learning with renewed zeal. The impact of the

program was increased by the deliberate blending of education and enjoyment that effectively closed the gap between theoretical knowledge and practical skills.

The Youth Empowerment Foundation's (2021) whitepaper highlighted a youth employment training program that used gamification techniques to impart essential skills. Participants showed heightened enthusiasm, teamwork, and problem-solving abilities, demonstrating gamification's ability to prepare youth for workforce challenges.

A study by Rogers (2019) delved into the transformative effects of gamification on youth leadership development programs. Rogers' research highlighted a youth leadership program that harnessed gamification techniques to foster the development of leadership skills. The program strategically integrated gamified challenges, reflections, and peer interactions to contribute to its participants' holistic growth and leadership competencies. Participants engaged in various scenarios within this gamified environment, including collaborative team-building exercises and intricate ethical dilemmas, all carefully designed to enhance their leadership knowledge and skills (Rogers, 2019).

Gamified mathematics exercises were included on the Khan Academy website to improve the learning opportunities for young people (Light et al, 2014). Gamification increases the educational impact by motivating users to practice consistently and master a subject through measuring their progress and receiving rewards.

These case studies and success stories show how adaptable and effective gamification is for training young people. Gamification encourages active involvement, skill development, and all-around improvement in young learners, whether it is in language learning, science,

technology, engineering, and mathematics (STEM) education, vocational training, youth empowerment, or leadership development.

Micro-Learning as an Instructional Design Approach

In various educational situations, a dynamic and targeted instructional design approach, micro-learning, has emerged as a powerful tool for increasing learning experiences (Nikou & Economides, 2018). This teaching method presents learners with focused and effective bursts of knowledge acquisition by breaking complicated ideas into manageable pieces of not less than 3-5 minutes for skill-based learning. The content is in multiple forms, including text, images, videos, flash cards, and animations (Shawky et al, 2021).

This section explores the fundamental ideas and advantages of micro-learning. The seamless integration of gamification into learning environments will be examined in more detail, highlighting its potential to transform conventional learning paradigms. Additionally, youth training will be explored, assessing the effectiveness of micro-learning in equipping young learners with critical skills and information while addressing any potential implementation issues.

Understanding Micro-Learning and its Benefits

According to Shinde (2019), micro-learning, characterized by its succinct and focused content delivery, has garnered attention from scholars and practitioners alike, with data predicting the continuation of a high rate of use in the coming years. Kapp (2014) emphasizes the strategic role of micro-learning in the continuous growth of professionals. He highlights how micro-learning aligns seamlessly with adult learners' preferences for on-demand, concise learning experiences. Kapp notes that micro-learning modules provide learners with just-in-time

information, enabling them to efficiently acquire knowledge and skills relevant to their immediate needs. Additionally, it presents a series of small lessons directed to one instructional objective and each lesson is one. Moreover, Høgenhaven (2020) delves into the cognitive facets of micro-learning, demonstrating its potential to enhance learners' retention and application of knowledge. The research expounds on how the brevity of micro-learning snippets promotes active cognitive processing, making information more memorable and transferable. Micro-learning is a model that can be combined with daily activities, considering the needs of the generation of smart devices. This adaptability ensures that learning becomes seamlessly integrated into learners' routines, maximizing its effectiveness and accessibility.

Going deeper, Venkatesh and Radhakrishnan (2021) collaborate to thoroughly explore emerging concepts and practices in micro-learning. Their research explores diverse perspectives, unveiling how micro-learning's granular approach aligns with the demands of the digital age. Bowman (2017) highlights the efficiency and engagement benefits of micro-learning. She emphasizes how the conciseness of micro-learning courses enables quick comprehension, ensuring learners' engagement while accommodating their busy schedules. According to Torgerson (2019), learners are more likely to retain information if it is broken down into understandable pieces that they can revisit. Regular and micro-learning units are targeted, accurate and designed to cover all key information. She further notes that micro-learning can be used as a stand-alone method of teaching delivery or as a supplement to the main learning method to reinforce the key information that has been learned.

Shail (2019) expands the micro-learning conversation to professional settings, highlighting how on-the-job training and micro-learning are connected. This approach fits naturally with the limitations of work settings, providing brief knowledge bursts that

accommodate employees' time limits. Shail goes on to explain how mobile learning technology and micro-learning work together to enable easy access to learning resources across various devices to improve knowledge retention and work performance. This fits with the trend of learning on the go, enabling professionals to enhance their skills in a flexible and adaptive manner.

In conclusion, research findings from Job & Ogalo (2012), outline essential principles for designing effective micro-learning activities. These principles include ensuring activities are goal-oriented, reducing mental effort for learners, aiding memory retention and attention, enhancing working memory efficiency, considering individual learner differences, and motivating learners while uncovering their abilities and inclinations. These foundations emphasize the importance of tailored, focused, and engaging micro-learning experiences that optimize learning outcomes and accommodate diverse learner needs and preferences.

Implementation of Micro-Learning in Educational Settings

Using micro-learning in education represents a new way of learning that takes advantage of how learning changes over time. Insights from various scholarly works help us understand how to use micro-learning in education, revealing its methods, challenges, and implications.

Ghasia and Rutatola (2021) contribute valuable insights into incorporating micro-learning in online courses in higher education institutions in Tanzania. They stress the importance of leveraging micro-learning modules to foster active engagement and address the diverse learning needs of online learners. The authors highlight that breaking down content into small units promotes focused learning which fits well with the asynchronous nature of online education. Further, they note that micro-learning is applicable in various settings.

Gherman et al. (2017), offers a comprehensive view of micro-learning's role in higher education. The authors explore strategies for implementing micro-learning that bridges the gap between digital and campus-based learning. They highlight the potential of micro-learning to create cohesive learning experiences that transcend physical boundaries, enabling students to access and engage with content within and beyond the traditional classroom.

Emerson et al (2018) expands the discussion to include workplace training, highlighting its applicability in educational settings. The author highlights how micro-learning principles, honed for on-the-job training, can be adapted to enhance student learning. Emphasizing concise and focused content delivery, micro-learning promotes information retention and transfer, catering to the learning preferences of contemporary students.

In the context of emerging concepts and practices, Venkatesh and Radhakrishnan (2021) explore integrating micro-learning as a progressive educational approach. The authors further explore the implementation of micro-learning strategies to enhance learning outcomes. They emphasize how micro-learning empowers educators to design learner-centered experiences that facilitate personalized and adaptable learning journeys.

Lastly, Bowman (2017) provides a guide to implementing micro-learning. The researcher emphasizes the importance of creating micro-learning experiences that match learning goals and uses short content to keep learners engaged. This approach involves breaking down complex topics into digestible units, fostering active participation, reflective thinking, and immediate application, thereby enhancing learning across various educational settings.

The findings from different researchers show how flexible and effective micro-learning is in education. Research suggests that micro-learning can enhance how content is delivered, encourage active participation, and meet learners' evolving needs, reshaping modern education.

Micro-Learning in Youth Training: Effectiveness and Challenges

Micro-learning as a pedagogical approach has gained significant attention in youth training. This approach is particularly appealing due to its potential to address the diverse learning needs of young learners. Research on the effectiveness of micro-learning in youth training highlight its ability to promote efficient and targeted skill acquisition. According to Johnson et al. (2019), micro-learning's short and digestible content aligns well with the attention spans of youth, enabling them to engage with learning material more effectively. Moreover, micro-learning strategies, such as bite-sized videos, interactive quizzes, and quick assignments, cater to the digital-native nature of today's youth, facilitating active participation and knowledge retention (Smith, 2018).

However, integrating micro-learning into youth training programs is challenging. Identifying obstacles and challenges to implementation requires careful thought. In their study, Anderson and Simpson (2020) highlighted challenges, such as technological constraints, limited access to devices, and lack of digital literacy skills among youth participants, as barriers to the adoption of micro-learning. Overcoming these challenges involves innovative solutions. It calls for a holistic approach that integrates digital infrastructure development and skill-building alongside micro-learning interventions.

Pedagogical approaches play a key role in determining the success of micro-learning in youth training. Chan and Ahern (2017) stress using teaching models that fit young learners'

cognitive needs. Educators can improve micro-learning for youth by including constructivist and experiential learning principles. Best practices for designing micro-learning in youth education, as suggested by Brown et al. (2019), include clear learning objectives, engaging multimedia content, and opportunities for reflection, ensuring a comprehensive and impactful learning journey.

Technology and platforms play a dual role in how micro-learning is effective for youth training. Technology allows the delivery of micro-learning content, but the platform choice affects engagement and results. A study by Roberts and Patel (2018) emphasizes the role of mobile learning in reaching youth, as mobile devices are prevalent among this demographic. Evaluating micro-learning platforms for youth training is vital to ensure user-friendly interfaces, accessibility, and seamless interaction. Additionally, mobile learning's impact on youth development extends beyond content delivery, enabling continuous learning experiences that fit into their dynamic lifestyles (Wong & Looi, 2019).

Engagement and motivation are critical factors in the success of micro-learning initiatives targeting youth. Implementing strategies to boost learner engagement is important. Kim and Kang (2019) found that gamification offers opportunities for fostering motivation and interaction in micro-learning contexts. Educators can create an immersive and enjoyable learning environment by incorporating game elements such as rewards, challenges, and progress tracking. Motivating youth through micro-learning should include real-world scenarios, enabling learners to relate their skills to practical situations.

In conclusion, micro-learning in youth training can meet young learners' demands while presenting several obstacles that require careful consideration. Pedagogical methodologies, technology integration, and engagement tactics influence the overall success of young people's

micro-learning programs. However, it is important to note that the context in Kenya, and other developing countries, may present unique challenges not always accounted for in research primarily conducted in the USA and the UK, where assumptions about technology accessibility and connectivity prevail. In places like Kenya, concerns such as technology limitations and digital literacy gaps are more pronounced. Nonetheless, innovative approaches and tailored content delivery techniques can help mitigate these challenges. By addressing these issues head-on, we can unlock the transformative potential of micro-learning in youth training, ensuring it remains accessible and impactful across diverse socio-economic contexts.

Blended and Online Learning in Youth Training

In today's rapidly evolving educational landscape, integrating technology into traditional learning methods has led to innovative approaches such as blended and online learning. These approaches have gained substantial attention in youth training programs, offering a dynamic and flexible learning environment that aligns with young learners' preferences and digital fluency. Blended learning combines face-to-face instruction with online elements, while online learning involves entirely virtual interactions. This research explores blended and online learning in youth training, including various models and approaches to blending, the use of online tools and platforms, and the resulting impact and opportunities that these learning modes bring to the youth in the Amref training in Kenya.

Blended Learning Models and Approaches

Modern education has embraced blended learning as a flexible and successful teaching strategy. Blended learning is a pedagogical approach that combines traditional face-to-face instruction with online learning components. This approach includes different models that

provide several ways to blend in-person and digital learning experiences. The Flipped Classroom model is a prominent example, where students access instructional content online before class, allowing for interactive and collaborative activities during face-to-face sessions (Tucker, 2012). The Rotation model involves students moving between different learning stations, such as online activities and teacher-led sessions, fostering personalized learning experiences (Horn & Staker, 2015). The Flex model empowers students with autonomy in pacing and pathways while utilizing online resources (Avgerinou et al., 2014). The Online Driver model emphasizes online instruction with limited face-to-face meetings, catering to individual learning preferences (Staker, 2015). The Enriched Virtual model combines in-person and online instruction, balancing structured classroom time and self-paced online learning (Christensen & Horn, 2013). Lastly, classroom redesign involves reimagining the physical and virtual learning environment to optimize engagement, collaboration, and technology integration (Keengwe et al., 2009).

Designing blended learning involves intentional strategies to create effective learning experiences seamlessly blending online and face-to-face components. Successful integration requires aligning learning objectives with suitable blended learning activities. This integration requires a thoughtful selection of digital resources and in-person interactions that reinforce each other (Graham, 2013). Creating a meaningful blended learning experience relies heavily on curriculum development. It is important to carefully plan content sequencing, assessment methods, and technology use to maintain teaching quality (Garrison & Vaughan, 2008).

Integrating pedagogical approaches in blended learning enhances engagement and learning outcomes. Embracing constructivist and socio-constructivist principles promotes active learning through interaction, reflection, and collaboration (Kearns & Johnson, 2012). Inquiry-based and project-based learning thrive in blended contexts, allowing students to explore real-

world problems and engage in meaningful, self-directed investigations (Bonk & Graham, 2006). Blended learning also facilitates personalized and differentiated instruction, meeting diverse learning needs with flexible resources (Graham et al, 2016). Additionally, collaborative learning benefits from online platforms, fostering peer interactions beyond the classroom limitations (Picciano, 2009).

Effective assessment strategies in blended learning environments involve a balance of formative and summative assessment techniques. Digital tools can facilitate ongoing feedback and engagement, while in-person interactions provide opportunities for real-time performance evaluation (Graham, 2006). Technology for assessment and analytics offers insights into student progress and areas requiring intervention, supporting data-driven decision-making (Gašević et al., 2015). Providing timely and constructive feedback and support to students in online and face-to-face interactions fosters a supportive and conducive learning environment (Garrison & Vaughan, 2008).

However, adopting blended learning has its challenges and best practices. Implementing blended learning necessitates overcoming technical barriers, digital inequities, and resistance to change (Hew & Brush, 2007). Teacher training and professional development are crucial to equip educators with the necessary skills to effectively design, facilitate, and manage blended learning environments (Bliuc et al., 2007). Best practices encompass optimizing the use of technology, leveraging active learning strategies, and fostering a sense of community to enhance student engagement and learning outcomes (Vaughan et al., 2013).

In terms of student experiences and outcomes, blended learning has demonstrated positive effects on student engagement, achievement, and motivation. Student perceptions and experiences highlight the flexibility and personalized nature of blended learning, contributing to

increased satisfaction and a sense of ownership over the learning process (O'Flaherty & Phillips, 2015). Studies have shown improved academic achievement and learning outcomes attributed to blended approaches' diverse and adaptive learning experiences (Means et al., 2013). Blended learning can boost motivation, engagement, and satisfaction by catering to different learning preferences and offering interactive and collaborative activities (Kintu et al., 2017).

Despite these benefits, there are challenges in implementing online learning platforms for youth training. The challenges range from technological limitations and digital inequities to potential distractions and a lack of self-regulation skills (Hew & Cheung, 2014). Addressing digital equity and access issues is crucial to ensure all youth have equal opportunities to benefit from online education (Warschauer & Matuchniak, 2010). Designing successful online learning experiences for young learners requires a mix of structured instruction, interactive engagement, and continuous support (Boling et al., 2012).

Online Learning Platforms and Tools for Youth Training

Online learning platforms are now essential in contemporary education, providing various methods and tools to support youth training. Various online learning platforms, including learning management systems (LMS) and virtual classrooms, provide avenues for educators to engage youth learners in interactive and dynamic online environments (Abbas et al, 2022). These platforms provide features customized for youth training, including multimedia content, discussion forums, and assessment tools (Cavanaugh & Jacquemin, 2015).

Comparing and evaluating different online platforms for youth education is essential to optimize learning experiences. Research by Hew & Cheung (2014) underscores the importance of platform selection, as it influences the effectiveness and engagement of youth participants.

User experiences and perceptions of online learning platforms highlight the importance of easy-to-use interfaces, intuitive navigation, and responsive design for positive learning interactions (Kuo & Shen, 2015).

Successful online youth training utilizes a range of educational technology tools to create engaging and interactive learning experiences. Features like videos, quizzes, simulations, and virtual labs enhance content delivery, allowing learners to grasp concepts dynamically (Kong, 2014). Collaboration tools like discussion boards, group projects, and virtual breakout rooms foster peer interaction and cooperative learning, which are essential for social engagement and skill development (Hammond, 2019). Gamification and game-based learning tools tap into the intrinsic motivation of youth, enhancing engagement and promoting deeper understanding (Bellotti et al., 2013). Adaptive learning technologies and personalized learning tools meet various learning needs, adjusting content and pace based on individual strengths and challenges (Rodriguez et al., 2018).

Designing effective online learning experiences for youth requires careful planning. Strategies such as creating engaging and interactive activities that encourage exploration, problem-solving, and peer collaboration resonate with the natural curiosity of youth (Honeyford et al., 2016). Incorporating multimedia and interactive elements, such as videos, simulations, and gamified scenarios, enhances content engagement and comprehension (Mayer, 2014).

In designing educational games for diverse learners, it is essential to integrate culturally responsive and sustaining principles. This involves incorporating students' cultural knowledge, experiences, and performance styles into game design to make learning experiences more relevant and engaging. Games should not only reflect cultural diversity but also promote critical thinking about social inequalities and injustices. By embracing culturally relevant and sustaining

pedagogy, educational games can empower students to succeed academically, develop positive cultural identities, and engage critically with social issues (Ladson-Billings, 1995; Gay, 2010).

