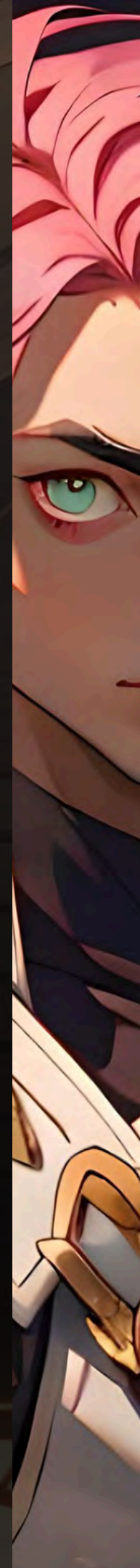Images made using **FOTOR**

NWU®

CiteSaga

Conceptualisation of a serious game for citation and reference styles

Veruschka Pelser-Carstens ⬚⬚ ⬚ Lance Bunt ⬚⬚⬚ Gordon Matthew ⬚⬚⬚ Byron Bunt⬚

A REFERELLA GAME

NWU ®

SCENE-
SETTING

Here, we'll set the **context** for CiteSaga's development, focusing on the challenges faced by South African students in mastering citation within resource-limited environments. We'll introduce the team, outlining the roles of these people, designers, and developers who collaboratively shaped the game. This collaboration was essential in creating a tool tailored to the needs of both students and educators.

S1

👤 Lance Bunt

🌈 Images made using **FOTOR**
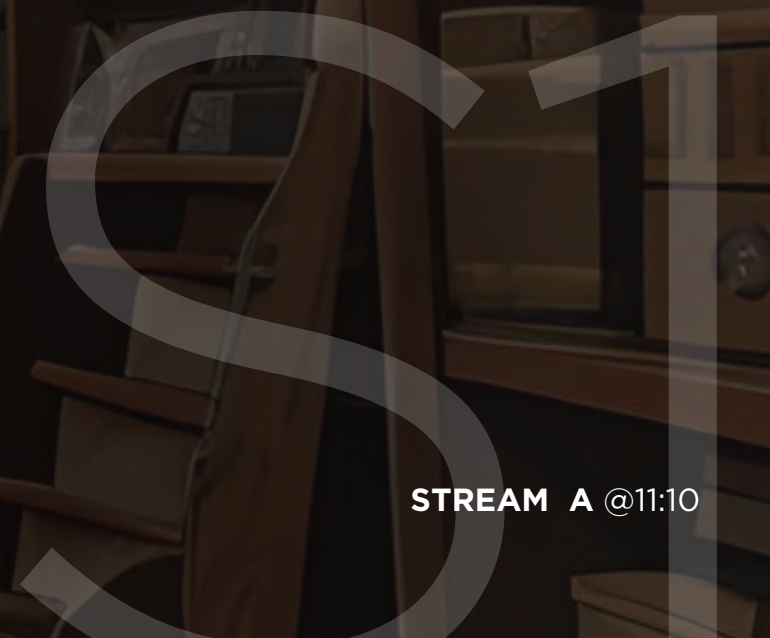
THE **CONTEXT**

In HE, students are expected to demonstrate their ability to connect their work with existing knowledge, avoid plagiarism, and contribute to academic debates by way of citation and referencing. Despite the importance of such skills, students struggle to master citation formats required across disciplines.

Byron Bunt

Images made using **FOTOR**

NWU ®

CONNECTING KNOWLEDGE THROUGH CITATION & REFERENCING

Students demonstrate their ability to connect with existing knowledge, prevent plagiarism, and meaningfully contribute to academic debates through citation and referencing **(Duff, Rogers, and Harris, 2006; Adhikari, 2018).**

Despite its importance, students often struggle to learn and apply various citation formats **(Lanning, 2016; Hamzaoui, 2021)**. This challenge is further compounded by the range of styles required across different academic fields.

To address these struggles, educators are turning to creative and engaging methods to reinforce citation skills **(Nilson, 2016)**. Serious games (SGs), which combine the enjoyment of gaming with education, offer a promising solution **(Camilleri and Camilleri, 2019)**. By using games to teach citation and referencing, we can potentially enhance student motivation, improve critical thinking, and develop better academic writing and research skills.

01

THE CORE TEAM

NWU

Dr Lance Bunt
Creative Director, Art,
Visual Designer

Lance.Bunt
@nwu.ac.za

Prof. Byron Bunt
Research Lead,
Play Designer

Byron.Bunt
@nwu.ac.za

**Dr Veruschka
Pelser-Carstens**
Project Manager, Tester

Veruschka.Pelsercarstens
@nwu.ac.za

Dr Gordon Matthew
Play Design Lead,
Digitalisation Lead

Gordon.Matthew
@nwu.ac.za

ROLE ALLOCATION

Anneke Coetzee
Content Specialist, Tester

Annecke provides subject matter expertise to the project so the game focuses on the appropriate content for the right audience.

Veruschka Pelser-Carstens
PM, Researcher, Tester

Veruschka oversees various managerial aspects of the project. She also coordinates communication, meetings, and the GDD.

Byron Bunt
Lead Researcher

Byron spearheads the research and intellectual property (disclosure) efforts surrounding the project.

Gordon Matthew
Designer, QA, Accessibility Expert

Gordon's expertise lies in game design (logic, flow, rules), accessibility concerns, research, and end-user testing.
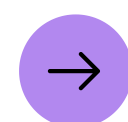
Lance Bunt
Creative Director, Art, Designer

Lance creates visual assets, balances game elements, designs game systems, builds narratives, and oversees game polish.

NWU Library
Investor, Publisher, etc.

The North-West University Library is the interest group that will fund the printing and distribution of the project.