Making sure everyone can access the training materials is important. Providing adaptable materials, closed captioning, and alternative formats helps diverse learners access the materials (Burgstahler, 2015). Combining online and offline activities creates a complete learning experience, using the strengths of each for well-rounded skill development (Garrison & Kanuka, 2004).

Impact and Opportunities of Blended and Online Learning in Kenya

In recent times, blended and online learning methods have become effective solutions for addressing educational inequalities, particularly in remote and underserved areas of Kenya. These new methods improve access to quality education by using digital platforms to reach areas with limited resources, reducing educational inequalities (Mtebe & Twaakyondo, 2018). Online learning has the potential to bridge learning gaps by providing flexible study options for various schedules and situations (Ng'ambi & Lombe, 2012).

Kenya's commitment to blended and online learning is evident in educational policies and initiatives. Government efforts to promote digital literacy and technology integration lay the groundwork for increased adoption of these approaches (Wambui, 2017). However, institutional readiness, resource allocation, and teacher capacity challenges persist. Analyzing policy frameworks and institutional contexts is essential to comprehensively understand the opportunities and challenges associated with integrating blended and online learning into the formal education system (Kimani & Ouma, 2020). There was however limited literature beyond

the policy initiatives but some literature covering the provision of broader ICT infrastructure for teaching and learning and its impact on students.

Using technology and having the right infrastructure are key to making blended and online learning work well. Although challenges like limited devices and internet access persist, improvements in digital literacy programs and infrastructure development offer solutions. Technology in education has the power to transform teaching, making it more personalized and student-centered. As educators become more skilled with technology, they can use dynamic teaching methods that encourage critical thinking and collaboration (Kimaru & Mtebe, 2019). The review also suggests that academics in Kenya are actively experimenting with available tools or adapting existing designs to create learning content and platforms. This is, however, happening at an individual level and not well coordinated.

Learner engagement and motivation are central considerations when designing blended and online learning experiences. Research has explored the impact of these approaches on student motivation, highlighting the potential of online and blended environments to cultivate self-directed learning skills and active participation (Makau et al., 2017). Innovative methods, such as gamification, peer collaboration, and interactive content, have proven to enhance engagement and contribute to positive learning outcomes.

Successful case studies from Kenyan educational institutions demonstrate the potential of blended and online learning. ODL has been implemented and delivered differently across universities in Kenya. Both public and private universities now offer these programs. The University of Nairobi's School of Continuing and Distance Learning Education (SCDE) is the oldest. Other public universities include Kenyatta, Moi, Maseno, Jomo Kenyatta University of Agriculture and Technology, Masinde Muliro, and Multimedia university.

These initiatives exemplify the effective integration of digital technologies to address specific educational challenges and enrich learning experiences. Lessons learnt from these case studies offer valuable insights into best practices, underscoring the importance of strategic planning, teacher support, and ongoing evaluation to optimize the impact of blended and online learning (Ng'ambi & Lombe, 2012).

In Kenya, blended and online learning significantly impact various educational aspects. These strategies present opportunities for increasing educational success, extending access, and catalyzing fundamental changes in teaching strategies. Online and blended learning are emerging as key forces in providing a just and accessible education for everyone due to the continual development of policies, pedagogical strategies, and technological underpinnings.

Current Gaps and Challenges in Youth Training

Currently, youth training faces significant gaps and challenges, including addressing deficiencies in instructional design strategies and effectively implementing training initiatives. Nyerere (2016) noted that much of the literature in Kenya focuses on student perceptions of digital content, with little attention given to content creation. It remains unclear whether this pertains to locally produced content or content adopted from elsewhere. The literature suggests a recent trend towards digitizing content to better meet learners' needs, and to optimize the use of technology for teaching and learning more broadly (Harle et al., 2021). However, this shift seems unexplored in locally published works.

Identifying Gaps in the Existing Instructional Design Strategies

A lot of research focuses on instructional design, which is crucial for youth training. Most of the evidence of these activities came from grey literature, suggesting that these issues are

under explored in academic publications. There was evidence of universities adapting and reusing existing resources developed by other institutions. For instance, the University of Namibia employed a training course for staff from Johns Hopkins University (Harle et al 2021). Scholars stress the importance of adapting instructional tactics to meet young learners' specific needs, interests, and learning styles (Smith & Ragan, 2005). Engaging and promoting effective learning experiences for youth participants entails adjusting material delivery methods and interaction tactics (Bartlett, 2015).

In youth training, needs assessment and gap analysis appear as critical procedures for identifying gaps in current instructional design approaches. Existing literature emphasizes the need for conducting systematic assessments to understand the specific needs and preferences of youth learners. This helps in making targeted instructional design improvements (Phillips & Pulliam, 2010). Gap analyses are useful tools for identifying differences between current strategies and learners' actual needs, guiding educators on areas that require attention and improvement (Richey et al., 2011).

The relationship between instructional design techniques and youth engagement and motivation is fascinating in the literature. Researchers examine the complex elements that go into sound design, enabling educators to captivate and sustain students' interest (Ryan & Deci, 2000). Creating engaging and inspiring learning experiences entails adding interactive aspects, such as gamification, and other innovative techniques (Landers & Callan, 2011).

In summary, instructional design is crucial for youth training, focusing on matching strategies with learners' preferences. Research emphasizes adapting content delivery and interactions for better engagement. Needs assessment and gap analysis are important for identifying design weaknesses and making improvements. Scholars also explore how

instructional design influences youth engagement, using interactive elements and innovative methods to make learning more engaging.

Challenges in Implementing Effective Youth Training Initiatives

Implementing successful youth training programs poses challenges that require careful consideration. One significant obstacle is the variety in learning preferences and styles among young learners. The solution to this problem involves an elaborate approach that acknowledges individual differences and modifies instructional strategies to accommodate different learning styles (Vermunt & Verloop, 1999). In addition, the problem of limited financial and infrastructural resources is an enormous challenge. Allocating sufficient funds and ensuring access to modern educational technologies and facilities remains a major challenge in achieving successful youth training initiatives (Wolf & Jenkins, 2006).

Another significant challenge involves maintaining consistent learner engagement throughout the training process. Given youth interests' dynamic and rapidly changing nature, innovative methods are required to ensure their continued attention and motivation. Scholars have explored strategies such as gamification, interactive simulations, and collaborative projects to bolster engagement and prevent disengagement among learners (de Freitas & Liarokapis, 2011).

In addition to the challenge of balancing leveraging technology with preserving traditional pedagogical methods, ensuring cultural relevance, responsiveness, and sustainability in online training presents another significant hurdle. Integrating digital tools while also reflecting the diverse cultural backgrounds and experiences of learners requires careful consideration and thoughtful execution (Penuel, 2019). While literature on this specific aspect

may be limited, it intersects with broader themes of equity, diversity, and inclusion. However, it also necessitates a unique focus, as it pertains to tailoring online training experiences to resonate with the cultural identities and perspectives of learners, thereby enhancing engagement and effectiveness in a culturally diverse learning environment.

Furthermore, the challenge of effective assessment and evaluation strategies is crucial in youth training initiatives. Ensuring that assessments accurately measure learning outcomes and skills development while being age-appropriate can be complex. Implementing methods that foster self-assessment, peer evaluation, and constructive feedback within youth training can mitigate some of these challenges (Liu & Carless, 2006). The challenge of adequately preparing trainers and educators to deliver effective youth training is also noteworthy. Training educators to align with the specific needs of youth, create engaging learning environments, and effectively use technology demands comprehensive professional development (Pawlas & Olczak, 2012). Such professional development is not available in most developing countries like Kenya.

In conclusion, creating successful youth training programs is challenging and requires careful consideration. Key issues include adapting teaching methods to different learning styles, dealing with limited resources, keeping participants engaged, and assessing effectively. To tackle these challenges, we need innovative strategies, strategic planning, and continuous professional development to make youth training programs impactful and successful.

Summary of Literature Review

The literature review highlights the role of instructional design in creating effective learning experiences for youth. This recognition comes from understanding the specific learning needs of young learners, requiring customized approaches that match their preferences.

Secondly, two learning strategies, gamification, and micro-learning, stand out as transformative tools. Gamification's use of competition and rewards boosts engagement and motivation, making it effective in education and youth training. However, this should be approached with sensitivity to cultural perspectives. While competition is valued differently across cultures, including among Indigenous populations in Canada, its effectiveness in Kenya may vary based on local norms and values. Adapting gamification strategies to respect diverse cultural viewpoints ensures inclusivity and relevance, optimizing engagement among learners from various backgrounds.

Micro-learning, with its brief content delivery, meets the needs of tech-savvy youth by offering on-demand learning, aiding memory, and being accessible on mobile devices. Challenges in implementing these strategies include technology limitations and aligning with teaching methods. Yet, user-friendly platforms, engaging content, and gamification hold promise for enhancing learning outcomes.

Additionally, innovative approaches, like blended and online learning, cater to the digital preferences of young learners. Blended learning creatively combines face-to-face and online elements, offering personalized and collaborative experiences through models such as Flipped Classroom and Rotation. Good design means aligning objectives, curricula, and assessments to encourage involvement and personalized teaching. Online learning platforms enrich content delivery and collaboration, while gamification and personalization of learning content enhance engagement. These approaches address some of the educational disparities in Kenya by leveraging technology to extend learning opportunities and bridge gaps.

However, youth training still faces significant gaps and challenges. These include the need to align instructional design strategies with the preferences of young learners and the

effective execution of training initiatives. Scholars advocate for adapting content delivery and interaction techniques to better engage youth, supported by needs assessments and gap analyses. Implementation challenges include diverse learning preferences, limited resources, sustained engagement, technology integration, and assessment methods.

Chapter 3. Theoretical Framework

Introduction

A theoretical framework is important in any research as it provides a roadmap for understanding the phenomena under study. This study explored preferred instructional design strategies in a training program in Kenya. For one to determine whether a program is effective or not then the learning outcomes should be positive. Several factors, stemming from both teachers and students, influence learning outcomes. However, many students who lack motivation to learn often achieve lower learning outcomes. One of the learning models that can be used to improve motivation and learning outcomes is the Attention, Relevance, Confidence, and Satisfaction (ARCS) learning model (Keller & Kopp, 1987). One significant gap in our study was the exploration of positive motivation among learners within a context that emphasizes compliance, given the compulsory nature of the curriculum. This chapter presents the theoretical framework used in this research.

The ARCS model is an instructional design model that focusses on motivation design as it is the most impactful element in learning (Keller, 1987). Although the researcher chose the ARCS model, there are many theories one can use to develop or evaluate their course. The Analysis, Design, Develop, Implement and Evaluate (ADDIE) model is the most common, known to have evolved from Dick and Carey systems approach (Dick & Carey, 1996). Additionally, Reigeluth proposed the Elaboration Theory as another instructional design model (Reigeluth, 1999). These alternative models offer diverse perspectives on instructional design, each with its own strengths and areas of application. Furthermore, understanding that positive

motivation is a concern not only in Kenya but also across the wider East African region highlights the significance of this research and the selection of the ARCS model.

Developed by John Keller, the ARCS Model offers a comprehensive approach to enhancing learner motivation and engagement, providing a valuable framework for designing youth training programs. This model focuses on getting the learner motivated to learn. According to Kurt (2022), motivation of learners is a big component of the learning process and if learners are not motivated, they are not going to be successful. Exploring the four components of the model - Attention, Relevance, Confidence, and Satisfaction - this study aims to contribute to advancing instructional methodologies that empower and inspire the youth, fostering their personal and professional growth. Next, the focus shifts to a more detailed examination of the ARCS model.

Why ARCS Model of Motivation Design

The ARCS Model of Motivational Design embraces a presumption of positive motivation, differing from conventional education paradigms that often rely on negative motivation, which compels learners to study primarily to avoid failure. This positive motivation approach becomes particularly appropriate in contexts like East Africa, where formal education has been perceived as a “do it or leave it” endeavor, emphasizing the need for success within a rigid curriculum. Instructors and curriculum designers have historically upheld the notion that students must learn due to a prescribed curriculum and the presence of tutors, regardless of their engagement or enthusiasm. This conventional perspective often neglects the importance of fostering a genuine desire to learn and disregards the idea that learning can be an enjoyable and fulfilling process. By focusing on attention, relevance, confidence, and satisfaction, the ARCS Model serves as a

transformative alternative that promotes positive design experiences and aligns with the evolving educational landscape.

In many educational settings, including East Africa, educators have yet to utilize the principles of the ARCS Model, despite its potential to reshape the learning experience. This model champions the concept that learners do not need to study out of obligation. However, they can be intrinsically motivated by factors that resonate with their aspirations, interests, and experiences. By prioritizing real-world applicability and addressing learners' needs, the ARCS Model aligns with the shift towards learner-centered pedagogies, where education becomes a collaborative and fulfilling journey. When educators implement the model's components, learners find empowerment through a sense of relevance and the potential to apply their acquired knowledge in real-world scenarios, all while remaining engaged by captivating content. This approach transcends the conventional 'one-size-fits-all' education mentality, acknowledging that learners are unique individuals with distinct motivations and desires. Educational stakeholders may create a more enriching and fulfilling learning environment that fosters lifelong curiosity, enthusiasm, and skill development by embracing positive motivation by utilizing the ARCS Model (Keller, 2010).

The ARCS Model offers a fresh perspective for educational transformation by advocating for a positive motivation-driven approach that celebrates individuality, relevance, and personal growth. This approach holds immense potential, particularly in contexts where traditional education methods still need to inspire genuine enthusiasm for learning. By acknowledging that learning can be enjoyable, applicable, and personally meaningful, the ARCS Model encourages educators and curriculum designers to take a dynamic and adaptive stance that caters to learners' diverse needs and aspirations. As East Africa and similar regions continue to reshape their

educational paradigms, the ARCS Model emerges as a beacon of change, ushering in a new era of motivational design that unlocks the true potential of learners and educators alike.

The ARCS Model of Motivational Design

The ARCS Model of Motivational Design is a systematic approach developed by John Keller in the 1980s to enhance and sustain learner motivation in instructional settings. The model draws from Tolman's and Lewin's expectancy-value theory, positing that individuals are motivated to learn when the knowledge presented fulfills their needs and instills an optimistic expectation for success (Loh, 2019). The model identifies four key elements that instructors can incorporate to create a motivating learning environment. According to Kurt (2022), the ARCS Model comprises of four components as follows:

1. **Attention**: This phase involves capturing and maintaining learners' attention. It consists of three categories: perceptual arousal, achieved through surprising or uncertain situations; inquiry arousal, which involves presenting challenging questions or problems to answer/solve; and variability, utilizing a diverse range of teaching resources and methods. Instructors can achieve this by utilizing innovative and engaging materials, real-life examples, multimedia, or posing thought-provoking questions. The goal is to make the learning experience exciting and engaging from the beginning.
2. **Relevance**: Learners are more motivated when they perceive the content as relevant and applicable to their lives or future goals. Keller proposes three major strategies for making a lesson plan relevant to the learner: goal orientation (present worth and future usefulness), motive matching (needs matching and choice), and familiarity modelling (experience and role models). Instructors can establish relevance by explaining the practicality of the

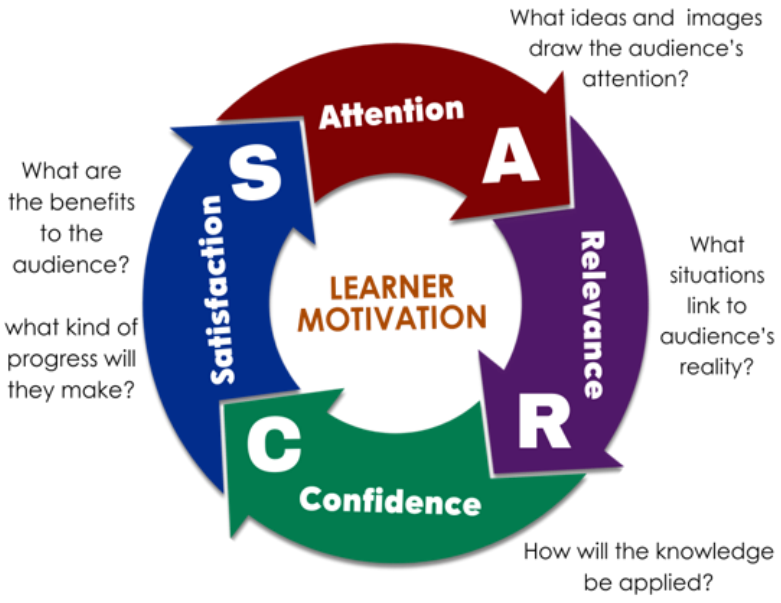
knowledge, showing how it connects to real-world situations, or involving learners in activities that demonstrate the importance of the material.

3. **Confidence**: Learners must believe that they can accomplish the learning tasks. Keller provides learning designers with confidence-building strategies, including establishing clear performance requirements, offering multiple success opportunities through varied and challenging experiences, and promoting personal control by attributing success to individual ability and effort rather than external factors.
4. **Satisfaction**: Learners' motivation strengthens when they derive a sense of satisfaction or accomplishment upon completing learning tasks. Instructors can foster opportunities for satisfaction by providing rewards, recognition, or intrinsic benefits for learners' achievements. Moreover, instruction should be designed to enable learners to apply their newly acquired skills in authentic settings as promptly as feasible.

Figure 1 illustrates Keller's ARCS model of motivation design.

Figure 1:

The ARCS Model of Motivation. Adapted from Keller (2010).



Applying the ARCS Model, instructional designers and educators aim to create a positive learning experience that keeps learners motivated, engaged, and more likely to succeed in their educational endeavors. It emphasizes the importance of considering learners' psychological needs and expectations to enhance the effectiveness of the learning process.

Summary

In Chapter 3, the study introduces the theoretical framework, centering on John Keller's ARCS Model of Motivational Design. Rooted in Tolman's and Lewin's expectancy-value theory, this model highlights four essential components - Attention, Relevance, Confidence, and Satisfaction - to enhance learner motivation and engagement in instructional settings. The chapter extensively examines each component, providing a comprehensive array of strategies instructors can adopt to cultivate a stimulating learning environment. Chapter 4 will thoroughly examine the methodology employed to investigate the research problem.

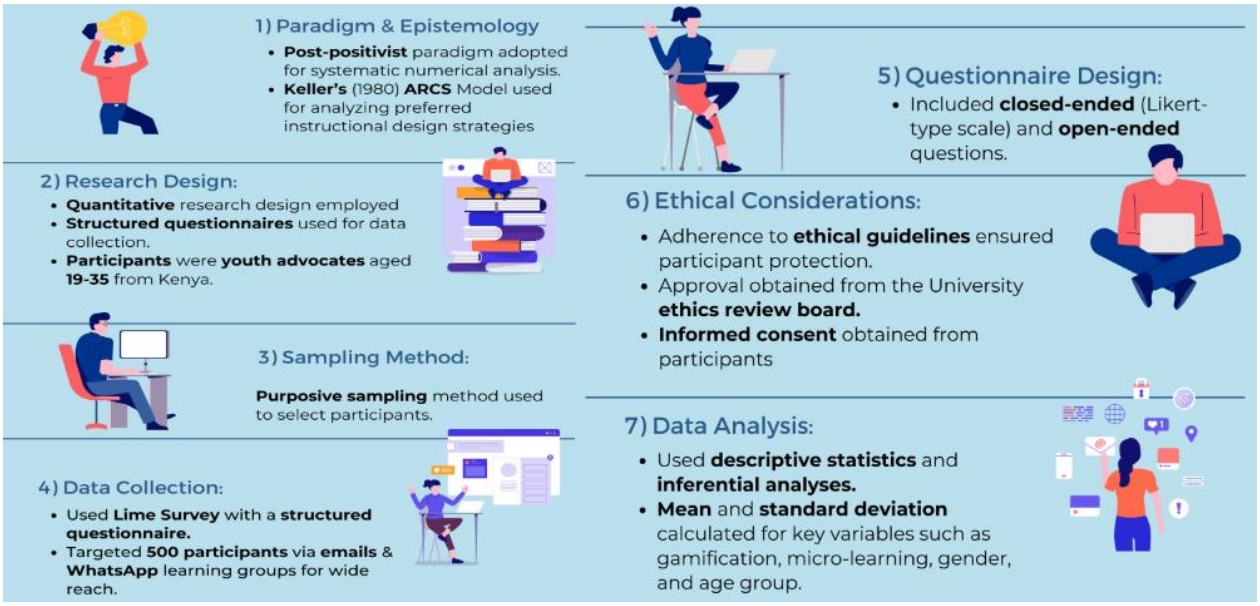
Chapter 4. Methodology

Introduction

This chapter examines the methodological aspects employed to address the research problem. The focus here is to provide a detailed description of the research design, study population, and area of study. Additionally, we outline the sampling techniques and justify the sample size. Moreover, the data collection and analysis procedures are explained, with a keen emphasis on ensuring validity and reliability. Lastly, the study addresses ethical considerations to uphold the research's integrity. This chapter offers a comprehensive understanding of the study's framework by delving into these methodological aspects. It is a crucial foundation for the subsequent analysis and findings in the following chapters. The methodology of this research is summarized in Figure 2.

Figure 2

Summary of Research Methodology



Paradigm

The research paradigm adopted for this study is post-positivism, which incorporates certain principles distinct from traditional positivism. Post-positivism acknowledges the subjectivity inherent in human interpretation while upholding the value of empirical evidence and systematic analysis. This approach acknowledges that biases may emerge as we endeavor to understand the data, influenced by our experiences, knowledge, and perspectives. In this quantitative study, the post-positivist paradigm aligns to examine instructional design strategies in the youth project in Kenya through the systematic collection and analysis of numerical data obtained from the structured questionnaire. The utilization of closed-ended questions on a 5-point Likert-type scale resonates with the post-positivist paradigm's acknowledgement of the role of interpretation while maintaining a focus on quantifiable and standardized measurements. This approach facilitates a more objective assessment of learners' perceptions and experiences, integrating empirical rigor and comprehensive understanding within the research framework.

Epistemology

The epistemological perspective underlying this study is objectivism. Objectivism posits an external reality that exists independently of human perception, and scientists can observe, measure, and understand it through scientific methods. In the context of this research on instructional design strategies, the objectivist epistemology assumes that objective and measurable factors influence learner motivation and engagement in the youth project in Kenya. By utilizing Keller's ARCS Model of Motivational Design as the theoretical framework, the study acknowledges that instructional design strategies are instrumental in shaping learners'

experiences, and these strategies can be objectively analyzed to identify their impact on learners' motivation and learning outcomes.

Role of the Researcher

The researcher's role in this study involved accessing and presenting the thoughts and feelings of the study participants. This involvement entailed a comprehensive process, including literature exploration, data interpretation, categorizing participants' responses, coding to identify key issues, similarities, and differences, and identifying emerging patterns and themes to infer meaningful insights from the data. Throughout this process, the priority was to remain faithful to the participants' voices, ensuring their perspectives were faithfully interpreted and reported in this report.

Furthermore, the researcher was responsible for safeguarding both the participants and the collected data. This commitment was demonstrated through a dedication to ethical research practices and professional conduct, adhering to university policies. Before starting the research, we communicated the mechanisms for safeguarding to the participants, and the University ethics review board approved the study, further ensuring the protection of participants' rights and privacy.

Notably, the researcher possesses an educational background and is a practicing instructional designer. The researcher consciously acknowledged and addressed their biases, subjectivities, and experiences in maintaining a reflective stance. To enhance transparency and foster a clearer understanding, the research openly explores and articulates its position. This practice allows readers to gain insights into the potential filters that could have shaped the formulation of questions, data collection, analysis, and the presentation of findings. Embracing

this perspective, the study maintained an open approach, which in turn ensured impartiality throughout the process of data collection and analysis.

Research Questions

The following were the research questions for this study:

1. What are the preferred gamification and micro-learning instructional design strategies in the Amref youth training in Kenya?

2. How does gender and age group influence user preferences in the Amref youth training for instructional design strategies in gamified and micro-learning environments?

Research Design

This study adopts a quantitative research approach to investigate instructional design strategies in a youth project in Kenya. Utilizing structured questionnaires enables the collection of numerical data, facilitating statistical analysis and objective evaluation of the research objectives. The primary research method employed is the administration of a structured questionnaire, consisting of both closed-ended and open-ended questions to gather data on the effectiveness of instructional design strategies in a youth training in Kenya. Although this study was designed as quantitative, the researcher acknowledges the potential benefits of mixed methods designs, such as the exploratory sequential design. While this study primarily focused on quantitative data collection, the researcher also incorporated qualitative data collection methods. The qualitative data collected served to complement and enhance the findings derived from quantitative analysis, enriching the overall understanding of the instructional design

strategies employed within the youth training in Kenya (Harvard Catalyst Community Engagement Program, n.d.).

Participants

In this study, the participants were youth advocates and young adults from the youth project in Kenya. The researcher employed a purposive sampling method to identify the study subjects. Purposive sampling enabled the researcher to deliberately select individuals who met the study criteria, contrasting with a convenience sample where data is collected from whoever happens to be available.

To ensure a diverse representation, we drew the participants from both urban and rural contexts in Kenya. The main target group consisted of youth aged between 18-35 years old. The decision to focus on youth is grounded in the understanding that investing in their education and training is vital, as they represent the nation's future and are a valuable resource worth nurturing.

During the study, the researcher observed that a formal advocacy training curriculum had yet to be accredited by the Ministry of Education in Kenya. This observation further highlights the significance of structuring youth training and formalizing youth advocacy training in the country, as this initiative can contribute significantly to youth education and empowerment.

The study involved a heterogeneous group of subjects, reflecting the diversity of the catchment areas in terms of language, including vernacular languages, Kiswahili, English, as well as other indigenous languages such as Kikuyu, Luo, Kamba, and Luhya, Kalenjin, Meru, Turkana, and Maasai, commonly spoken across various regions of Kenya, to ensure comprehensive representation. Additionally, participants varied in their motivation for learning.

Participants fell within the age range of 19 to 35 years, ensuring a representative sample encompassing various societal settings.

By selecting a diverse group of participants, the researcher aimed to gain comprehensive insights into the learning experiences of youth and young adults. Including individuals from both urban and rural contexts, representing different languages and motivations, enhances the relevance and applicability of the study findings, ultimately contributing to a better understanding of youth training in Kenya and beyond.

Sampling

The sampling methodology employed in this study was purposive sampling, which involved purposefully selecting participants who met specific criteria. The target population included youth and young adults aged between 19 and 35 who had completed the Amref advocacy youth project. Participants came from both urban and rural areas. Five hundred youth advocates made up the final sample, which was chosen based on the project's secondary data. While purposive sampling allowed us to focus on individuals with relevant experiences, we recognize the potential for sampling bias in the selection process. Considering this limitation, the researcher took measures to mitigate bias and will address it in interpreting our findings.

Ethical Considerations

The study rigorously upheld ethical considerations to ensure the protection and privacy of the research subjects. The researcher adhered to established guidelines to safeguard anonymity and confidentiality, including completing the Tri-Council's TCPS2: CORE research ethics training. Institutional research approval was also diligently sought before conducting the

research, despite the study population being based in Kenya, while the approval process took place in Canada.

All participants provided their informed consent before participating and were all made explicitly aware that their involvement was voluntary. Learners had the autonomy to choose to participate without facing any negative consequences. Additionally, the researcher sought permission from advocacy groups/organizations to which most participants were affiliated. The confidentiality of the data was strictly maintained, with access limited to only the primary researcher and the supervisor.

Participants were also aware that the data would contribute to designing future youth-focused digital learning programs, fostering openness and potential positive effects on the participants and the community. The survey was conducted via LimeSurvey, which required a password for access, to ensure secure data collection. Following completion of the study, the data will be handled per institutional research standards and properly deleted to protect participant privacy.

By adhering to these ethical considerations, the study demonstrated a strong commitment to research integrity and respect for the rights and well-being of the research subjects. The rigorous protection of anonymity, confidentiality, and voluntary participation reflects the ethical responsibility and professionalism demonstrated throughout the research process.

Validity, Authenticity, Credibility and Rigor

Ensuring rigor in research remains an ongoing challenge even in the 21st century. Rigor is synonymous with precision, exactness, and carefulness in conducting the study. To bolster the rigor of this research, the instruments used underwent validation through expert opinions and

pilot testing. Reliability was addressed, following established guidelines to analyze the data without discrepancies. The researcher cross-checked the data and results for accuracy and correctness. Recognizing the potential impact of subjectivity on data interpretation, the researcher took necessary precautions to minimize biases and enhance objectivity.

The researcher thoughtfully established preliminary steps, which included making initial contact, gaining entry to the subjects, negotiating consent, building and sustaining trust, and identifying the appropriate participants. This process was to maintain rigor throughout the process. The researcher continually reassessed and reiterated these steps to ensure that the research maintained a high standard of quality and reliability.

While research findings can sometimes be met with skepticism in the scientific community (Cypress, 2017), the commitment to rigor demonstrated in this study aims to bolster the credibility and trustworthiness of the research outcomes. This study diligently follows validation procedures, adheres to rigorous data analysis methods, and addresses potential biases to contribute valuable and credible insights to the field.

Results

Data Collection

The researcher collected data by distributing structured questionnaires to the participants in the youth project. Leveraging LimeSurvey, a well-known online survey software, the surveys were distributed through emails and WhatsApp learning groups to the selected sample, ensuring efficient and reliable data collection (Lewis, 2015). Online surveys offered numerous advantages, including a wider reach and the convenience of respondents providing credible and

valuable data. Participants could complete the survey on various devices, including desktops, tablets, or mobile phones, enhancing accessibility and response rates.

The online survey format comprised a combination of closed-ended and open-ended questions, offering a comprehensive understanding of the subjects' opinions. This approach allowed the researcher to gain insights into quantitative and qualitative data, facilitating a more nuanced analysis of the participants' perspectives. Furthermore, online surveys proved to be a cost-effective means of data collection, making them particularly suitable for this study.

In addition to the online survey, the research utilized secondary data sources. Secondary data, previously collected, structured, and analyzed by other researchers, included the training curriculum, and learning management system. The integration of secondary data complemented the primary survey data, providing valuable context and supporting the analysis of youth learners' instructional design preferences in the Amref youth training program.

The data obtained from this research served two essential purposes: First, it enabled the identification of the most preferred set of instructional design strategies for youth learners, informing the principles guiding youth-led programs at Amref. Second, the findings generated valuable recommendations for instructional designers to enhance youth learning experiences in such programs. This study sought to make significant contributions to youth education and instructional design practices by leveraging both primary and secondary data sources.

Instrumentation

Instrumentation was a critical aspect of the data-collection process, encompassing the tools and methods utilized by investigators to measure variables of interest. It involved various

stages, including instrument design, selection, construction, and assessment, while considering the conditions under which the designated instruments were administered (Salkind, 2010). In this study, we employed open-ended questionnaires as the primary instruments for data collection. The questionnaire included two types of questions:

a. Closed-ended questions: Designed on a 5-point Likert-type scale, these questions gave students options to indicate their responses to specific instructional design elements.
b. Open-ended questions: Students were encouraged to elaborate and provide insights in response to the closed-ended items. These sections aim to capture qualitative data, allowing participants to express their thoughts more freely and in-depth.

During the data collection phase, a sample of 500 trainees from both urban and rural contexts in Kenya received an initial invitation via email to participate in the survey. However, the response rate through email could have been more favorable than expected, particularly considering the context of ongoing elections in Kenya at that time. Alternative methods were put in place to solve this problem and increase participation. Learners were sent additional survey requests through existing WhatsApp learning groups, significantly boosting the response rate. Through these instruments, participants were allowed to reflect on and identify the instructional design strategies that proved most effective for them.

Data Analysis

The survey data was filtered through the researcher's expertise and knowledge, enabling the derivation of meaningful insights from the dataset (Creswell, 2013). The data analysis process in this thesis involved a manual data cleaning procedure to ensure the accuracy and integrity of the obtained data. The researcher imported the data from LimeSurvey into Microsoft Excel, checked

the data structure, and managed missing values by replacing them with a designated number and removing unnecessary columns and rows. Data consistency checks and data standardization both preserved consistency and dealt with any illogical results. Thorough validation and cross-checking were carried out using tables and bar charts, enhancing data integrity. The entire data cleaning process was well-documented, ensuring transparency and reproducibility.

Quantitative analysis of survey data. Following data cleaning, the researcher analyzed the collected data from the closed-ended questions using appropriate statistical techniques such as descriptive statistics and inferential analyses. The quantitative data measured response frequency and distribution, providing numerical insights into learners' perceptions of instructional design strategies in the youth project in Kenya. Further, the researcher calculated the mean and standard deviation for key variables, such as gamification, micro-learning, gender, and age groups. The findings were summarized in tables and bar graphs for visual comparisons across diverse groups. The interpretation of findings focused on the central tendency and variability of the data, offering valuable insights into the dataset. Data segmentation allowed for subgroup analysis based on demographics.