NWU ®

THE
PROBLEM

Here, we'll dive into the challenges students face with citation in higher education and how these struggles affect their academic success. We'll then introduce our proposed **solution**, CiteSaga, a game designed to make learning citation more engaging and effective. We'll also explore the well-documented benefits of using games in higher education and how they enhance learning. Finally, we'll outline the research problem that CiteSaga aims to address, emphasising the need for innovative, interactive tools in academic writing education.

Lance Bunt

Images made using **FOTOR**

Byron Bunt

NWU ®

THE **CHALLENGE**

In the evolving landscape of higher education, academic integrity remains a cornerstone of scholarly work. However, with the rise of generative AI and citation management tools, students face new challenges in **maintaining this integrity**, particularly in mastering citation and referencing.

THE **SOLUTION**

Serious games offer a novel solution, blending the interactive nature of gaming with educational objectives to *reinforce critical skills*.

...But... *"Why should students learn citation styles if tools like Endnote automate this practice? Why do we cite?"*

CiteSaga, our board game, transforms the learning of citation and referencing into an engaging, experiential process, ensuring students can navigate the complexities of academic integrity even in the age of AI and automation.

Developed at North-West University, CiteSaga is particularly suited for environments with **limited educational resources** or **low resource stability**, making it an accessible tool for enhancing academic integrity across various contexts.

Our goal with CiteSaga is to bridge the gap between theoretical knowledge and practical application, ensuring students not only learn but internalise the importance of proper citation and referencing, especially when inundated with AI-generated content.

BENEFITS OF GAMES

NWU®

Serious games (SGs) have proven highly effective in **improving learning outcomes** across various fields, including education, healthcare, and even military training **(Yu, Gao, and Wang, 2021)**.

SGs enhance student **involvement**, promote **active learning**, and foster **essential skills** like problem-solving, critical thinking, and decision-making **(Westera, 2019; Rosa et al., 2021)**.

They've been **applied** in healthcare to help novice professionals master risk management and in global health to inspire learning and innovation **(Mason and Loader, 2019; Smith et al., 2020)**.

Using SGs in HE, especially in research-focused modules, can significantly boost student **engagement** and **comprehension**, providing dynamic platforms where theory meets practice **(Ferro et al., 2021)**.

By aligning with constructivist theories, SGs promote active **engagement** and **reflection**, motivating students to engage in self-directed learning and master complex topics **(Young et al., 2012)**.

By incorporating complex decision-making and critical thinking, SGs promote **lifelong learning**. They encourage students to apply skills in different settings, preparing them for a changing world **(Wu & Sun, 2023)**.

NWU ®

PROBLEM STATEMENT

Challenges in HE

Students in HE struggle with mastering citation and reference formats, which hinders their ability to interact with research, prevent plagiarism, and contribute to academic conversations.

Curricula Coverage

At institutions like NWU, referencing is only covered in the 1st year, with students encountering them again in the 3rd year. This gap leaves students underprepared for postgraduate research.

Role of SGs

SGs offer a fun and memorable way to teach citation and referencing. We can also integrate them into research-focused programs for a more sustainable impact **(Ifenthaler and Yau, 2020)**.

Method Limitations

Traditional teaching techniques don't effectively address the complexity of citation formats, leading to errors that can affect the quality of academic journals and increase costs for publishers and universities **(Goodman et al., 2018; Kratochvíl et al., 2022; Rozell, 2022)**.

Need for Innovation

Given these challenges (among others), educators are encouraged to explore new, engaging strategies to help students develop strong citation and reference skills that will serve them throughout their academic careers and set them up for sustainable academic succes.

Long-term Impact(s)

In an increasingly digital and resource-limited world, developing strong foundational skills like citation and referencing prepares students for future academic challenges. Mastery of these skills supports success not just in university but throughout their professional careers.

NWU ®

THE
SOLUTION

Here, we'll focus on the **project approach** that guided the development of CiteSaga, highlighting how we combined Educational Design, Design Science Research (DSR), and Agile Design to create an effective educational tool. We'll walk through the iterative design cycles that allowed us to continuously refine CiteSaga, incorporating feedback and ensuring alignment with learning objectives. Additionally, we'll outline the key phases of development, from problem identification and concept creation to prototyping, evaluation, and final refinement.

Lance Bunt

Images made using **FOTOR**

COMBINING EDUCATIONAL DESIGN, DSR, AND AGILE DESIGN

Educational Design and DSR:
- CiteSaga uses Educational Design to create effective learning experiences and DSR to integrate practical solutions with theoretical development.

Key Features of Educational Design and DSR:
- Both methodologies emphasise iteration, feedback, and interdisciplinary collaboration to refine learning outcomes and address educational challenges.

Combining Design Approaches:
- Blending Educational Design, DSR, and Agile methods enables a user-centred, flexible development process that incorporates stakeholder feedback.

Agile Iterative Design Cycle:
- Agile design allows for rapid prototyping and adaptation through sprints, ensuring flexibility and responsiveness.
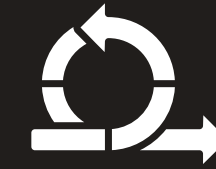
THE APPROACH

This mixed-method approach leverages the strengths of Educational Design, DSR, and Agile design to create a game that is practical, innovative, and responsive to stakeholder feedback.