Qualitative analysis of survey data. The open-ended responses were subjected to thematic analysis to identify recurring patterns and themes in participants' elaborations and insights. The qualitative data provided a deeper understanding of learners' perspectives and experiences with instructional design strategies in the youth project.

While automated data cleaning methods can be more efficient for large datasets, the manual data cleaning process described above proved effective for the current research, given the

dataset's size and the need for precise inspection and corrections. This approach ensured the dataset's reliability and paved the way for meaningful data analysis and interpretation.

Assumptions

This research study was based on several key assumptions that underpin the validity and interpretation of the findings.

- The assumption of representation: The study assumed that the sample of 500 trainees was representative of the larger population of learners in the Amref youth training in Kenya. The response rate of 47% was considered significant, indicating that the sample size was large enough to draw meaningful conclusions about the population. However, it was essential to recognize that the response rate and the sample size might have introduced some bias, and not all learners were adequately represented in the study.
- The assumption of data accuracy: The study assumed that the data collected from the online survey was accurate and reliable. The data cleaning process was expected to have rectified any errors or inconsistencies, ensuring the quality of the data for analysis. However, some level of response bias or missing data might have existed, which could have impacted the validity of the findings.
- The assumption of willingness to respond: The study assumed that the respondents were willing to engage with the survey, through email or WhatsApp learning groups. The high response rate of 47% suggested a willingness to participate, but those who responded might have had distinct characteristics or interests compared to non-respondents.
- The assumption of learners' self-reporting: The study relied on self-reporting through surveys, which assumed that learners accurately and honestly reported their preferences.

However, self-reporting might have been influenced by social desirability bias, where respondents provided answers, they believed were socially acceptable.

Limitations

The study acknowledges several limitations that may impact the interpretation and generalizability of the findings. Firstly, the study's primary data collection method is through an online survey, which may exclude individuals with limited internet access or those unfamiliar with online surveys, resulting in a biased sample.

Secondly, the study was conducted in a single setting, focusing on the Amref youth training in Kenya. While this allows for in-depth analysis within this specific context, it may limit the generalizability of the findings to other educational settings or regions beyond East Africa.

Lastly, there is an imbalance in gender representation within the sample, with more male respondents (57.61%) than female respondents (40.22%) as illustrated in Table 2. This gender disparity may hinder the ability to draw comprehensive conclusions about gender-specific preferences and perceptions regarding instructional design strategies.

Delimitations

In addition to the acknowledged limitations, the study also specifies certain delimitations that outline the scope of the research. The study categorizes participants into specific age groups ranging from 19 to 40, allowing for targeted analysis within these cohorts. However, this means that insights from participants outside this age range are not included.

Furthermore, the study is context-specific, concentrating on Kenya's Amref youth training program. This specificity acknowledges that this training program may have unique characteristics and constraints not applicable to other training programs in different contexts.

Using an online survey as the primary data collection method is efficient, but it may not capture the depth of information that could be obtained through more qualitative research methods like interviews or focus groups.

Although the study offers some insights into the relationship between gender and instructional design preferences, the analysis is limited to mean ratings and standard deviations. A more comprehensive gender analysis utilizing qualitative methods could provide a deeper understanding of the underlying reasons for any observed differences.

Finally, the study focuses on specific instructional design strategies related to gamification and micro-learning, leaving out an exploration of other instructional design approaches that may also influence learning outcomes.

Summary

This chapter explores the methodological aspects used to address the research problem, providing a detailed description of the research design, study population, and study area. The sampling technique employed was purposive sampling, targeting youth and young adults aged 19 to 35 who completed the Amref advocacy youth project from rural and urban settings. The researcher justified the sample size of 500 based on available secondary data. Ethical considerations were strictly adhered to, ensuring the protection of participants' rights and privacy.

The researcher's role involved accessing and presenting the participants' thoughts and feelings, while safeguarding their rights and data. The research design followed a quantitative approach, using structured questionnaires with closed and open-ended questions.

Data collection included online surveys distributed through LimeSurvey and the utilization of secondary data. The instruments underwent thorough validation, and the researcher ensured rigor by maintaining precision and objectivity throughout the process. Data analysis involved manual data cleaning in Excel, calculating mean and standard deviation, and presenting the results in tables and bar graphs. The study acknowledged assumptions and limitations, including the possibility of biases within the sample and potential variations in data accuracy. Delimitations outlined the scope of the study, focusing on specific age groups, the context of Amref youth training in Kenya, and certain instructional design strategies.

The research is based on key assumptions that influence the validity and interpretation of findings. It assumes that the sample represents the broader population, assumes data accuracy after cleaning, assumes respondents' willingness to engage, and relies on learners' self-reporting. Acknowledged limitations include online survey bias, single-setting focus, and gender imbalance. Delimitations specify age group categorization, context specificity, and limited qualitative depth. The study offers insights into gender preferences but lacks in-depth gender analysis. Furthermore, it explores gamification and micro-learning strategies, omitting other instructional design approaches.

This chapter provides a comprehensive understanding of the study's framework, setting the foundation for subsequent analysis and findings in the following chapters. The methodological approach ensures data reliability and enables meaningful interpretation of the results, contributing valuable insights to youth education and instructional design practices.

Chapter 5. Results

Introduction

This chapter presents research findings about population demographics, gamification, and micro-learning in the Amref youth training in Kenya. The researcher begins by introducing the research questions explored in the study, providing context for understanding how the results were organized. The study aimed to assess the effectiveness of motivational instructional design strategies preferred by learners in the Amref youth advocacy course in Kenya. This evaluation was based on participant feedback on the course design. The questionnaire included ten questions covering demographics, gamification, micro-learning, and additional feedback as shown in Table 1.

Table 1

Summary of Research Questionnaire

Demographics: • Age group and gender	**Gamification:** • Participant perception of gamification methods Likert scale. • Comments on gamification.
Micro-learning: • Participant perception of micro-learning strategies on a Likert scale. • Comments on micro-learning.	**Additional feedback:** • Suggestions for course improvement. • Rating of overall course design. • Additional comments on course elements affecting learning.

First the Chapter starts by highlighting a significant achievement of a 47% response rate for the online survey, making it a representative sample of the target population. The high response rate ensures robust conclusions and enhances the external validity of the research. The Chapter then delves into the findings related to gamification, revealing which design strategies are highly rated and which ones may need improvement. Additionally, the Chapter explores the relationship between gamification and gender, indicating slight preference differences between males and females.

The analysis also covers micro-learning data, identifying the well-received design strategies across different age groups. It highlights the importance of considering learners' diverse preferences and needs when designing youth-friendly training initiatives. The chapter concludes by emphasizing the significance of understanding how gender and age can shape user experiences in gamified environments and micro-learning, informing future instructional design considerations and strategies. The research findings provide valuable insights for educators and course developers seeking to personalize learning content and improve the effectiveness of youth-friendly training programs.

Population Demographics

The analysis of the participants' demographics is important to gaining insights into the characteristics of the individuals engaged in the Amref Youth Course. Table 1 provides an overview of the questionnaire demographics, offering a snapshot of the participants' age groups, gender distribution, targeted respondents, and the response rate. Tables 2 and Figures 3 and 4 include the demographics from the research questionnaire.

Table 2

Questionnaire Demographics

1tem	Questionnaire
Targeted Respondents	500
Actual Respondents	236
Email Responses	73
WhatsApp Learning Groups	163
Clean Data	184
Response Rate	47.2%
Female	40.22%
Male	57.61%
Others	2.17%
Clean Data - Gamification	174
Male	102
Female	71
Clean Data - Micro-Learning	161
Male	96
Female	65

A response rate of 47% for an online survey in this research is considered a significant achievement compared to other online surveys (Dillman, Smyth, & Christian, 2014). Despite the common perception that higher response rates are always better, a 47% response rate is notably above the average for online surveys, making it a representative sample of the target population (Fan & Yan, 2010). With nearly half of the participants engaging with the survey, we can draw robust and statistically meaningful conclusions from the collected data. The high response rate

also ensures that our findings are more likely to be generalizable to the larger population, thus enhancing the external validity of our research (Sheehan, 2001). Furthermore, the substantial number of respondents fosters greater statistical power, enabling us to detect significant relationships and associations within the data (Bethlehem, Biffignandi, & Chasiotis, 2009).

Overall, the 47% response rate demonstrates the willingness and interest of our participants, underscoring the relevance and importance of our research to the target population (Bethlehem, Cobben, & Schouten, 2011). This was achieved through multiple modes of contact by utilizing multiple channels such as email and social media to increase the visibility and reach a wider audience (Dillman, Smyth, & Christian, 2014). The researcher reached out directly to the participants through their emails. Friendly and non-intrusive reminder emails were sent out as the deadline approached. Additionally, the researcher contacted the respondents through existing WhatsApp learning groups. This was enabled by the training coordinators for the Amref youth training in Kenya. The researcher also ensured that the survey was mobile-responsive and accessible on various devices to accommodate participants who primarily access the internet through mobile devices such as smartphones or tablets (Couper, Traugott, & Lamias, 2001).

This section explores the respondents' age distribution, as shown in Figure 2, and their gender distribution, illustrated in Figure 3. The research questions in the questionnaire focused on determining participants' age groups and genders, with specific categories ranging from 18 to 35 years for age and options for male, female, or other for gender. Figure 3 and 4 is a summary of the age and gender distribution of the participants.

Figure 3

Age Distribution of Participants

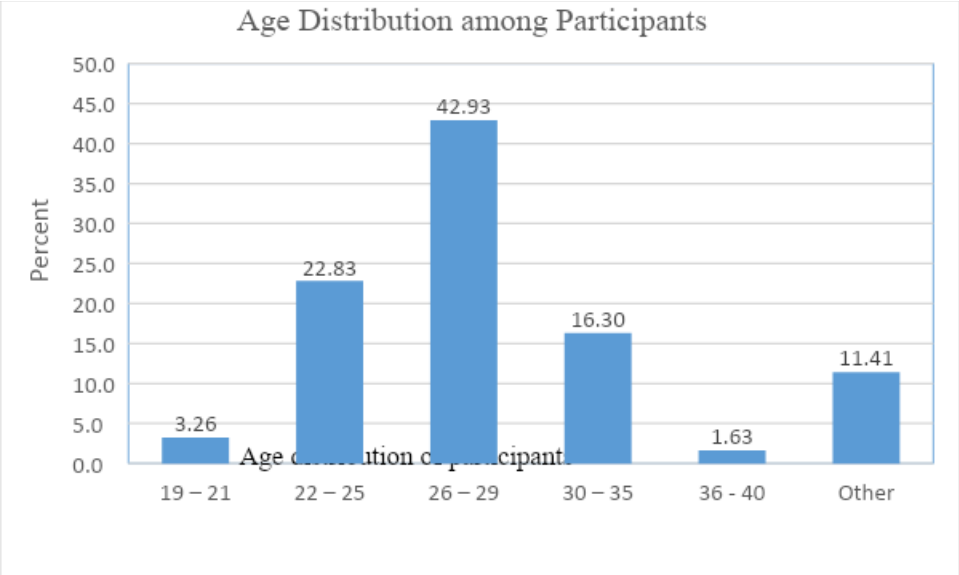
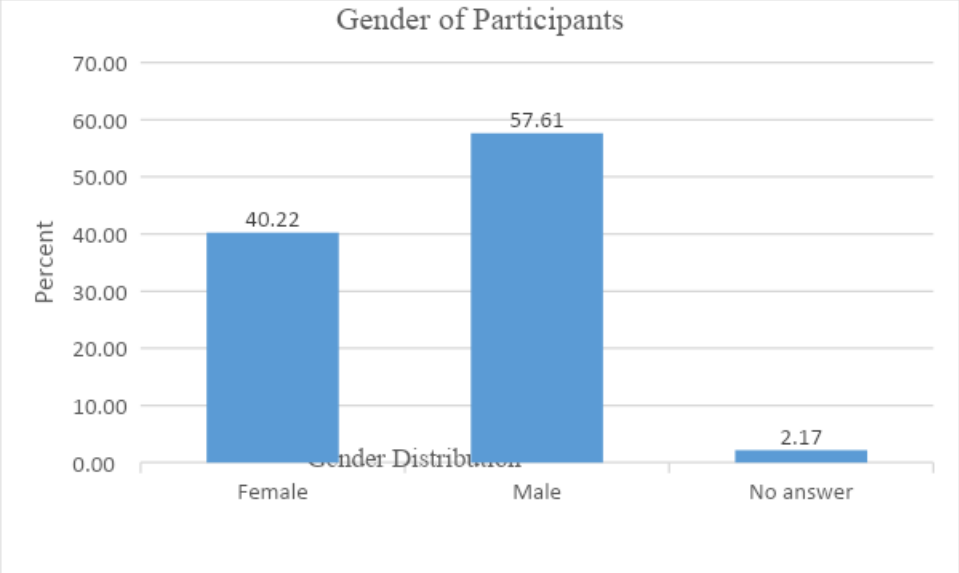


Figure 4

Gender Distribution of Participants



Gamification

Participants in the Amref Youth Course were asked to reflect on the extent to which specific gamification elements contributed to an enjoyable learning experience. The scale ranged from 1 to 5, with 1 indicating “A Small Extent” and 5 indicating “To a Great Extent.”

Participants were invited to share their insights on various gamification aspects, providing valuable qualitative data. The following aspects were explored:

- Badges on module completion - recognition for completing individual course modules.
- Freedom to navigate - ability to freely explore different sections of the course.
- Unlocking content - progress-based unlocking of subsequent modules.
- Certificate of completion - acknowledgment upon finishing the entire course.
- Progress tracking - progress bar - visual representation of course progression.
- Chat - discussion forums - interactive platforms for participant discussions.
- End of module assessment - evaluation at the conclusion of each module.
- Unlimited attempts in quizzes - freedom to retake end-of-module quizzes.

Participants were also asked to provide any additional comments on their overall experience with gamification. The subsequent presentation captures the participants' perceptions and preferences regarding these gamification elements, shedding light on the impact of these strategies on the learning journey. The summarized findings are presented in Table 3, with visual representation provided in Figure 5 for a comprehensive overview.

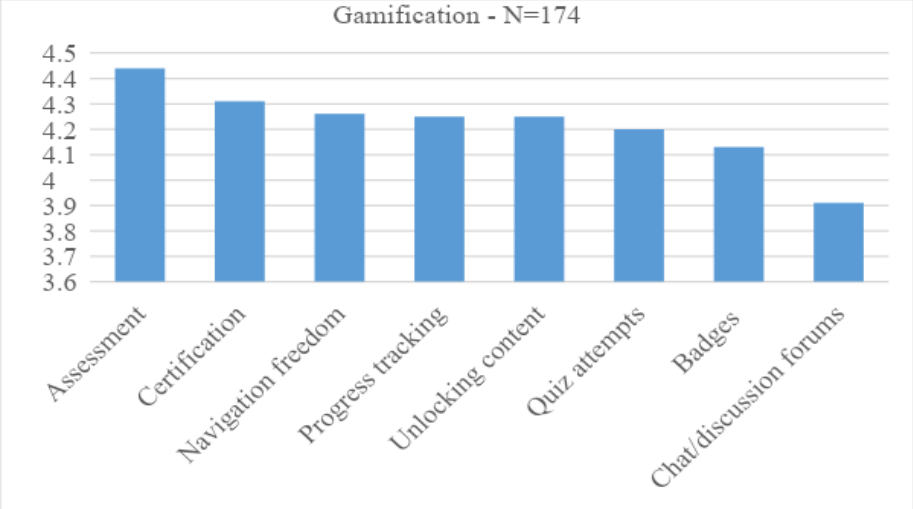
Table 3

Summary of Gamification

Gamification (N=174)		
Instructional Design Strategy	**Mean**	**SD**
End of module assessment	4.44	0.78
Certificate of Completion	4.31	1.13
Navigation Freedom	4.26	0.92
Progress tracking	4.25	0.88
Unlocking Content	4.25	0.89
Unlimited attempts to end of module quiz	4.20	0.95
Badges on Module Completion	4.13	1.03
Chat - Discussion Forums	3.91	0.97

Figure 5

Summary of Gamification



"End of module assessment (M=4.4, SD=0.78)," "certificate of completion (M=4.31, SD=1.13)," and "navigation freedom (M=4.26)," have the highest mean ratings, indicating that users perceive these features positively.

The design strategy "chat/discussion forums (M=3.91, SD=0.97)," has a lower mean rating than the other strategies, suggesting that users might not find this gamification feature as favorable.

The mean ratings for "progress tracking (M=4.25, SD=0.88)," "unlocking content (M=4.25, SD=0.89)," and "unlimited attempts to end of module quiz (M=4.20, SD=00.95)," are remarkably close to each other (within a range of 0.05). These ratings suggest that users perceive these design strategies similarly and that there might not be significant differences in their preferences for these features.

The standard deviations for each design strategy indicate the variability or dispersion of ratings within each category. Higher standard deviations suggest a wider range of opinions among users for that design strategy. In this case, "certificate of completion (SD=1.13)," and "chat/discussion forums (SD=0.97)," have higher standard deviations, indicating greater variability in user perceptions.

The design strategy "badges on module completion" has a relatively lower mean rating (M=4.13) and a higher standard deviation (SD=1.03) than other strategies. This rating indicates that while some users find the badge feature valuable, others might negatively perceive it, resulting in a broader range of ratings.

Gamification and Gender

Research findings have shown that males and females have different learning preferences (Stark & Gray, 2018). Analyzing gamification and gender would provide insights that can assist educators in personalizing learning content. Additionally, this data would uncover valuable insights into the different satisfaction patterns shown by male and female respondents. The researcher aims to identify trends, potential variations, and the influence of gender on preference for design strategies. These patterns will help us better understand how gender can shape user experiences in gamified environments and inform future instructional design considerations and strategies. Table 4 and Figure 6 summarize the gamification and gender data.

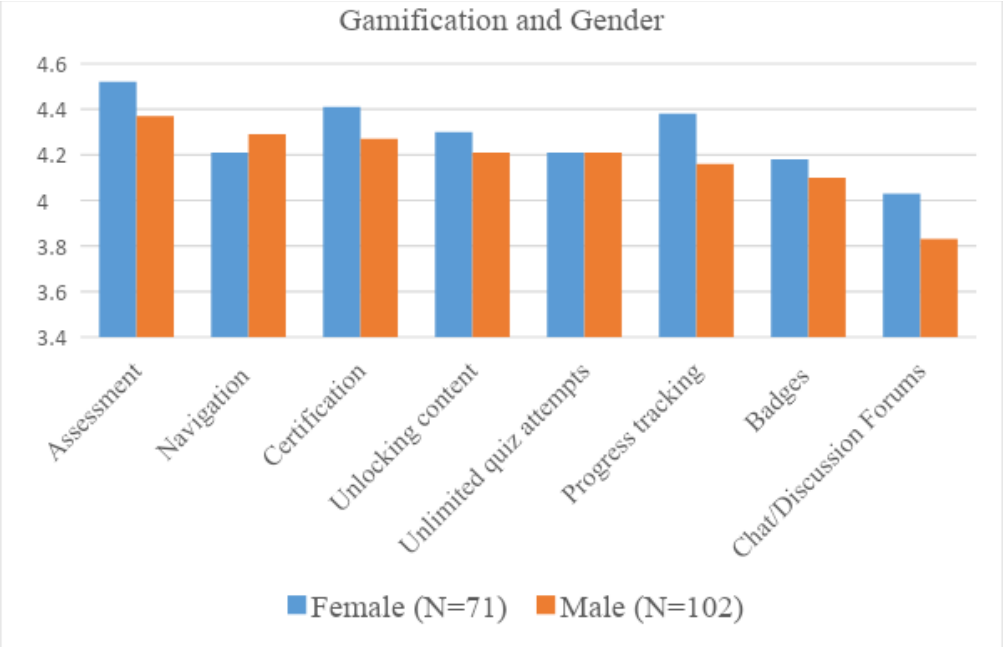
Table 4

Gamification – Gender

Instructional Design Strategy	**Male (N=102)**	**Female (N=71)**
End of module assessment	Mean 4.37 (SD=0.86)	Mean 4.52 (SD=0.65)
Navigation Freedom	Mean 4.29 (SD=0.92)	Mean 4.21 (SD=0.94)
Certificate of Completion	Mean 4.27 (SD=1.22)	Mean 4.41 (SD=0.92)
Unlocking Content	Mean 4.21 (SD=0.88)	Mean 4.30 (SD=0.92)
Unlimited attempts to end of module quiz	Mean 4.21 (SD=1.02)	Mean 4.21 (SD=0.84)
Progress tracking	Mean 4.16 (SD=0.93)	Mean 4.38 (SD=0.78)
Badges on Module Completion	Mean 4.10 (SD=1.04)	Mean 4.18 (SD=1.03)
Chat - Discussion Forums	Mean 3.83 (SD=1.01)	Mean 4.03 (SD=0.91)

Figure 6

Gamification – Gender



The mean ratings for the "end of module assessment" design strategy are relatively high for males (M=4.37) and females (M=4.52), indicating a positive perception among both groups. The standard deviation values suggest that females (SD=0.65) have less variability in their ratings than males (SD=0.86).

Both males (M=4.29) and females (M=4.21) have positive mean ratings for the "navigation freedom" design strategy. The standard deviation values indicate slightly more variability among males (SD=0.92) than females (SD=0.94).

Males (M=4.27) and females (M=4.41) positively perceive the "certificate of completion" design strategy, although females have a slightly higher mean rating. The standard deviation values suggest that males (SD=1.22) exhibit more variability in their ratings than females (SD=0.92).

Both males (M=4.21) and females (M=4.30) positively perceive the “unlocking content” design strategy per the mean ratings. The standard deviation values, males (SD=0.88), and females (SD=0.92) indicate similar levels of variability in ratings for both groups.

Both males (M=4.21) and females (M=4.21) have similar mean ratings for the “unlimited attempts to end of module quiz” design strategy. The standard deviation values suggest that females (SD=0.84) exhibit less variability in their ratings than males (SD=1.02).

Both males (M=4.16) and females (M=4.38) have positive mean ratings for the “progress tracking” design strategy, with females showing higher satisfaction. The standard deviation values indicate slightly more variability among males (SD=0.93) than females (SD=0.78).

Badges on module completion have males (M=4.10) and females (M=4.18) express positive perceptions of the design strategy, with females having a slightly higher mean rating. The standard deviation values suggest that males (SD=1.04) exhibit more variability in their ratings than females (SD=1.03).

Chat/discussion forums have males (M=3.83) and females (M=4.03) with a lower mean rating, although females rate it slightly higher. This finding aligns with research on communication patterns, indicating that females tend to engage in more frequent chatting compared to males (Kapidzic & Herring, 2011). The standard deviation values indicate that males (SD=1.01) have more variability in their ratings than females (SD=0.91).

Overall, the patterns suggest some similarities in the perceptions of design strategies between males and females, but there are also notable differences. Females have slightly higher mean ratings and lower variability in their ratings compared to males. As a result, females tend to express slightly higher satisfaction levels than males. The ‘end of module assessment’ and

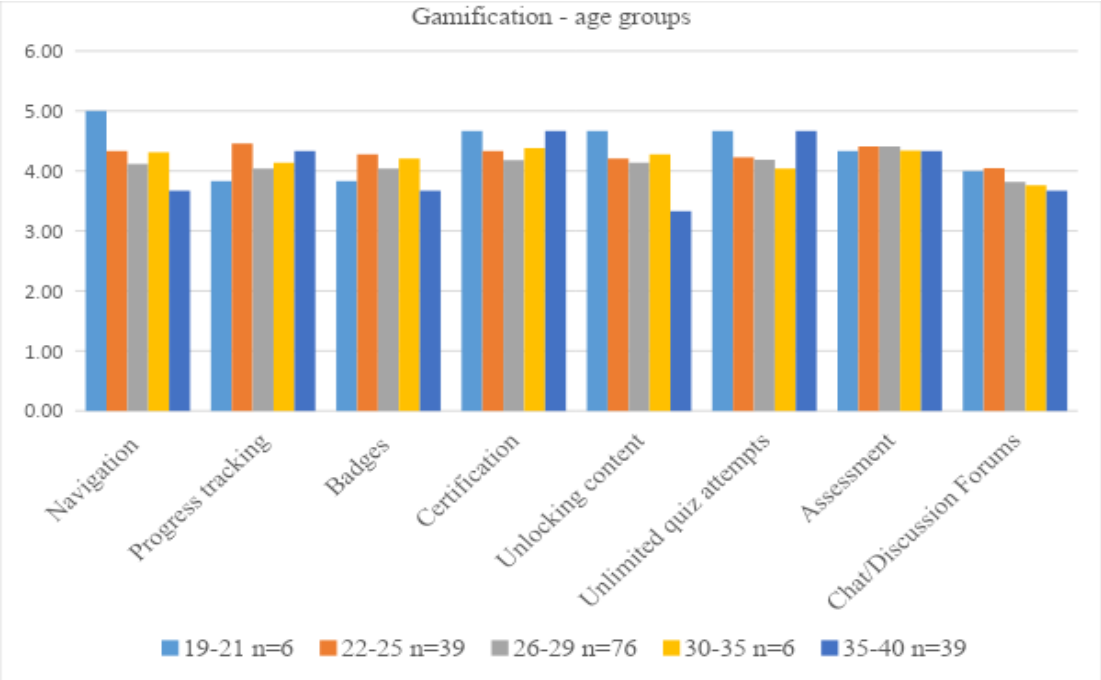
'certificate of completion' design strategies are particularly well-received among both males and females. The "chat/discussion forums" design strategy receives lower mean ratings from both genders, but females rate it slightly higher than males.

Gamification and Age Groups

This section presents data on gamification and age groups. The data categories are as follows: (19 to 21), (22 to 25), (26 to 29), (30 to 35), and (36 to 40). This classification aligns with socio-developmental milestones, would enable targeted interventions, ease of statistical analysis, and would provide relevance to social and cultural contexts. The age groupings would enable the researcher to gain valuable insights and map out instructional design strategies that cater to young adults' unique characteristics and needs at different stages of emerging adulthood. Figure 7 shows a summary of gamification and age groups.

Figure 7

Age Group



The data for the age group (19 – 20) shows the following patterns:

- "Certificate of completion" received a mean rating of (M=5.00, SD= 0.00), indicating high satisfaction among the respondents in this age group.
- "Navigation freedom (M=4.67, SD=0.52)," progress tracking (M=4.67, SD=0.82), and "unlocking content (M=4.67, SD=0.82)" received relatively high mean ratings, suggesting a positive response to these design strategies.
- "End of module assessment (M=4.33, SD=0.82)," and "chat/discussion forums (M=4.00, SD=0.89)" received mean ratings ranging from 4.00 to 4.33, indicating overall satisfaction with these strategies.
- "Badges on module completion (M=3.83, SD=1.47)" and "unlimited attempts to end the module quiz (M=3.83, SD=0.98)" received slightly lower mean ratings, suggesting a somewhat lower level of satisfaction.

The age group (22 to 25) had the following observations from the data analyzed:

- "End of module assessment (M=4.41, SD= 0.68)," "certificate of completion (M=4.33, SD= 1.01)," and "navigation freedom (M=4.33, SD= 0.90)," received mean ratings ranging from 4.33 to 4.41, indicating a consistent level of satisfaction in this age group.
- "Unlocking content (M=4.21, SD=0.95)," "progress tracking (M=4.46, SD=0.76)," and "unlimited attempts to end of module quiz (M=4.23, SD=0.93)," received mean ratings ranging from 4.21 to 4.46, indicating a relatively positive response.
- "Badges on module completion (M=4.28, SD=1.00)" and "chat/discussion Forums (M=4.05, SD= 0.94)" received moderate mean ratings, indicating a moderate level of satisfaction.

The patterns for the age group 26 to 29 are summarized as follows:

- “End of module assessment (M=4.41, SD=0.84),” “certificate of completion (M=4.18, SD=1.20),” and “navigation freedom (M=4.12, SD=1.06),” received mean ratings ranging from 4.12 to 4.41, indicating a consistent level of satisfaction.
- “Unlocking Content (M=4.14, SD=0.98),” “progress tracking (M=4.04, SD=0.96),” and “unlimited attempts to end of module quiz (M=4.19, SD=1.69)” received mean ratings ranging from 4.04 to 4.19, indicating a generally positive response.
- “Badges on module completion (M=4.04, SD=1.05)” and “chat/discussion forums (M=3.82, SD=0.99)” received mean ratings of 4.04 and 3.82, respectively, suggesting a slightly lower level of satisfaction.

Age groups 30 to 35 had the following patterns:

- Design strategies such as “end of module assessment (M=4.34, SD= 0.94),” “certificate of completion (M=4.38, SD=1.21),” “navigation freedom (M=4.31, SD= 0.81),” “unlocking content (M=4.28, SD= 0.75),” and “progress tracking (M=4.14, SD= 0.92),” received mean ratings ranging from 4.14 to 4.38, indicating a generally positive level of satisfaction among the respondents in this age group.
- The design strategy “unlimited attempts to end of module quiz” received a mean rating of (M=4.04, SD=1.13), suggesting a slightly lower level of satisfaction than other design strategies.
- “Badges on module completion” and “chat/discussion forums” received lower mean ratings, with scores of (M=4.21, SD=0.98) and (M=3.76, SD=1.12), respectively.

For the age groups 36 to 40:

- The sample size for this age group is small, with only three respondents for each design strategy. The small sample may limit the generalizability of the findings.
- However, we can observe that the design strategies "certificate of completion (M=4.67, SD= 0.58)," "progress tracking (M=4.33, SD= 0.58)," and "unlimited attempts to end of module quiz (M=4.67, SD= 0.58)," received high mean ratings, suggesting a positive level of satisfaction among the respondents in this age group.
- "Navigation freedom (M=3.67, SD=1.53)," "unlocking content (M=3.33, SD=0.58)," "badges on module completion (M=3.67, SD=1.53)," and "chat/discussion forums (M=3.67, SD= 0.58)," received lower mean ratings, indicating a relatively lower level of satisfaction compared to other design strategies.

The data suggests that the "certificate of completion" design strategy generally received high satisfaction ratings across different age groups. "Navigation freedom" and "unlocking content" also received positive responses. However, "badges on module completion" and "chat/discussion forums" received slightly lower satisfaction ratings across most age groups with more diverse opinions. It is important to note that the sample size for the youngest (6) age group, 19-21, and the oldest (3) age group, 36-40 is limited, which may affect the generalizability of the findings.

Additionally, there is an overall positive satisfaction across various design choices as the respondents get older. The various mean ratings and standard deviations suggest differences and varying degrees of satisfaction among various age groups.

Micro-learning

The second part of the research data was on micro-learning. Micro-learning is the process of packaging training content into small pieces of information that can be learned at a given time. The effectiveness of instructional design methodologies in training programs is a critical aspect that directly influences the learning experiences of participants. In the exploration of the Amref youth training, the investigation centered on micro-learning, a pedagogical approach involving the delivery of training content in small, focused units. The objective was to discern the preferred micro-learning strategies identified by participants and to understand how these strategies facilitated effective learning, contributing to the achievement of course objectives. Participants were asked to evaluate a range of micro-learning strategies on a scale from 1 to 5, where 1 indicated “To a Very Small Extent” and 5 represented “To a Very Large Extent.” The identified micro-learning strategies include short video clips, content breakdown into modules, case studies, infographics, course orientation webinars, animations, podcasts (audio recording), dos and don’ts, role-play, images, taking notes, checklists, glossaries, scenario-based exercises, job aids, worked examples (tools and templates).

In addition to numerical ratings, participants were asked to provide any additional comments or insights they might have regarding their experiences with the micro-learning strategies in the course. This approach allowed us to gather feedback and understand not only the perceived effectiveness but also the qualitative aspects of each strategy as perceived by the learners.

The following section presents the micro-learning data, highlighting the evidence supporting its effectiveness in the Amref youth project in Kenya. The results herein reveal the emerging patterns gathered from the data analysis. Table 5 provides a summary of the key

statistics, presenting the mean and standard deviation of the various micro-learning strategies in the Amref training.

Table 5

Summary of Micro-learning

Micro-learning (N=162)		
Design Strategy	**Mean**	**SD**
Content Breakdown into modules	4.55	0.73
Short video clips	4.50	0.73
Images/Graphics	4.47	0.72
Checklists	4.38	0.84
Case studies	4.33	0.86
Tools and Templates	4.31	0.82
Take notes	4.31	0.89
Animations	4.27	1.00
Infographics	4.25	0.85
Role-play	4.25	0.91
Scenario-based exercises	4.24	0.93
Podcasts	4.24	0.95
Glossaries	4.20	0.86
Dos and don’ts	4.17	0.91
Course orientation webinars	4.16	0.93
Job aids	4.12	0.96

Based on micro-learning data, most design strategies have relatively high mean ratings above 4.0, indicating that the respondents receive them relatively well. Content Breakdown into modules (M=4.55, SD=0.73), short video clips (M=4.50, SD=0.73), and Images/Graphics (M=4.77, SD=0.72) have the highest mean ratings, indicating that learners find these design strategies to be effective. Job aids (M=4.12, SD=0.96) and course orientation webinars (M=4.12, SD=0.93) have the lowest mean ratings, suggesting that these design strategies may be less effective or less preferred by the learners.