Byron Bunt

Images made using **FOTOR**

NWU®

CYCLES FOR CITESAGA

NWU ®
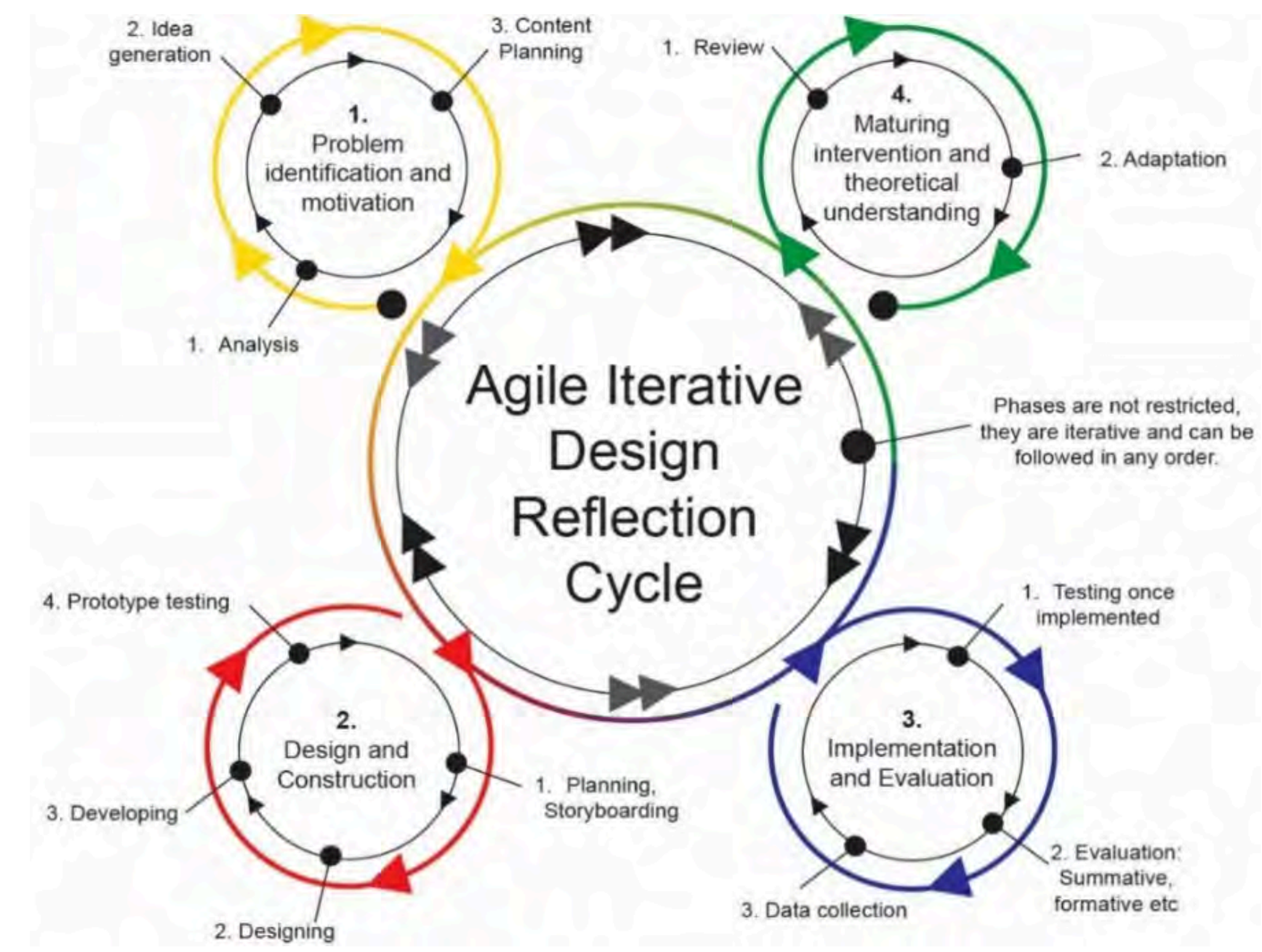
PHASES OF DEVELOPMENT

Context and Origins

Teaching citation is challenging and time-consuming. CiteSaga, part of NWU's Referella initiative, was developed to address this through serious game design.

Phase 2: Design / Construc.

Developed gameplay, mechanics, and components (e.g., boards, tokens). Used AI tools like ChatGPT and Fotor for rapid iteration of game components/narrative.

Phase 4: Maturation

Final phase involved refining based on feedback, theoretical understanding, and creating a conceptual framework to solidify learning outcomes and objectives.

Phase 1: Problem / Motivation

Identified citation struggles in higher education. Worked with educators and developers to design a game focused on academic writing, ethical scholarship, and citation skills.

Phases 3: Evaluation

Integrated game elements into prototypes for testing with students and other stakeholders. Feedback from play-testing refined gameplay mechanics and ensured alignment with educational goals.

NWU ®

DEV
OVERVIEW

Here, we'll focus on how CiteSaga was developed as a citation-focused educational game. The game features a rich narrative with fleshed-out characters, factions, and environments. Players assume roles within this world, navigating various quests that involve solving citation and referencing tasks. The gameplay revolves around players earning points by accurately applying citation styles to real-world dilemmas, making critical decisions, and overcoming citation-related obstacles, all within an engaging and interactive environment to reinforce academic key skills.

Lance Bunt

Images made using **FOTOR**

PEOPLE MAKE GAMES

Games are made by people. CiteSaga wasn't just an idea—it was built by a team of faculty, designers, and developers who worked together to solve the problem of teaching citation. We aligned the game's goals with the curriculum while navigating real-world constraints like time and budget. Collaboration was key to making it both educational and engaging.