Most design strategies' standard deviations are relatively close, ranging from SD=0.72 to SD=1.00. This indicates no significant variation in the ratings for different micro-learning design strategies, suggesting a general consistency in the perception of their effectiveness.

Animations (M=4.27, SD=1.00), infographics (M=4.25, SD=0.85), role-play (M=4.25, SD=0.91), scenario-based exercises (M=4.24, SD=0.93), and podcasts (M=4.24, SD=0.95) have mean ratings close to the top-rated strategies but slightly lower, indicating that they are also perceived as effective but perhaps not as highly as the top-rated ones.

Glossaries (M=4.20, SD=0.86), dos and don'ts (M=4.17, SD=0.91), webinars (M=4.16, SD=0.93), and job aids (M=4.12, SD=0.96) have mean ratings slightly lower than the average, suggesting that they may be perceived as less effective or less preferred by the learners compared to the top-rated strategies.

Several design strategies have similar mean ratings, such as "infographics (M=4.25)," "images/graphics (M=4.25)," "role play (M=4.25)," "podcasts (M=4.24)," and "scenario-based exercises (M=4.38)." These micro-learning strategies have mean ratings of (M=4.24) to (M=4.25), indicating that they are perceived similarly in terms of effectiveness.

Micro-Learning and Gender

Additionally, we examined the data to understand the relationship between micro-learning design strategies and gender. The insights from this analysis would help educators design training programs with gender-informed strategies in mind. Table 6 and Figure 8 provide summaries of this information.

Table 6

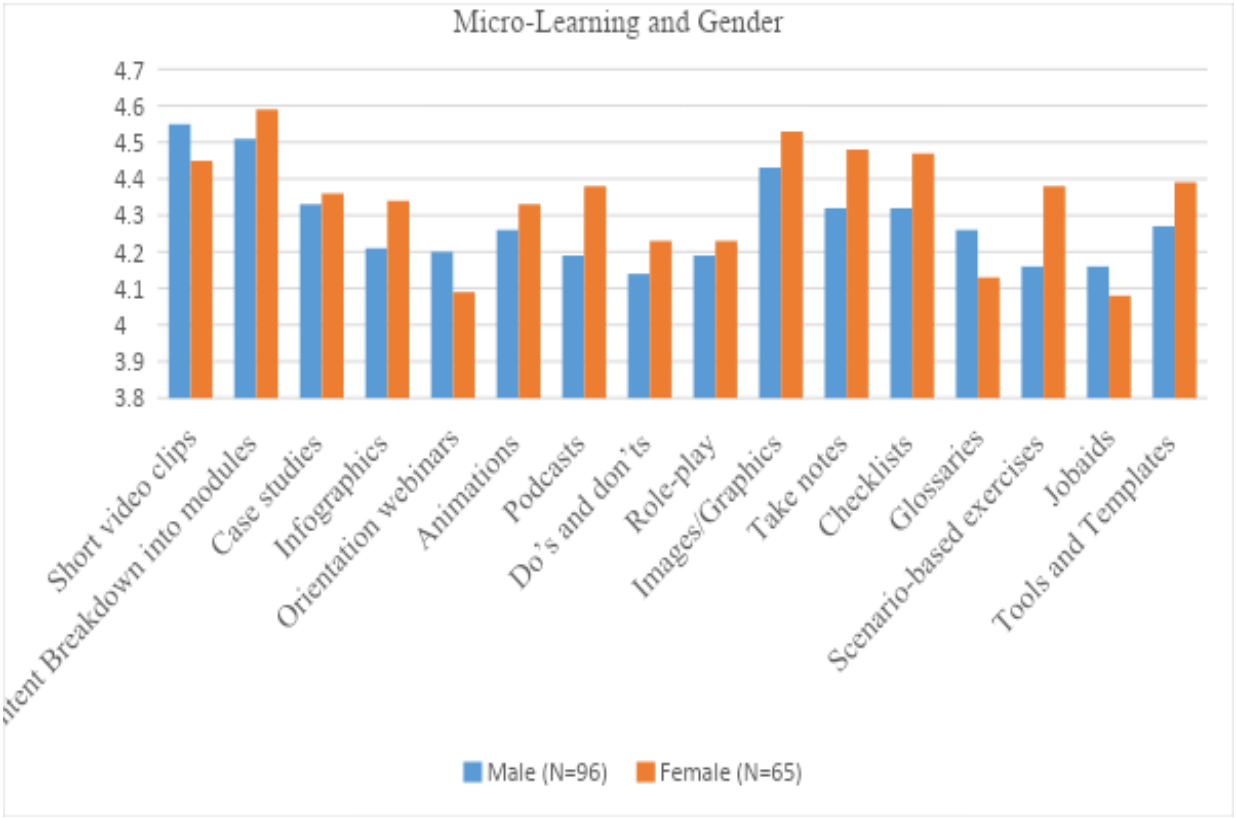
Micro-learning – Gender

Males (N=96)			**Females (N=65)**		
Design Strategy	**Mean**	**SD**	**Design Strategy**	**Mean**	**SD**
Short video clips	4.55	0.68	Short video clips	4.45	0.75
Content Breakdown into modules	4.51	0.70	Content Breakdown into modules	4.59	0.79
Case studies	4.33	0.88	Case studies	4.36	0.78
Infographics	4.21	0.82	Infographics	4.34	0.88
Course Orientation webinars	4.20	0.94	Course orientation webinars	4.09	0.92
Animations	4.26	1.00	Animations	4.33	0.93
Podcasts	4.19	1.01	Podcasts	4.38	0.77
Dos and don’ts	4.14	1.00	Dos and don’ts	4.23	0.83
Role-play	4.19	1.00	Role-play	4.23	0.83
Images/Graphics	4.43	0.78	Images/Graphics	4.53	0.64
Take notes	4.32	0.95	Take notes	4.48	0.73
Checklists	4.32	0.95	Checklists	4.47	0.64

Glossaries	4.26	0.89	Glossaries	4.13	0.83
Scenario-based exercises	4.16	0.99	Scenario-based exercises	4.38	0.83
Job aids	4.16	0.92	Job aids	4.08	1.03
Tools and Templates	4.27	0.89	Tools and Templates	4.39	0.70

Figure 8

Micro-learning – Gender



Based on this data, it is challenging to draw clear gender-related micro-learning patterns. The mean ratings and standard deviations of the design strategies between male and female respondents appear to be relatively similar, with minor differences in some cases, as observed here:

- The content breakdown into modules: Females (M=4.59, SD=0.79) rated this strategy slightly higher than males (M=4.51, SD=0.70).
- Images/graphics: Females (M=4.53, SD=0.64) rated this strategy slightly higher than males (M=4.43, SD=0.78).
- Take notes: Females (M=4.48, SD=0.73) rated this strategy slightly higher than males (M=4.32, SD=0.95).
- Checklists: Females (M=4.47, SD=0.64) rated this strategy slightly higher than males (M=4.32, SD=0.95).
- Short video clips: Males (M=4.55, SD=0.68) rated this strategy slightly higher than females (M=4.45, SD=0.75).
- Tools and Templates: Females (M=4.39, SD=0.70) rated this strategy slightly higher than males (M=4.27, SD=0.89).

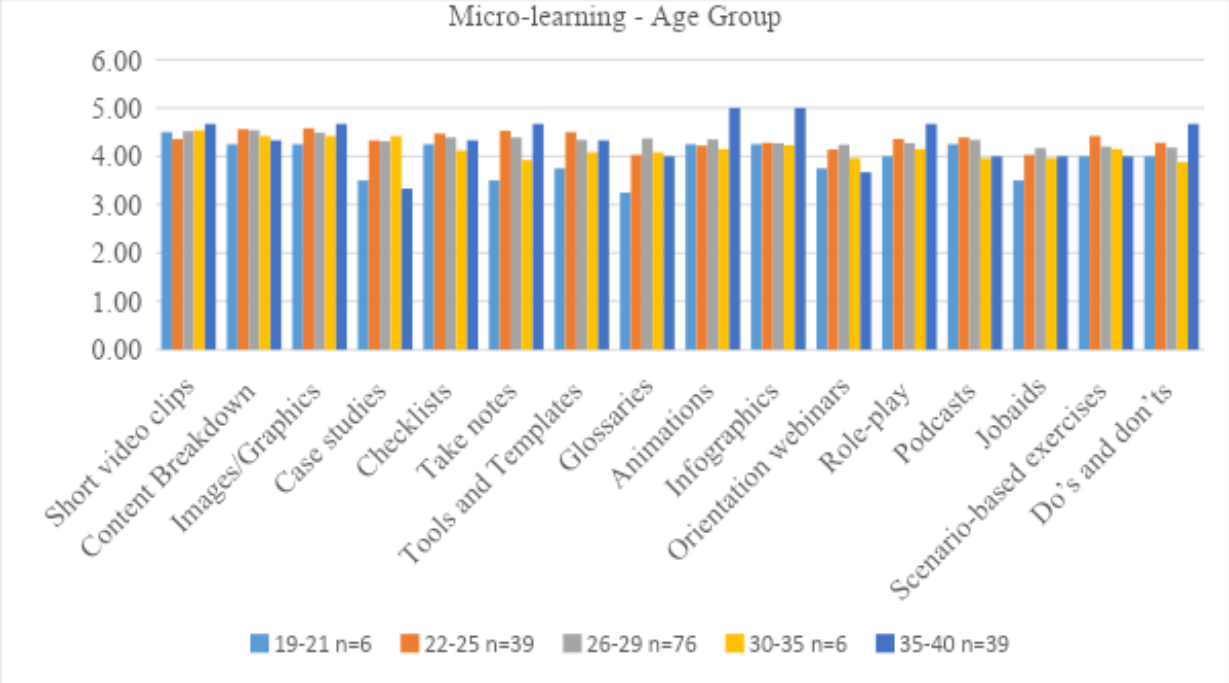
These observations show slight variations in the mean ratings and standard deviations between males and females for some design strategies. However, it is important to note that these differences are relatively small and may not necessarily indicate significant gender-related patterns. The sample sizes for males (N=96) and females (N=65) differ, potentially affecting the observed differences.

Micro-Learning and Age Groups

The next part of this analysis focuses on micro-learning and age groups. The data were divided into age groups ranging from 19 to 40 years to determine whether there were any patterns between the younger and older learners. Figure 9 is a summary of the data on micro-learning and age groups.

Figure 9

Micro-learning - Age Group



Several patterns emerge from the data on micro-learning design strategies across different age groups. It is, however, important to note that as much as the patterns provide insights into the preferences and perceptions of different age groups, the sample sizes vary. Age group 19 -21 (N=6), 22-25 (N=39), 26 -29 (N=76), 30-35 (N=6), and 36 - 40 (N=39). The sample size for the youngest age group, 19 -21 (N=6), and the older age group, 30 - 35 (N=39), are relatively small and may impact the reliability and generalizability of the patterns from these groups. Next, we

look at the patterns and insights observed from the relationship between age groups and micro-learning data.

Short video clips, content breakdown, images/graphics, checklists, and tools and templates consistently received relatively high ratings across most age groups. These design strategies generally have mean ratings above 4.0, indicating that they are perceived as effective across different age groups. They are consistently well-received regardless of age. On the other hand, case studies received relatively lower ratings than other strategies, especially among the 19-21 (M=3.50) and 36-40 (M=3.33) age groups. This observation implies that these age groups may prefer or perceive case studies as less effective.

Take notes had mixed ratings across different age groups. It received high ratings from the 22-25 (M=4.53) and 26-29 (M=4.39) age groups but lower ratings from the 19-21 (M=3.50) and 30-35 (M=3.92) age groups. Other strategies that received mixed ratings include “podcasts,” “job aids,” “scenario-based exercises” and “dos and don’ts.” This observation demonstrates a divergence in preferences and perceptions regarding the effectiveness of these strategies among different age groups. Animations and infographics received high mean ratings across various age groups, particularly among the 36-40 (M=5.00) age group. This suggests that these visually engaging learning strategies are generally well-received and perceived as effective in conveying information across different age groups and are preferred as the learners grow older.

Course orientation webinars received relatively lower ratings across all age groups, with the 36-40 age group rating it the lowest (M=3.67). This indicates a potential need for more preference or perceived effectiveness for this strategy among the respondents. In addition, the “dos and don’ts” strategy received lower ratings, especially among the 30-35 age group

(M=3.88). This observation also suggests that the strategy is not preferred in the 30-35 age group.

However, there were exciting observations on role play that received consistent ratings across different age groups, with only slight variations. This implies that the effectiveness of this strategy is perceived similarly across various age cohorts.

Some design strategies show variations in mean ratings across different age groups. For example:

- "Case studies" received a relatively lower mean rating from the 19-21 age group (M=3.50) than the other age groups.
- "Animations" and "Infographics" received higher mean ratings from the 36-40 age group (M=5.00) than other age groups.
- "Glossaries" received a lower mean rating from the 19-21 age group (M=3.25) than other age groups.
- "Course orientation webinars" received a relatively lower mean rating from the 19-21 (M=3.75) and 36-40 (M=3.7) age groups than other age groups.

In conclusion, there is an overall positive perception as the mean ratings for most design strategies across different age groups are relatively high, ranging from 4.00 to 4.67. This means that the participants generally perceive these design strategies favorably. The emerging patterns also suggest that there may be differences in the perception and effectiveness of certain micro-learning design strategies across different age groups.

Summary

Chapter 5 of the report presents the analysis of instructional design strategies used in the youth training in Kenya. The data that was analyzed here was collected through an online survey. The raw data collected from the survey was thoroughly examined to identify and rectify any errors, inconsistencies, or missing information. This cleaning process ensured that the data was accurate and reliable for analysis. The data was organized and structured for analysis after it had been cleaned, with the variables being properly marked and categorized. The data reported in this chapter was then examined for patterns, relationships, and trends using statistical methods (mean and standard deviation) and data visualization tools (tables and charts).

The chapter starts by discussing the population demographics of the study, highlighting a response rate of 47% in the online survey, which is considered significant. The chapter then delves into the findings related to gamification, indicating that features like “end of module assessment,” “certificate of completion,” and “navigation freedom” are highly rated. On the other hand, “badges on module completion” and “chat/discussion forums” received lower ratings. The analysis further explores the relationship between gamification and gender, revealing slight differences in the perceptions of certain design strategies between males and females. Next, the chapter examines micro-learning data, indicating that most design strategies have relatively high mean ratings above 4.0, with “content breakdown into modules,” “short video clips,” and “images/graphics” being particularly well-received. The relationships between

micro-learning, gender, and age groups are also analyzed, revealing subtle patterns and preferences among different groups.

In summary, the findings suggest that the instructional design strategies in the youth training in Kenya are generally well-received and effective. Gamification features like “end of module assessment” and “certificate of completion” are highly rated, while “badges on module completion” and “chat/discussion forums” may need further improvement. Micro-learning design strategies, such as “content breakdown into modules,” “short video clips,” and “images/graphics,” are perceived positively across different age groups. The chapter emphasizes the importance of considering learners’ diverse preferences, needs, and backgrounds, particularly gender and age, when designing youth friendly training initiatives.

Chapter 6. Discussion

Introduction

As observed in the literature, instructional design methodologies are crucial in shaping compelling educational experiences and meaningful learning outcomes (Siemens, 2004). In today's rapidly evolving world, integrating technology and the demands of diverse learners have presented new challenges and opportunities for instructional designers. This research explored the emerging patterns of preferred instructional design strategies in youth training in Kenya. This Chapter looks at the contrast and similarities, the key design recommendations given the results on gamification and micro-learning in general, for the male and female and finally for the young vs the old. First, we look at gamification.

Gamification

Given the results that were presented in Chapter 5 on gamification, the following are the key design recommendations for gamification for youth training:

Prioritize end-of-module assessment and certificate of completion. The study highlights two key design strategies, "end of module assessment (M=4.44)" and "certificate of completion (M=4.31) which garnered the highest mean ratings." Participants perceived these strategies positively, suggesting that learners value having an end-of-module assessment to reinforce their learning and a certificate of completion as a recognition of their achievement. Noteworthy comments, such as "Amazing completion motivation method" highlight the certificate's effectiveness as a motivational tool, encouraging learners to complete the course successfully. Similarly, feedback like "I like getting feedback on the quiz response immediately" emphasizes the timeliness of end-of-module assessments in providing valuable feedback.

Furthermore, the comment "Availability of certificate immediately after completion" reinforces the importance of immediate certification, as learners appreciate receiving their certificates right after finishing the course, enhancing their sense of accomplishment and recognition.

The findings from Werbach and Hunter's (2015) work on game thinking's influence on business strategies are consistent with the results of this study. Just as they emphasize the utilization of game mechanics to achieve organizational objectives, the current study's findings suggest that end-of-module assessment and certificate of completion rooted in gamification principles have a positive impact on learner engagement and motivation. This could also explain why these strategies gained high mean ratings in this study. Course developers for youth training should prioritize incorporating these elements into their gamified courses to enhance learner engagement and motivation.

Enhance progress tracking and navigation freedom. In line with the findings of Majuri et al. (2018), which highlighted the prevalence of affordances related to achievement and progression in gamified education, our study demonstrates that learners highly value progress tracking (M=4.25) and navigation freedom (M=4.26). Learners' positive feedback, such as "The options to navigate through several times" and "It enabled me to get back to any module I felt I underperformed," underscores the importance of providing learners with control over their learning journey and the ability to revisit specific modules. Furthermore, the comment "Real-time progress bar update and location in the course" resonates with progress tracking, reinforcing learners' appreciation for real-time updates on their progress. These findings align with Vidakis et al.'s (2019) identification of gamification characteristics, including scores and rewards, used to enhance users' awareness and performance.

Course developers should focus on implementing clear progress-tracking mechanisms and intuitive navigation options to empower learners to monitor their advancement and navigate the course content efficiently.

Reconsider the use of chat/discussion forums. The design strategy "chat/discussion forums" received a lower mean rating (M=3.91) than other gamification elements. While the difference in mean rating is not substantial, it suggests that learners might not find this feature as favorable. The feedback from learners, such as "There were so many unnecessary chats," highlights their dissatisfaction with the chat/discussion forums in the course. This observation indicates that the feature might not have been well-received or effective for them. These findings present a contrasting viewpoint compared to the perspective that underscores the effectiveness of engaging youth learners through interactive environments and tailored features (Abbas et al, 2022; Cavanaugh & Jacquemin, 2015).

Therefore, it is important for course developers to approach the incorporation of chat/discussion forums with a comprehensive understanding. If the feature aligns with the learning objectives and goals, course developers should consider providing clear guidelines and support to encourage meaningful engagement and interactions among learners. Alternatively, course developers may explore other methods of facilitating interactive discussions and collaborative learning experiences that resonate better with the preferences and needs of the learners. These findings highlight the importance of adapting instructional design strategies based on direct learner feedback and preferences to optimize engagement and effectiveness in youth training programs.

It is worth noting that while there are some differences in the mean ratings based on gender, the overall preferences for the top strategies remain relatively consistent between male

and female learners. Therefore, course developers can consider incorporating a combination of the following recommended gamification design strategies to create engaging and inclusive learning experiences for all learners:

For males:

End of module assessment. Among males, "end of module assessment" received the highest mean rating (M=4.37). This suggests that male learners value having an assessment at the end of the module to reinforce their learning and assess their understanding. Course developers should prioritize incorporating end-of-module assessments to engage male learners effectively.

Navigation freedom. "Navigation freedom" obtained the second-highest mean rating (M=4.29) among males. This indicates that male learners appreciate having the freedom to navigate the course content as they desire. Course developers should ensure the course interface is user-friendly, allowing male learners to explore different sections and topics efficiently.

Certificate of completion. The "certificate of completion" strategy had the third-highest mean rating (M=4.27) for male. This indicates that male learners value receiving a certificate after completing the course. Course developers should consider implementing a certificate reward system to give male learners a sense of achievement and recognition.

For females:

End of module assessment. Among females, "end of module assessment" received the highest mean rating (M=4.52). Like male learners, female learners also highly value having an assessment at the end of the module. Course developers should prioritize incorporating end-of-module assessments to engage female learners effectively.

Certificate of completion. The "certificate of completion" strategy obtained the second-highest mean rating (M=4.41) among females. This indicates that female learners, like male learners, appreciate receiving a certificate upon completing the course. Implementing a certificate reward system would motivate and resonate well with female learners.

Progress tracking. "Progress tracking" had the third-highest mean rating (M=4.38) for females. This suggests that female learners value being able to track their progress throughout the course. Course developers should focus on implementing clear progress-tracking mechanisms that allow female learners to monitor their advancement easily.

It is important for course designers to consider creating instructional experiences for different age groups as there exist differences in the perception of instructional design strategies of their learners in different age ranges. We grouped learners aged 19 – 25 as younger learners because they are still in the early stages of their adult lives and may share similar educational experiences, preferences, and technological familiarity. Additionally, the sample size (N=45) for younger learners provides a reasonable representation to draw insights about this age group in the context of our research.

For young learners (age 19-25):

Navigation. Among young learners, "navigation" received the highest mean rating (M=4.33). This suggests that young learners highly value a user-friendly and intuitive course navigation system. Providing clear directions of what learners are supposed to do at every stage in the course is crucial for their engagement and success. Testimonials from young learners support this notion, as one participant commented, "There were clear directions of what I was supposed to do at every stage in the course." This feedback emphasizes the importance of a well-structured navigation system that seamlessly guides learners through the content. Course

developers should, therefore, focus on creating a clear and easy-to-use interface to engage and retain young learners' interest, ultimately enhancing their learning experience and maximizing knowledge retention.

Progress tracking. "Progress tracking" had the second-highest mean rating (M=4.46) for young learners. This indicates that young learners appreciate the ability to track their progress throughout the course. Implementing a visual progress-tracking mechanism can motivate young learners to stay on track and complete the course.

Certification. The "certification" design strategy obtained the third-highest mean rating (M=4.33) among young learners. This suggests that young learners value receiving a certificate upon completing the course. The feedback from young learners reinforces this idea, as one participant stated, "It was a good chance to earn a certificate." This comment highlights the significance of a certification reward system in motivating learners and providing them with a tangible sense of achievement and recognition for their efforts. Course developers should, therefore, consider implementing a certificate reward system to enhance the learning experience for young learners further. By offering a certificate upon completion, course providers can instill a greater sense of accomplishment and boost learners' commitment to the course material, leading to increased engagement and improved knowledge retention.

We grouped learners aged 26 – 40 as older learners because they had progressed further in their careers and might have different learning needs and perspectives than younger learners. Additionally, the sample size N=121 for older learners provides a substantial representation to gain insights about this age group in the context of our research.

For older learners (age 26-40):

Certification. Among older learners, "certification" received the highest mean rating (M=4.67). This indicates that older learners highly value receiving a certificate of completion after finishing the course. Implementing a certification system can serve as a strong motivator for older learners to complete the course.

Progress tracking. "Progress tracking" had the second-highest mean rating (M=4.38) for older learners. Like young learners, this indicates that older learners also appreciate the ability to track their progress throughout the course. Course developers should ensure that the progress tracking feature is easily accessible and user-friendly for older learners.

Assessment. In the research, "Assessment" obtained the third-highest mean rating (M=4.41) among older learners. This indicates that older learners value assessments as an integral part of the learning process. Moreover, the feedback from older learners further supports this finding, as one participant emphasized, "More assessments!" This comment underscores the importance of incorporating meaningful and well-designed assessments to cater to the preferences of older learners. Thus, integrating a variety of assessments into the course structure is vital in catering to the preferences and needs of older learners and optimizing their learning journey.

While the specific preferences differ slightly between the two age groups, some strategies, such as certification and progress tracking, are highly valued by young and older learners. Course developers can use this information to tailor their gamification strategies to meet the preferences of each age group, providing an engaging and effective learning experience for all learners.

Micro-learning

Micro-learning research findings from the Amref youth training were extensively presented in Chapter 5, encompassing data trends, correlations, and patterns. In this section, we look at the implications of these results on micro-learning for educators, instructional designers, and policymakers. The subsequent discussion will highlight key recommendations tailored specifically for the youth group, considering distinctions between male and female learners, and differences between young and older participants. By examining these distinct cohorts, we can glean valuable insights that will inform the design and implementation of micro-learning strategies.

The following were the key recommendations for micro-learning and youthful learners:

Content breakdown into modules. The "content breakdown into modules" design strategy received the highest mean rating (M=4.55) among youth learners. This indicates that breaking down the course content into smaller modules is highly effective for engaging and supporting youth learners. One participant noted, "The micro-learning aided in a quick and in-depth understanding of the topical issues in the training." This suggests that the modular approach allowed learners to grasp the content more efficiently and thoroughly. Another participant mentioned, "The topics were broken down and very focused." This feedback reinforces the idea that dividing the course into smaller, focused modules helps learners stay engaged and attentive, as they can concentrate on specific topics without feeling overwhelmed.

Furthermore, participants appreciated the ease of learning associated with the modular structure. One individual stated, "Packaging the module content did not stress my brain a lot when learning." This observation aligns with Canagarajah's (2019) concept of micro-learning reducing cognitive load and promoting efficient learning. Moreover, participants perceived the

course as straightforward despite its depth, with one learner expressing, “It made the entire training look so simple, yet it had a lot of content.” This feedback suggests that the modular design facilitated understanding and created a sense of accomplishment for learners. Just as Kapp (2014) and Canagarajah (2019) emphasize the benefits of micro-learning in catering to learners’ preferences for concise and just-in-time learning experiences, our findings with the highest mean rating (M=4.55) for this strategy suggest a similar positive impact on youth learners. Additionally, the participants’ feedback mirrors the principles highlighted by the authors. Therefore, the findings demonstrate that “content breakdown into modules” design strategy, which received high learner approval, reflects the principles of micro-learning’s efficiency and effectiveness emphasized by Kapp (2014) and Canagarajah (2019). This alignment underscores the value of course developers structuring courses into bite-sized modules to enhance comprehension, retention, and engagement among youth learners.

Short video clips. “Short video clips” obtained the second-highest mean rating (M=4.50) among youth learners. This suggests that integrating short video clips into the course is a valuable strategy to capture and maintain the attention of young learners. One participant commented, “There was a variety of content to learn from, text, video, audio, and even interactive games. I liked the approach taken for the training.” This feedback highlights the significance of providing diverse content formats for different learning preferences. Learners can benefit from a multisensory approach that reinforces understanding and retention by including videos alongside text and interactive elements.

Furthermore, another participant shared, “Watching the videos helped me follow through the topics.” This observation underscores the effectiveness of using video clips to facilitate comprehension and progress through the course material. Videos can visually demonstrate

concepts, making complex topics more accessible and easier to grasp. Additionally, participants expressed interest in real-life video clips, with one learner suggesting, “Can the use of real-life video clips be considered?” This observation demonstrates that incorporating authentic and relevant video content can increase learners’ engagement and relevance to their lives. Participants’ feedback in this research echoes the principles outlined by Johnson et al. (2019) and Smith (2018). The participant’s comment about the variety of content formats, including videos, text, audio, and interactive games, reflects the multisensory approach that Smith discusses. This approach enhances understanding and retention by catering to different learning preferences.

Furthermore, the observation that watching videos aided in following through the topics aligns with Johnson et al.’s assertion that short video clips align well with the attention spans of youth and facilitate engagement with learning material. The participant’s suggestion about considering real-life video clips reinforces the concept of authenticity and relevance emphasized by these authors. Just as Smith (2018) mentions that micro-learning strategies like short video clips cater to the digital-native nature of today’s youth, the findings in this study provide empirical support for this assertion.

Images/graphics. The “Images/graphics” strategy received the third-highest mean rating (M=4.47) among youth learners. This rating highlights the significance of incorporating relevant and visually appealing images or graphics into the course material, as they can significantly enhance the learning experience for young learners. Participants commented on the effectiveness of visual elements, with one learner stating, “The cartoon graphics made the content lively.” This feedback highlights the impact of visually engaging elements like cartoons to bring the course content to life. Lively and colorful graphics can capture learners’ attention, making the material more enjoyable and memorable. Additionally, another participant mentioned, “There are audio

lessons with fun pictorial models." This remark underscores the benefits of combining audio with visual elements, such as fun pictorial models. This combination can reinforce learning and create a multisensory experience, making the content more accessible and easily understood.

The findings from Brown et al. (2019) regarding best practices for designing micro-learning in youth education closely align with the findings on the "Images/graphics" strategy in this study. Brown et al. (2019) emphasizes the importance of engaging multimedia content in micro-learning, which includes visual elements like images and graphics. The finding regarding the third-highest mean rating (M=4.47) for the "Images/graphics" strategy provides empirical support for incorporating visually appealing elements into the learning experience for young learners. Participants' feedback in this research reinforces the principles outlined by Brown et al. (2019). The participant's comment about cartoon graphics making the content lively echoes the idea of using engaging multimedia content to enhance the learning journey. Similarly, the remark about audio lessons with fun pictorial models underlines the potential of combining various media elements to create a multisensory experience, as suggested by Brown et al. (2019).

In conclusion, the findings on the "Images/graphics" strategy align with Brown et al. (2019) best practices for designing micro-learning in youth education. The incorporation of visually appealing elements into the course material, as supported by the findings in this research and the recommendations of Brown et al. (2019), can indeed enhance engagement and create a comprehensive learning journey for young learners.

Course developers should leverage these strategies - content breakdown into modules, short video clips, and images/graphics - to design micro-learning experiences that resonate well with youth learners. By utilizing these effective strategies, course developers can create engaging and impactful learning content that caters to young audiences' learning preferences.

Micro-Learning and Gender

Having looked at the data and the emerging patterns in the relationship between micro-learning and gender in Chapter 5, the researcher explores this concept further here to highlight some recommendations for educators. The following are the similarities and differences in the data that would inform the design and implementation of gender-responsive micro-learning experiences. The micro-learning design strategies preferred by males and females were as follows:

For males:

Short video clips. "Short video clips" obtained the highest mean rating (M=4.55) among male learners. Integrating short video clips into the course can be a powerful way to capture male learners' attention and facilitate their understanding. Videos can deliver information in an engaging and dynamic format, making the learning experience more enjoyable and effective.

Content breakdown into modules. The "content breakdown into modules" strategy received the second highest mean rating (M=4.51) among male learners. Breaking down the course content into smaller modules seems to be highly effective in engaging male learners. Course developers should focus on organizing the content into easily digestible modules to enhance the learning experience for male participants.

Images/Graphics. The "images/graphics" strategy received the third-highest mean rating (M=4.43) among male learners. Incorporating relevant and visually appealing images or graphics into the course content can support male learners in better comprehending the material and sustaining their interest throughout the learning process.

On the other hand, males demonstrate a relatively lower interest in certain micro-learning design strategies, such as podcasts (M=4.19), role-play (M=4.19), scenario-based exercises (M=4.16), and dos and don'ts (M=4.14). These strategies may not align as closely with male's learning preferences within this study, which tend to lean more towards visual and interactive content.

For females:

Content breakdown into modules. Among female learners, the "content breakdown into modules" strategy received the highest mean rating (M=4.59). Like male learners, female learners also highly value content organization into smaller modules. Course developers should prioritize creating modular learning experiences that cater to the preferences of female participants.

Images/Graphics. The "images/graphics" strategy obtained the second-highest mean rating (M=4.53) among female learners. Including visually engaging images or graphics in the course material can be particularly beneficial for female learners, enhancing their understanding and engagement with the content.

Take notes. The "take notes" design strategy received the third-highest mean rating (M=4.48) among female learners. This rating suggests that female learners find value in opportunities to take notes during the learning process. One participant expressed their positive experience with this strategy, stating, "Taking notes and retrieving them at the end of the module was such an experience." This feedback highlights the benefits of encouraging learners to actively engage with the course material by jotting down important points. Note-taking reinforces learning, as learners are required to process and organize information in their own words, promoting better understanding and retention. Given the positive response from female

learners, it is evident that offering opportunities for notetaking can be an effective micro-learning strategy.

Course developers could introduce interactive features that enable learners to record their notes throughout the module, making it easier to refer to the information later. This practice fosters a sense of ownership and control over the learning process, empowering learners to take charge of their education.

The data reveals that females prefer micro-learning strategies that offer structured content, visual elements, note-taking opportunities, and interactive learning experiences. Tailoring micro-learning courses to align with these design strategies for each gender can enable course developers to create more engaging and effective learning experiences for both male and female learners.

Micro-Learning and Age Group

Given that the data on micro-learning and age groups was explored in Chapter 5, the researcher explores the key recommendations for the younger (age group 19-29) and older (age group 30-40) learners. The following are the key recommendations for educators and instructors designing learning content for these age groups.

Recommendations for young learners (age group 19-25):

Short Video Clips. Among young learners (19-25), "short video clips" received consistently high ratings, with a mean ranging from 4.36 to 4.54 across the different age subgroups. Young adult learners are likely to respond positively to short video content that is engaging, visually appealing, and delivers information concisely and compellingly. Course

developers should prioritize incorporating short video clips into the micro-learning modules for this age group.

Content Breakdown. "Content breakdown" strategy also received favorable ratings across the young learners' age subgroups, with a mean ranging from 4.25 to 4.56. Breaking down the course content into smaller, manageable modules can be particularly effective for young learners, as it allows them to focus on specific topics and facilitates better comprehension and retention of information.