Byron Bunt

Images made using FOTOR

NWU®

Stakeholder(s)	Role	Activities	Specialisations
Educators	Content Advisors	Curriculum alignment, learning objective definition	Subject matter expertise, pedagogy
Game Designers	Game Development	Concept design, rule creation, playtesting	Game design, mechanics, interaction
Graphic Designers	Visual Development	Artwork, component design, visual theme	Graphic design, illustration
Developers/Engineers	Production	Prototype creation, manufacturing coordination	Engineering, production
Project Managers	Coordination & Planning	Timeline management, resource allocation	Project management, organisation
Students	End Users	Playtesting, feedback provision	End-user experience
Investors	Financial Support	Funding, investment oversight	Finance, investment
Publishers/Distributors	Marketing & Distribution	Marketing, sales, distribution	Marketing, sales, logistics
Regulatory Bodies	Compliance Oversight	Ensure compliance with educational standards	Educational regulations, standards
Accessibility Experts	Accessibility Guidance	Ensure game is accessible to users	Accessibility design
Legal Advisors	Legal Oversight	Contracts, intellectual property, compliance	Legal regulations, contracts
Quality Assurance	Testing & Quality Control	Testing for quality and consistency	Quality control, testing

NWU ®

MECHANICAL FEATURES

Turn-based.

Players take turns completing a series of actions that include drawing cards, arranging citations, etc.

Card drawing.

Players draw from the Citation Deck to determine the elements (Author, Title, Date) required

Citation building.

Players place elements collected from various areas on the board, onto the citation card to attempt to accurately construct them

Verification.

The Crystal of Citation used to verify a citation's accuracy, gaining or losing points based

Character abilities.

Each character has unique abilities that affect gameplay, such as speeding up citation construction

Special events.

Event Cards introduce unexpected challenges or opportunities, adding an element of unpredictability

Scoring.

Players earn points

Rebuild.

Optional cooperative gameplay features

Byron Bunt

NWU ®

Game Title	Game Components & Description	Objective(s)
Error Quest	Mock academic papers with intentional errors and a deck of "Correction Cards".	Players identify errors in the paper, use "Correction Cards" to fix them, and earn points for accuracy and completeness.
Citation Swap	Card game with academic passages and citations.	Players swap and match correct citations with the given academic passages. The fastest correct matcher wins.
Source Showdown	Board game with various source types (books, articles, etc.) and citation style cards (APA, MLA, etc.).	Move around the board, draw source cards, and create correct citations based on the drawn style card.
Plagiarism Pursuit	Digital board game with plagiarism reports.	Players submit a mini essay, receive a simulated plagiarism report, and have to "correct" the issues on the board.
Integrity Quiz Whiz	Quiz board game with multiple-choice questions on academic integrity.	Answer questions to move forward. The goal is to reach the end first, demonstrating you're the "Integrity Whiz".
Paraphrase Party	Card game with original and paraphrased statements.	Players draw a card with an original statement and must provide a paraphrased version. Other players judge accuracy.
Ethics Escape Room	Physical or virtual escape room with scenarios on academic breaches.	Solve puzzles related to academic integrity to "escape" the room.
Tool Time Challenge	Board game with challenges based on referencing tools like Zotero.	Players must complete challenges based on tasks they'd do in citation tools. Collect points for speed and accuracy.
Annotate & Elevate	Deck of source cards and a timer.	Players pick a card, read the source, and have a limited time to write an annotated bibliography entry.
Citation Treasure Hunt	Adventure board game with "Source Islands".	Players navigate islands, collecting source details and avoiding the "Plagiarism Pirates". Earn treasure for each correctly cited source.
Integrity Island Workshop	Board game with event spaces related to lectures and workshops.	Players advance, land on event spaces, and answer questions or perform tasks based on lectures or workshops. Points for participation and correctness.

🎨 Images made using **FOTOR**   👤 Lance Bunt

EARLY CONCEPTS

NWU®

CITESAGA: A QUICK LOOK

Container / Box

Character Standees

Citation Cards

Player Dashboards

Seals

Tokens

Environment Cards

Lance Bunt

NWU ®

Fusty Swamps
The Soggy Manuscripts

Fiery Crags
The Inferno Annals

Wooded Pathways
The Parchment Forests

Budded Fields
Quill Meadows

Frigid Mountains
The Citehold Heights

Lance Bunt

Images made using **FOTOR**

GAME ENVIRONMENTS

NWU® | North-West University

CiteSaga
A Referella Game
Environmental Card

Stolen Mires
Ashenfolio

When you travel here add 1x ☐ token to your stock

Action (Optional):
Trade any 1x LVL 2 citation token for 1x LVL 3 citation token and add it to your stock.

Submerged City
Neutral

When you travel here add 1x ☐ token to your stock

Action (Optional):
Add 2x citation tokens from any level you do not have to your stock.

Serene Environs
Citehold

✋ PLAYERS MAY *NOT* BEGIN THE GAME HERE

When you travel here add 1x ☐ token to your stock

Action (Optional):
Complete a citation card challenge using a citation card in your hand. Claim any Grand Archive Shard reward(s) if correct.

ENVIRONMENT CARDS

NWU®

CiteSaga

A Referella Game

Citation Card

Citation Card

Patent and Standard

Instant Inkwell

Requires the following citation tokens:

For any scribe, mage, or avid writer, the Instant Inkwell is not just a tool but a testament to Taleterra's blend of magic and practicality. *WARNING: While the ink is non-toxic, consuming it may have odd effects. Keep away from children or small animals.

x1

eBook

Beast Meat Brews

Requires the following citation tokens:

Unlock the secrets of Beast Meat Brews, a guide to curing and preparing meats from Taleterra's magical creatures. Discover traditional recipes, preservation techniques, and the unique culinary arts that bring out the best in enchanted beast meats.

x2

Law

Dragonkin Decrees

Requires the following citation tokens:

Explore the Dragonkin Decrees, a codex of ancient laws shaping the lives of Taleterra's dragonkin. This tome covers territorial rights, honor codes, and the majestic traditions that guide the powerful and ancient dragonkin clans through their grand dominion.