Images/Graphics. The "images/graphics" obtained consistently high mean ratings among young learners, with a mean ranging from 4.28 to 4.58. This rating is consistent with the observation that visual elements, such as diagrams and charts, play a crucial role in engaging young learners and enhancing their understanding of complex concepts. As stated by one of the learners, "Diagrams and charts made it easier to understand complex advocacy topics," integrating relevant images and graphics into the micro-learning content can make the learning experience more appealing and effective.

Leveraging visual aids, young learners can easily grasp intricate advocacy topics, leading to improved retention and comprehension of the material. Thus, incorporating diagrams and charts into the learning can be an effective micro-learning approach to facilitate learning and promote better knowledge acquisition among young learners.

For older learners (Ages 26-40):

Animations. "Animations" received high ratings among older learners (26-40), with a mean ranging from 4.22 to 5.00. Older learners will likely appreciate interactive and dynamic elements, such as animations that bring concepts to life and provide a richer learning experience.

Course developers should consider integrating animations into the micro-learning modules to cater to the preferences of older learners.

Images/Graphics. Like young learners, "images/graphics" received consistently high ratings among older learners, with a mean ranging from 4.27 to 5.00. Visual aids can be precious for older learners, assisting them in grasping complex ideas and retaining information. Course developers should emphasize using relevant and appealing images and graphics to support the learning process for this age group.

Checklists. "Checklists" received favorable ratings among older learners, with a mean ranging from 4.08 to 4.39. Older learners may benefit from the clear and organized presentation of content through checklists. Course developers can utilize checklists to help older learners stay on track with their learning progress and reinforce key points.

Incorporating these micro-learning design strategies for each age group enables course developers to create tailored and effective learning experiences that cater to young and older learners' specific preferences and needs.

The ARCS Model and the Study's Findings

The findings from this study align with the ARCS Model of Motivational Design principles. The ARCS Model emphasizes capturing learners' attention, establishing relevance, building confidence, and ensuring satisfaction to enhance their motivation and engagement. The study's insights provide concrete evidence of how these design strategies correspond to the ARCS Model's principles.

For instance, the recommendation to prioritize end-of-module assessments and certificates of completion resonates with the ARCS Model's focus on establishing relevance and satisfaction. Learners' positive responses to these strategies, as reflected in comments like

"Amazing completion motivation method" and "Availability of certificate immediately after completion," highlight how these elements contribute to learners' confidence and sense of accomplishment. This aligns with the ARCS Model's emphasis on building learners' confidence by attributing success to individual ability and effort.

Moreover, the emphasis on progress tracking and navigation freedom aligns with the ARCS Model's satisfaction principle. The study's findings reveal that learners appreciate the ability to monitor their advancement and navigate freely through the course material. This mirrors the ARCS Model's recommendation of providing opportunities for learners to derive satisfaction from their progress and accomplishments.

In the micro-learning context, the strategies of content breakdown into modules, short video clips, and images/graphics correspond to the ARCS Model's elements of attention and relevance. The study's findings emphasize the importance of captivating learners' attention through engaging multimedia content, offering relevant and visually appealing materials, and breaking down complex topics. These strategies resonate with the ARCS Model's attention and relevance components, which aim to make the learning experience exciting and applicable to learners' goals.

Applying the ARCS Model's principles to the study's findings reveals that these design strategies effectively address the key elements of motivation in instructional design. The study's findings are consistent with the ARCS Model, highlighting the importance of designing educational experiences to fulfill learners' motivational requirements and produce more engaging and meaningful learning journeys.

Limitations

The research presented in this study provides valuable insights into instructional design strategies used in the youth training in Kenya. However, it is essential to acknowledge certain limitations that may affect the interpretation and generalizability of the findings:

Limited generalizability. The study focuses on the Amref youth training in Kenya, which may limit the generalizability of the findings to other training programs or populations. The unique context and characteristics of the Amref youth training participants may only partially represent the diversity of the broader population, thereby affecting the study's external validity. However, the insights garnered from this research can significantly benefit similar youth training programs within East Africa. Considering the region's specific socio-cultural and educational contexts, educators and program coordinators in other East African countries can adapt and apply the findings of this study.

Self-selection bias. The response rate for the online survey was 47%, which might introduce self-selection bias. Participants who chose to respond to the survey may have different characteristics or opinions compared to non-participants, influencing the overall representativeness of the data. Despite this inherent limitation, the data remains a valuable resource for understanding instructional design strategies among the participants involved in the study. Cautiously interpreting the findings within the context of the respondents' demographics and acknowledging the potential for self-selection bias, researchers can gain meaningful and applicable knowledge from the findings of this study.

The small sample size for specific groups. Some age groups, such as 19-21 and 30-35, have small sample sizes (N=6), which can limit the reliability and generalizability of the results for these specific age groups. However, it is worth noting that these findings offer preliminary

insights into the instructional design strategies within these cohorts. Future studies with larger and more diverse samples in these age categories can further validate and expand upon the implications drawn from this research.

Gender imbalance. The number of male respondents (N=96) and female respondents (N=65) differs, potentially introducing gender-related biases in the analysis. However, it is worth noting that gender imbalances in research samples do not necessarily invalidate the entire study. Many factors contribute to the underrepresentation of certain genders in research, and researchers often work with available data from real-world settings. Despite the gender imbalance, this study's findings still offer valuable insights into gender-informed instructional design, but it is vital to interpret the results with an awareness of this limitation.

Lack of comparison group. The study analyzes the perceptions of instructional design strategies but needs to include a comparison group that received specific strategies. With a control group, it is easier to ascertain the unique impact of each instructional design strategy on learning outcomes and engagement. Regrettably, the Amref project utilized in the research was not originally designed for this study and was based on an ongoing initiative, making it impractical for the researcher to implement a control group.

Overall, while the research provides valuable insights into instructional design strategies and their perceptions among the Amref youth training participants, the limitations should be considered when interpreting and applying the results to other contexts or populations. Further research with larger and more diverse samples and including control groups would strengthen the robustness and generalizability of the findings.

Recommendations for Future Research

Based on the drawn conclusion, the researcher made the following recommendations for future research:

In-depth analysis of low-rated gamification features. The study highlighted that certain gamification features, such as 'badges on module completion' and 'chat/discussion forums,' received lower ratings. Future research should focus on understanding the reasons behind these lower ratings. Conducting qualitative interviews or focus groups with learners can provide valuable insights into their preferences and perceptions, helping to identify areas for improvement in these design strategies.

Exploring gender-informed instructional design. The research identified slight differences in instructional design strategies between male and female learners. Future research could delve deeper into gender-informed instructional design to better understand how instructional design strategies can be tailored to meet the unique needs of each gender. This could involve investigating how individuals of different genders respond to various instructional design strategies, tools, and approaches.

Longitudinal studies. This research provided a snapshot of learners' perceptions at a specific point in time. Longitudinal studies could be conducted to track learners' perceptions over an extended period, allowing researchers to identify trends and changes in their preferences and satisfaction levels. This approach would provide a more comprehensive understanding of different instructional design strategies' effectiveness and long-term impact.

Comparative studies with different learning populations. The current study focused on the Amref youth training in Kenya. Future research could conduct comparative studies with different learning populations to explore the generalizability of the findings. Comparing learners

from diverse cultural backgrounds, age groups, or educational levels can reveal insights into how instructional design strategies may vary across different contexts.

Mixed-methods research. Future research can employ mixed-methods approaches to gain a more comprehensive understanding of learners' experiences and preferences. Combining qualitative data (e.g., interviews, focus groups) with quantitative data (e.g., survey responses) can offer a richer and more subtle perspective on learners' perceptions and the factors influencing their satisfaction with instructional design strategies.

Exploring learning outcomes. While the current research focused on learners' perceptions and satisfaction with instructional design strategies, future studies could investigate the relationship between these strategies and actual learning outcomes. Evaluating the impact of different design approaches on learners' knowledge retention, skill acquisition, and performance can provide valuable insights into the effectiveness of various instructional design techniques.

Personalized learning. As the study acknowledged that learners may have different preferences and needs, future research can explore the potential of personalized learning approaches. Investigating how instructional design strategies can be personalized based on individual learners' characteristics and preferences could lead to more effective and engaging learning experiences.

Exploring the instructor's perspective. While this research focused on learners' perspectives, it would also be beneficial to consider the instructor's viewpoint. Future studies could examine the instructors' experiences implementing various instructional design strategies and their observations on learner engagement and outcomes.

Addressing these areas of investigation in future research, educators and instructional designers can gain valuable insights into the most effective and engaging instructional design strategies, leading to enhanced training initiatives and improved learning outcomes for learners.

Conclusion

In conclusion, this Chapter delves into the discussion and implications of the research findings on instructional design strategies in a youth training in Kenya. The study recognizes the crucial role of instructional design strategies in shaping effective educational experiences and enhancing learning outcomes in today's rapidly evolving world. Integrating technology and the diverse demands of learners has presented new challenges and opportunities for instructional designers. The Chapter analyzes gamification and micro-learning design strategies and highlights key instructional design recommendations tailored for youth training programs based on gender and age groups.

For gamification, the study recommends prioritizing end-of-module assessments and certificates of completion, enhancing progress tracking and navigation freedom, and reconsidering chat/discussion forums. Despite the gender imbalance in the data, both male and female learners consistently prefer the top gamification instructional design strategies. End-of-module evaluation, navigation freedom, and certificates of completion are particularly preferred by male learners. In contrast, female learners highly value end-of-module assessments, certificates of completion, and progress tracking.

In micro-learning, the research emphasizes the significance of content breakdown into modules, short video clips, and images/graphics for engaging youth learners. These design strategies hold similarities across gender, with male and female learners expressing comparable preferences for micro-learning elements. Additionally, age-specific recommendations are

provided for young learners (age 19-25) and older learners (age 26-40) to enhance their micro-learning experiences.

The study acknowledges several limitations, including limited generalizability, self-selection bias, small sample sizes for certain age groups, and the lack of a comparison group. Despite these limitations, the findings offer valuable insights that can be applied to similar youth training programs within East Africa.

For future research, the study suggests exploring low-rated gamification features, delving deeper into gender-informed instructional design, conducting longitudinal studies, comparative studies with different learning populations, and adopting mixed-methods research approaches. Additionally, investigating the relationship between instructional design strategies and learning outcomes, exploring personalized learning, and considering instructors' perspectives can enrich the understanding of effective instructional design practices.

In conclusion, this research contributes to the field of instructional design by shedding light on preferred instructional design strategies in a youth training program in Kenya. By implementing the recommended design strategies, educators and instructional designers can create engaging and effective learning experiences that cater to youth learners' diverse preferences and needs, ultimately enhancing the overall quality of educational interventions.

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APPENDIX A: Letter of Introduction

Amref Advocacy Course Research Survey

Dear youth advocate,

My name is Bernard Kikechi and I am a Master of Education - Open, Digital and Distance Education student at Athabasca University, Canada. As a requirement to complete my degree, I am conducting a research project about instructional design strategies that were preferred by trainees in the Amref youth advocacy project.

Participation in this survey is voluntary and your responses will be kept confidential and anonymous. This research has been approved by the Athabasca University Ethics Board. The research data will be secured, and responses used for academic purposes only.

Please complete this brief research questionnaire.

This will take you 10 minutes to complete.

Kind regards,
Bernard

APPENDIX B: Questionnaire

1. What is your age group?
    a. 19 – 21
    b. 22 – 25
    c. 26 -29
    d. 30 – 35
    e. Other
2. What is your gender?
    a. Male
    b. Female
    c. Other
3. The Amref youth advocacy course you took uses gamification in the design. Gamification is the use of a teaching style that enables one to have fun while learning. On a scale of 1 to 5, with 1 meaning 'A Small Extent' and 5 meaning 'To a Great Extent', to what extent did you find the following gamification methods enable you to have fun while learning?
    a. Badges on module completion
    b. Freedom to navigate to different parts of the course
    c. Unlocking content - finish module one to go to module two
    d. Certificate of completion
    e. Progress tracking - progress bar
    f. Chat - discussion forums
    g. End of Module assessment
    h. Unlimited attempts to end of module Quiz
4. Any other comments on gamification?

5. The Amref youth advocacy course you took uses micro-learning. Micro-learning is the process of packaging training content into small pieces of information that can be learnt at a given point in time. On a scale of 1 to 5, with 1 meaning ‘To a Very Small Extent’ and 5 meaning ‘To a Very Large Extent,’ to what extent did you find the following micro-learning strategies enable you to learn best in order to achieve course objectives?
    a. Short videos clips
    b. Content breakdown into modules
    c. Case studies
    d. Infographics
    e. Course orientation webinars
    f. Animations
    g. Podcasts - audio recording
    h. Dos and don’ts
    i. Role-play
    j. Images/Graphics
    k. Take notes/Note taking
    l. Checklists
    m. Glossaries
    n. Scenario based exercises
    o. Job aids
    p. Worked examples - tools and templates.
6. Any other comments on micro-learning?

7. Was there anything else that you think would have been incorporated into the course that would have made it easy for you to learn?
    a. Yes
    b. No
8. If yes, list them.
9. Please rate the overall Amref youth advocacy course design?
    a. Excellent
    b. Good
    c. Poor
    d. Very poor
10. Do you have any other comments on other elements of course design that hindered or enabled your learning experience?

APPENDIX C: Tri-Council Policy Statement

PANEL ON RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE 2022

Certificate of Completion

This document certifies that

Bernard Kikechi

successfully completed the Course on Research Ethics based on the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2: CORE 2022)

Certificate # 0000808713

10 March, 2022

APPENDIX D: Certification of Ethical Approval

Athabasca University
RESEARCH CENTRE

CERTIFICATION OF ETHICAL APPROVAL

The Athabasca University Research Ethics Board (REB) has reviewed and approved the research project noted below. The REB is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2) and Athabasca University Policy and Procedures.

Ethics File No.: 24713

Principal Investigator:

Mr. Bernard Kikechi, Graduate Student
Faculty of Humanities & Social Sciences\Master of Arts in Interdisciplinary Studies (MAIS)

Supervisor:
Dr. Adnan Qayyum (Supervisor)

Project Title:
INSTRUCTIONAL DESIGN STRATEGIES AMONG YOUTH IN AN ADVOCACY TRAINING IN KENYA

Effective Date: June 21, 2022 **Expiry Date**: June 20, 2023

Restrictions:

Any modification or amendment to the approved research must be submitted to the AUREB for approval.

Ethical approval is valid *for a period of one year*. An annual request for renewal must be submitted and approved by the above expiry date if a project is ongoing beyond one year.

A Project Completion (Final) Report must be submitted when the research is complete *(i.e. all participant contact and data collection is concluded, no follow-up with participants is anticipated and findings have been made available/provided to participants (if applicable))* or the research is terminated.

Approved by: **Date: June 21, 2022**

Davina Bhandar, Chair
Faculty of Humanities & Social Sciences, Departmental Ethics Review Committee

Athabasca University Research Ethics Board
University Research Services, Research Centre

1 University Drive, Athabasca AB Canada T9S 3A3E-mail
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Telephone: 780.213.2033

APPENDIX E: Certificate of Ethical Approval - Renewal

Athabasca University
RESEARCH CENTRE

CERTIFICATION OF ETHICAL APPROVAL - RENEWAL

The Athabasca University Research Ethics Board (REB) has reviewed and approved the research project noted below. The REB is constituted and operates in accordance with the current version ofthe Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2) and Athabasca University Policy and Procedures.

Ethics File No.: 24713

Principal Investigator:
Mr. Bernard Kikechi, Graduate Student
Faculty of Humanities & Social Sciences\Master of Arts in Interdisciplinary Studies (MAIS)

Supervisor/Project Team:
Dr. Adnan Qayyum (Supervisor)

Project Title:
INSTRUCTIONAL DESIGN STRATEGIES AMONG YOUTH IN AN ADVOCACY TRAINING IN KENYA

Effective Date: June 20, 2023 **Expiry Date**: June 20, 2024

Restrictions:

Any modification/amendment to the approved research must be submitted to the AUREB for approval prior to proceeding.

Any adverse event or incidental findings must be reported to the AUREB as soon as possible, for review.

Ethical approval is valid for a period of one year. An annual request for renewal must be submitted and approved by the above expiry date if a project is ongoing beyond one year.

An Ethics Final Report must be submitted when the research is complete (i.e. all participant contact and data collection is concluded, no follow-up with participants is anticipated and findings have been made available/provided to participants (if applicable)) or the research is terminated.

Approved by: **Date: June 14, 2023**

Paul Jerry, Chair
Athabasca University Research Ethics Board

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