x2

Religious Work

s of Celestial Lakes

Requires the following citation tokens:

Rites of the Celestial Lakes unveils ancient rituals of purification and wisdom, guiding readers to the crystalline waters where past, present, and future converge, offering visions of clarity and profound enlightenment.

x1

Media Source

Folk Fun

Requires the following citation tokens:

Immerse yourself in Fae Folklore Fun, a series of whimsical animated shorts seen through your crystal ball. Delight in the mischievous escapades of fae beings and explore their enchanting tales and magical mishaps from the fae realm.

x3

Conference Proceedi

enfo Hidden Agenda

Requires the following citation tokens:

Delve into the dark realms with Whispers in the Shadows, a meticulous collection of proceedings from the Ashenfolio's clandestine symposium. Revealing covert operations, arcane manipulations, and strategic plots.

x2

CITATION CARDS

Lance Bunt

Images made using **FOTOR**

CHARACTERS

- Princess Referella
- Prince Cite-A-Lot
- Tomebough, the Sage
- Sir Pendragraph
- Sir Duskwrit
- Queen Cinder Scroll
- EchoQuill, the Witch
- Thistlepage, the Linguist Ranger

17

NWU ®

The Ashenfolio

The Emberpage Diaspora

The World of Taleterra

The Kingdom of Citehold

The Tomeguard Territories

Lance Bunt

Images made using FOTOR

GAME FACTIONS

NWU ®

Kingdom of Citehold

Drive: Maintain order, promote justice, uphold referencing

Incentive: Ensuring a harmonious realm, being revered as truth-seekers

The Ashenfolio

Drive: Gain dominance, control narratives, amass power

Incentive: Reign supreme, control the narrative, be the dominant force

Grandeur
Prince Cite-A-Lot

Resolve
Ranger Thistlepage

Brilliance
Oracle Tomebough

Dread
EchoQuill

Virtue
Sir Pendragraph

Vibrance
Cinder Scroll

Malevolence
Sir DuskWrit

Radiance
Princess Referella

Emberpage Diaspora

Drive: Reclaim homeland, preserve their tales, resist control

Incentive: Return to ancestral lands, keep their stories alive, be free

Tomeguard Territories

Drive: Live in peace, uphold individual freedom, sustain lands

Incentive: Maintain independence, protect personal spaces, harvest riches

CHARACTER STANDEES

Images made using **FOTOR**

Byron Bunt

NWU ®

01

02

03

Game Objective:
Collect 5 Grand Archive Shards by solving citation challenges to win the game

Setup:
Choose a character, receive 3 citation cards and decide on the citation style (APA, MLA, etc.)
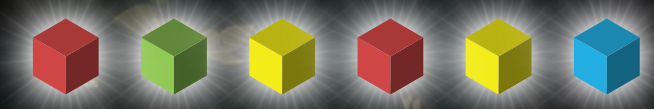
Gameplay:
Travel between environment cards / Arrange citation tokens in the correct sequence to solve challenges and earn shards

Radiance

Princess Referella

Sand & Summit

Patent and Standard

Instant Inkwell

HOW TO PLAY

Lance Bunt

GAME OUTCOMES

RECOGNISING CITATION STYLES: Teach players how to identify and apply the rules of the three citation styles (Harvard, APA, and Footnote) in a variety of academic contexts.

IMPROVING RESEARCH CAPABILITIES: Improve players' skills in locating, interpreting, and utilising academic papers, as well as to foster effective research strategies and information literacy.

ACADEMIC INTEGRITY PROMOTION: Develop an understanding of plagiarism, proper attribution, and the ethical principles that guide academic writing.

PROMOTING COLLABORATIVE LEARNING: Promote collaborative problem-solving and peer learning while also developing teamwork and communication skills in an academic setting.

IMPROVING CRITICAL THINKING SKILLS: Improve players' ability to evaluate and synthesise information from a variety of sources, while also recognising the relevance and credibility of academic literature.

PUTTING KNOWLEDGE INTO ACTION: Allow players to apply their theoretical knowledge of citation styles to real-world academic papers, bridging the gap between theory and practise.

ENCOURAGING SELF-ASSESSMENT AND REFLECTION: Encourage self-assessment and continuous improvement in scholarly endeavours by facilitating reflection on players' academic writing skills.

Images made using **FOTOR**

Byron Bunt

FINAL THOUGHTS

Our game can help students learn different citation and reference styles in a fun and interactive way. In a facilitated learning environment, the game can **reinforce** proper citation and improve students' practical skills. The game also includes referencing and citation decision-making challenges to encourage **critical thinking** and **problem-solving**. Students can, moreover, learn how to properly cite and reference sources by playing the game together. The bottom line is that a game combines intrinsic motivation, hands-on experience, and social engagement to help students **master academic integrity**. Combining gaming with academic skills can help students become more proficient and confident in citing and referencing sources. In conclusion, this project showcases the integration of agile design, educational design, and design science research (DSR) to create CiteSaga, a serious game focused on teaching citation and referencing. This approach, combined with AI tools like Fotor for rapid prototyping, highlights forward-thinking in educational game design. CiteSaga addresses a critical gap in teaching citation skills while setting a foundation for future research on the game's long-term impact, scalability, AI-enhanced features, and potential for collaborative learning. These directions will further validate its effectiveness and expand its role in educational technology.

NWU®

THANK YOU

FOR LISTENING!

Veruschka Pelser-Carstens 　　 　 Lance Bunt 　　　 Gordon Matthew 　　 Byron Bunt

REFERENCES

Adhikari, S. (2018) "Beyond Culture: Helping International Students Avoid Plagiarism", Journal of International Students, Vol. 8, pp 375-388.

Akhtar, M.K., De La Chevrotière, C., Tanzeeba, S., Tang, T. and Grover, P. (2020) "A Serious Gaming Tool: Bow River Sim for Communicating Integrated Water Resources Management", Journal of Hydroinformatics, Vol. 22, pp 491-509.

Altomari, L., Altomari, N. and Iazzolino, G. (2023) "Gamification and Soft Skills Assessment in the Development of a Serious Game: Design and Feasibility Pilot Study", JMIR Serious Games, Vol. 11, e45436.

Barianos, A.K., Papadakis, A. and Vidakis, N. (2022) "Content Manager for Serious Games: Theoretical Framework and Digital Platform", Advances in Mobile Learning Educational Research, Vol. 2, pp 251-262.

Barnabè, F., Giorgino, M.C., Guercini, J., Bianciardi, C. and Mezzatesta, V. (2017) "Engaging Professionals with Serious Games: The Lean Healthcare Lab at Siena University Hospital", Development and Learning in Organizations: An International Journal, Vol. 31, pp 7-10.

Beatty, J.E., Chen, Y.S. and Klein, B.D. (2021) "Games and Gamification in Business School Courses: Experiential Education that Creates Engagement and Flow", Decision Sciences Journal of Innovative Education, Vol. 19, No. 3, pp 170-172.

Bunt, L.R. (2020) Investigating Perceptions of Stakeholders' Positions, Activities and Specialisations at a Serious Game Interest Area (NWU, Vaal) (Master's Thesis). North-West University, Vanderbijl Park, South Africa.

Camilleri, M.A. and Camilleri, A. (2019) "Student-Centred Learning through Serious Games", In Proceedings of the 13th Annual International Technology, Education and Development Conference, (pp. 2043-2052),Valencia, Spain, March.

Carlier, S., Naessens, V., De Backere, F. and De Turck, F. (2023) "A Software Engineering Framework for Reusable Design of Personalized Serious Games for Health: Development Study", JMIR Serious Games, Vol. 11, e40054.

Checa, D., Miguel-Alonso, I. and Bustillo, A. (2021) "Immersive Virtual-Reality Computer-Assembly Serious Game to Enhance Autonomous Learning", Virtual Reality, Vol. 27, pp 3301-3318.

REFERENCES

Cohard, P. (2019) "Evaluation of Serious Game User Experience: The Role of Emotions", Electronic Journal of Information Systems Evaluation, Vol. 22, No. 2, pp 128-141.

Czauderna, A. and Guardiola, E. (2019) "The Gameplay Loop Methodology as a Tool for Educational Game Design", The Electronic Journal of e-Learning, Vol. 17, No. 3, pp 207-221.

De Sordi, J.O. (2021) Design Science Research Methodology: Theory Development from Artifacts. Springer Nature, Switzerland.

Delaney, J. (2022) "Minecraft and Playful Public Participation in Urban Design", Urban Planning, Vol. 7, No. 2, pp 330-342.

Den Haan, R.-J. and Van der Voort, M.C. (2018) "On Evaluating Social Learning Outcomes of Serious Games to Collaboratively Address Sustainability Problems: A Literature Review", Sustainability, Vol. 10, No. 12, e4529.

Dietrich, T., Mulcahy, R. and Knox, K. (2018) "Gaming Attribute Preferences in Social Marketing Programmes: Meaning Matters more than Rewards", Journal of Social Marketing, Vol. 8, No. 3, pp 280-296.

Dimitriadou, A., Djafarova, N., Turetken, O., Verkuyl, M. and Ferworn, A. (2021) "Challenges in Serious Game Design and Development: Educators' Experiences", Simulation & Gaming, Vol. 52, No. 1, pp 132-152.

Duff, A.H., Rogers, D.P. and Harris, M.B. (2006) "International Engineering Students—Avoiding Plagiarism Through Understanding the Western Academic Context of Scholarship", European Journal of Engineering Education, Vol. 31, No. 6, pp 673-681.

Duff, A.H., Rogers, D.P. and Harris, M.B. (2006) "International Engineering Students—Avoiding Plagiarism Through Understanding the Western Academic Context of Scholarship", European Journal of Engineering Education, Vol. 31, No. 6, pp 673-681.

xEscudeiro, P.S. and Campos, M.G. (2023) "A Gamified Approach to Enhance Environmental Sustainability Awareness and Responsibility". In A. Correia and M. Simões-Marques (Eds.), Handbook of Research on Decision- Making Capabilities Improvement with Serious Games pp. 343-363. Hershey, PA.: IGI Global.

Fahd, K., Miah, S.J., Ahmed, K., Venkatraman, S. and Miao, Y. (2021) "Integrating Design Science Research and Design Based Research Frameworks for Developing Education Support Systems", Education and Information Technologies, Vol. 26, No. 5, pp 4027-4048.

REFERENCES

Ferro, L.S., Sapio, F., Terracina, A., Temperini, M. and Mecella, M. (2021) "Gea2: A Serious Game for Technology- Enhanced Learning in STEM", IEEE Transactions on Learning Technologies, Vol. 14, No. 5, pp 723-739.

Fitzgerald, M. and Ratcliffe, G. (2020) "Serious Games, Gamification, and Serious Mental Illness: A Scoping Review", Psychiatric Services, Vol. 71, No. 2, pp 170-183.

Fokides, E., Atsikpasi, P., Kaimara, P. and Deliyannis, I. (2019) "Factors Influencing the Subjective Learning Effectiveness of Serious Games", Journal of Information Technology Education: Research, Vol. 18, pp 437-466.

Gao, W., Guo, Y. and Jiang, F. (2021) "Playing for a Resilient Future: A Serious Game Designed to Explore and Understand the Complexity of the Interaction Among Climate Change, Disaster Risk, and Urban Development", International Journal of Environmental Research and Public Health, Vol. 18, No. 17, e8949.

Goodman, X., Watts, J., Arenas, R., Weigel, R. and Terrell, T. (2018) "Applying an Information Literacy Rubric to First-Year Health Sciences Student Research Posters", Journal of the Medical Library Association, Vol. 106, No. 1, pp 108-112.

Hamzaoui, C. (2021) "Scrutinizing Algerian EFL Students' Challenges in Research Teaching and Writing", Hungarian Educational Research Journal, Vol. 11, No. 4, pp 478-488.

Huang, H., Ng, K.H., Bedwell, B. and Benford, S. (2021) "A Card-Based Internet of Things Game Ideation Tool for Museum Context", Journal of Ambient Intelligence and Humanized Computing, Vol. 12, pp 9229-9240.

Ifenthaler, D. and Yau, J.Y.-K. (2020) "Utilising Learning Analytics to Support Study Success in Higher Education: A Systematic Review", Educational Technology Research and Development, Vol. 68, No. 5, pp 1961-1990.

Iivari, J. (2020) "Editorial: A Critical Look at Theories in Design Science Research", Journal of the Association for Information Systems, Vol. 21, No. 3, pp 502-519.

Jääskä, E., Aaltonen, K. and Kujala, J. (2021) "Game-Based Learning in Project Sustainability Management Education", Sustainability, Vol. 13, No. 15, e8204.

Jaccard, D., Suppan, L., Sanchez, E., Huguenin, A. and Laurent, M. (2021) "The co.LAB Generic Framework for Collaborative Design of Serious Games: Development Study", JMIR Serious Games, Vol. 9, No. 3, e28674.

REFERENCES

Jayalath, J. and Esichaikul, V. (2022) "Gamification to Enhance Motivation and Engagement in Blended eLearning for Technical and Vocational Education and Training", Technology, Knowledge and Learning, Vol. 27, pp 91-118.

Jost, P. and Divitini, M. (2021) "Designing Analytic Serious Games: An Expert Affordance View on Privacy Decision-Making", In Proceedings of the Serious Games: Joint International Conference, JCSG 2021, (pp. 3-19), Virtual Event, January.

Krath, J., Schürmann, L. and Von Korflesch, H.F. (2021) "Revealing the Theoretical Basis of Gamification: A Systematic Review and Analysis of Theory in Research on Gamification, Serious Games and Game-Based Learning", Computers in Human Behavior, Vol. 125, e106963.

Kratochvíl, J., Abrahámová, H., Fialová, M. and Stodůlková, M. (2022) "Citation Rules Through the Eyes of Biomedical Journal Editors", Learned Publishing, Vol. 35, No. 2, pp 105-117.

Lamrani, R. and Abdelwahed, E.H. (2020) "Game-Based Learning and Gamification to Improve Skills in Early Years Education", Computer Science and Information Systems, Vol. 17, No. 1, pp 339-356.

Leendertz, V. and Matthew, G.D. (2022) "F-EMS Incorporated: A BCOM Mobile Serious Game to Simulate the Business Environment", In Proceedings of the 14th International Conference on Education Technology and Computers, (pp. 19-23), Barcelona, Spain, October.

Linderoth, J. and Sjöblom, B. (2019) "Being an Educator and Game Developer: The Role of Pedagogical Content Knowledge in Non-Commercial Serious Games Production", Simulation & Gaming, Vol. 50, No. 6, pp 771-788.

Mason, J. and Loader, K. (2019) "Using a Serious Game to Train Violence Risk Assessment and Management Skills", Simulation & Gaming, Vol. 50, No. 2, pp 124-135.

McKenney, S. and Reeves, T. (2018) Conducting Educational Design Research. Routledge, London.

McKenney, S. and Reeves, T.C. (2021) "Educational Design Research: Portraying, Conducting, and Enhancing Productive Scholarship", Medical Education, Vol. 55, No. 1, pp 82-92.

REFERENCES

Mittal, A., Scholten, L. and Kapelan, Z. (2022) "A Review of Serious Games for Urban Water Management Decisions: Current Gaps and Future Research Directions", Water Research, May, Vol. 215, e118217.

Moizer, J., Lean, J., Dell'Aquila, E., Walsh, P., Keary, A.A., O'Byrne, D., … and Sica, L.S. (2019) "An Approach to Evaluating the User Experience of Serious Games", Computers & Education, Vol. 136, pp 141-151.

Molle, D. & Huang, W. (2021) Bridging Science and Language Development Through Interdisciplinary and Interorganizational Collaboration: What Does it Take? Science Education International, Vol. 32, No. 2, pp 114-124.

Mor, Y., Cook, J., Santos, P., Treasure-Jones, T., Elferink, R., Holley, D. and Griffin, J. (2015) "Patterns of Practice and Design: Towards an Agile Methodology for Educational Design Research", In Proceedings of the Design for Teaching and Learning in a Networked World: 10th European Conference on Technology Enhanced Learning, ECTEL 2015, (pp. 605-608), Toledo, Spain, September.

Mueller, S., Soriano, D., Boscor, A., Saville, N.M., Arjyal, A., Baral, S., … and Kostkova, P. (2020) "MANTRA: Improving Knowledge of Maternal Health, Neonatal Health, and Geohazards in Women in Rural Nepal Using a Mobile Serious Game", Frontiers in Public Health, Vol. 8, e584375.

Neset, T.-S., Andersson, L., Uhrqvist, O. and Navarra, C. (2020) "Serious Gaming for Climate Adaptation—Assessing the Potential and Challenges of a Digital Serious Game for Urban Climate Adaptation", Sustainability, Vol. 12, No. 5, e1789.

Nilson, L.B. (2016) Teaching at its Best: A Research-Based Resource for College Instructors, 4th ed. John Wiley & Sons, Hoboken, NJ.

Ødegaard, N.B., Myrhaug, H.T., Dahl-Michelsen, T. and Røe, Y. (2021) "Digital Learning Designs in Physiotherapy Education: A Systematic Review and Meta-Analysis", BMC Medical Education, Vol. 21, No. 48.

Pelser-Carstens, V. (2022) "Developing a Serious Game Design Framework for Educational Tabletop Games with Digital Components" (PhD Dissertation). University of Eastern Finland, Joensuu.

Pelser-Carstens, V. and Matthew, G. (2023) "Conceptualizing the Educational Serious Game Design Space for Workshop Presentation", In Proceedings of the EdMedia + Innovate Learning 2023 Vienna, (pp. 806-816), Vienna, Austria, July.

REFERENCES

Peña Miguel, N., Corral Lage, J. and Mata Galindez, A. (2020) "Assessment of the Development of Professional Skills in University Students: Sustainability and Serious Games", Sustainability, Vol. 12, No. 3, e1014.

Perna, S. (2022) "The Design of Serious Games for Competency-Based Education" (PhD Thesis). University of Palermo, Palermo, Italy.

Plass, J.L. and Pawar, S. (2020) "Adaptivity and Personalization in Game-Based Learning". In J.L. Plass, R.E. Mayer and B.D. Homer (Eds.), Handbook of Game-based Learning pp. 263-281. Cambridge, Massachusetts: The MIT Press.

Platz, L., Jüttler, M. and Schumann, S. (2021) "Game-Based Learning in Economics Education at Upper Secondary Level: The Impact of Game Mechanics and Reflection on Students' Financial Literacy". In C. Aprea and D.

Ifenthaler (Eds.), Game-based Learning Across the Disciplines pp. 25-42. Switzerland: Springer Nature.

Power, J., Lynch, R. and McGarr, O. (2020) "Difficulty and Self-Efficacy: An Exploratory Study", British Journal of Educational Technology, Vol. 51, No. 1, pp 281-296.

Rodríguez-Rivera, P., Manzano-León, A., Dapía Conde, M.D. and Rodríguez-Ferrer, J.M. (2023) "Unleashing Creativity and Cooperation: A Qualitative Case Study on Designing Digital Breakouts for Social Education Degrees", Societies, Vol. 13, No. 9, e203.

Rosa, M., Gordo, S., Sousa, M. and Pocinho, R. (2021) "Critical Thinking, Empathy and Problem Solving Using a Modern Board Game: A Learning Experience Valued by Physical Therapy Students", In Proceedings of the Ninth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'21), (pp. 624-628), Barcelona, Spain, October.

Rozell, D.J. (2022) "Citation Styles of References: A Weakness of Academic Publishing", European Science Editing, Vol. 48, e79945. Sassa, A.C., De Almeida, I.A., Pereira, T.N.F. and De Oliveira, M.S. (2023) "Scrum: A Systematic Literature Review", International Journal of Advanced Computer Science and Applications, Vol. 14, No. 4, pp 173-181.

Smith, J., Sears, N., Taylor, B. and Johnson, M. (2020) "Serious Games for Serious Crises: Reflections from an Infectious Disease Outbreak Matrix Game", Globalization and Health, Vol. 16, No. 18.

REFERENCES

Surya, E. and Syahputra, E. (2017) "Improving High-Level Thinking Skills by Development of Learning PBL Approach on the Learning Mathematics for Senior High School Students", International Education Studies, Vol. 10, No. 4, pp 12-20.

Sutherland, J. and Schwaber, K. (2011) "The Scrum papers: Nut, Bolts and Origins of an Agile Framework." ScrumInc., Cambridge, MA. Van Beek, L., Milkoreit, M., Prokopy, L., Reed, J.B., Vervoort, J., Wardekker, A. and Weiner, R. (2022) "The Effects of Serious Gaming on Risk Perceptions of Climate Tipping Points", Climatic Change, Vol. 170, No. 31.

Vom Brocke, J., Hevner, A. and Maedche, A. (2020) "Introduction to Design Science Research". In J. Vom Brocke, A. Hevner and A. Maedche (Eds.), Design Science Research. Cases (Progress in IS) pp 1-13. Switzerland: Springer Nature.

Wang, C. and Huang, L. (2021) "A Systematic Review of Serious Games for Collaborative Learning: Theoretical Framework, Game Mechanic and Efficiency Assessment", International Journal of Emerging Technologies in Learning, Vol. 16, No. 13, pp 88-105.

Westera, W. (2019) "Why and How Serious Games can Become Far More Effective: Accommodating Productive Learning Experiences, Learner Motivation and the Monitoring of Learning Gains", Educational Technology & Society, Vol. 22, No. 1, pp 59-69.

Young, M.F., Slota, S.T., Cutter, A.B., Jalette, G.C., Mullin, G., Lai, B., … and Yukhymenko, M. (2012) "Our Princess is in Another Castle: A Review of Trends in Serious Gaming for Education", Review of Educational Research, Vol. 82, No.1, pp 61-89.

Yu, Z., Gao, M. and Wang, L. (2021) "The Effect of Educational Games on Learning Outcomes, Student Motivation, Engagement and Satisfaction", Journal of Educational Computing Research, Vol. 59, No. 3, pp 522- 546.

Zhang, C. and Lu, Y. (2021) "Study on Artificial Intelligence: The State of the Art and Future Prospects", Journal of Industrial Information Integration, Vol. 23, e100224.