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INNOFEST 2024

INTERNATIONAL INNOVATION FESTIVAL

INNOVATION : CHALLENGING LIMITS,
UNLOCKING POSSIBILITIES



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INTERNATIONAL INNOVATION FESTIVAL 2024 (INNOFEST 2024)
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Foreword

The world is in a constant state of flux. Technological advancements, societal shifts, and environmental concerns are pushing boundaries and demanding new solutions. In this dynamic landscape, innovation is not a luxury, but a necessity. It is the engine that propels progress and shapes a brighter future.

These e-proceedings are a testament to the human spirit's unwavering pursuit of innovation. They capture the brilliant ideas and groundbreaking work presented at International Innovation Festival 2024 (INNOFEST 2024), a platform where leading minds come together to share their knowledge and experiences.

Within these pages, you will find a diverse spectrum of innovations, each tackling a unique challenge. From advancements in Agro and Aquaculture Technologies to groundbreaking approaches in Teaching and Learning to name a few, this collection showcases the depth and breadth of human ingenuity.

The true value of these e-proceedings lies not just in the individual innovations presented, but in the cross-pollination of ideas they facilitate. By delving into these diverse perspectives, we can spark new collaborations, identify unforeseen opportunities, and accelerate the pace of progress.

This e-publication is not merely a record of past achievements; it is a springboard for future endeavors. It serves as an inspiration to researchers and changemakers to push the boundaries of the possible. It ignites a passion for finding solutions that improve our lives, our communities, and our planet.

Embracing the theme of this festival, “Innovation: Challenging Limits, Unlocking Possibilities”, let the innovation presented here challenge your assumptions, spark your curiosity, and ignite your own creative spark. Together, let us build a future where innovation flourishes, shaping a world that is more sustainable, equitable, and prosperous for all.

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THE NEW ERA OF TEACHING AND LEARNING BUSINESS EDUCATION WHEEL OF FORTUNE

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ABSTRACT

Effective methods for developing these skills include game-based learning to overcome conventional theory learning in the classroom. Numerous aspects of the use of a business wheel, techniques for evaluating their efficacy, and the impact of learning understanding on students. To ascertain the motivation and appeal of pupils, a survey was done on the outcomes of applying the business wheel and adapting online tools and games to semester one operational business students. This presents creating and modifying an innovative educational instrument, the Business Wheel Interactive Learning Tool, to improve business-related learning processes. The flexible and multifaceted platform combines several business principles into an interactive and captivating wheel structure. The flexible structure of this program enables students to explore several fields of business, including marketing, finance, operations, and strategy. The tool integrates multimedia components to offer a thorough and engaging learning encounter. This feature allows the tool to customize the learning experience for each student, considering their unique progress, preferences, and areas for development. The technology adapts the content and difficulty levels based on ongoing assessment and feedback, providing students with a personalized and optimized learning experience. Furthermore, it adopts a cooperative learning methodology by integrating characteristics enabling peer interaction. In conclusion, this emphasizes the potential influence of the modification on business education. The application promises to improve student engagement, comprehension, and retention of business concepts by addressing students' learning needs. The adaptability mirrors the present tendencies in educational technology and establishes it as a progressive answer for the changing field of business education.

Keywords: games-based learning, educational, business wheel, student learning, operational business

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1. Introduction

Presenting the Education Business Wheel helps for Education: Promoting Creativity and Achievement. Imagine a system that makes it easier for communities, businesses, and educational institutions to collaborate effectively to spur innovation, open doors, and provide students with the tools they need to succeed in the twenty-first century. That is the Business Wheel for Education's power.

The Business Wheel for Education expands on conventional teaching, learning, and support approaches. The Business Wheel for Education expands on traditional

educational methods in the following ways: Creating a dynamic ecosystem of knowledge and support by bringing together educators, companies, legislators, and community leaders is known as "fostering collaboration. Encouraging hands-on learning: Including experiences and problems in the curriculum helps students get ready for the dynamic workforce.

The Business Wheel for Education expands on conventional educational approaches in the following ways: Creating a dynamic ecosystem of learning and support by bringing together educators, companies, legislators, and community leaders is known as "fostering collaboration. Encouraging hands-on learning: Including experiences and problems in the curriculum helps students get ready for the dynamic workforce.

Developing knowledge and abilities that tackle global issues like social inequality and climate change is critical to building a sustainable future. The five main complement one another and function as a whole: Education: Exceptional instruction and learning opportunities that are future-focused, interesting, and relevant. Program: The proactive involvement of business operation students for hands-on learning; Policy: Organisation initiatives that encourage cooperation and creativity in the classroom. Technology: Using technology to generate engaging educational experiences, connect students with professionals, and personalize learning.

The Business Wheel for Education offers a win-win situation for all the stakeholders.
Student: Gain valuable skills and experience in learning business operations. Lecturer: Contribute more innovative teaching and learning styles in the education system.
Additionally, incorporating online games and technology into the business wheel adaption is a first step towards transitioning from traditional classroom instruction to more interactive instruction utilizing technology(Lai et al., 2022) and educational games for theoretical subjects.
The paper outlines the results of a simple survey that assesses the effectiveness of a business wheel usage with the adaptation of other instructional approaches in the business program of the sustainable development idea. A survey assessed teaching material and methodologies: a wheel, examination of text, presentation, and computer game. The study aimed to determine whether simulation games could improve students' understanding of complex problems and concepts more effectively than traditional theory teaching techniques in an environmentally friendly development course. The subsequent parts delineate the methodology employed in the conducted survey, expound upon its findings, provide a discourse on interpreting the results, and engage with the aim of the studies.
The aim of the study was to

i. To identify the understanding level of the business wheel application among students.

1.1 Theory

The search results do not specifically list the essential elements of the education wheel. But considering the background of business education and the Flipped Learning Wheel (FLW) that was referenced in:

1. Integration of Topic Areas: To give students a comprehensive educational experience, the education wheel combines several topics, including business introduction, business support, government management, communications, and critical thinking.
2. Active Learning Strategies: The education wheel places a strong emphasis on active learning techniques, including team learning, thorough exercises, and presentations, as well as simulation games(Van Wyk, 2013) and video games(Liu et al., 2020a).
3. Technology Integration: The education wheel is integrated with technology to improve learning. It used the wheel of knowledge from the theory class to mobile business student classrooms.
4. Continuous Assessment: The education wheel incorporates ongoing evaluation techniques, such as quizzes, near games, puzzle presentations, and jam boards, to track students' advancement and guarantee their comprehension of the subject matter.

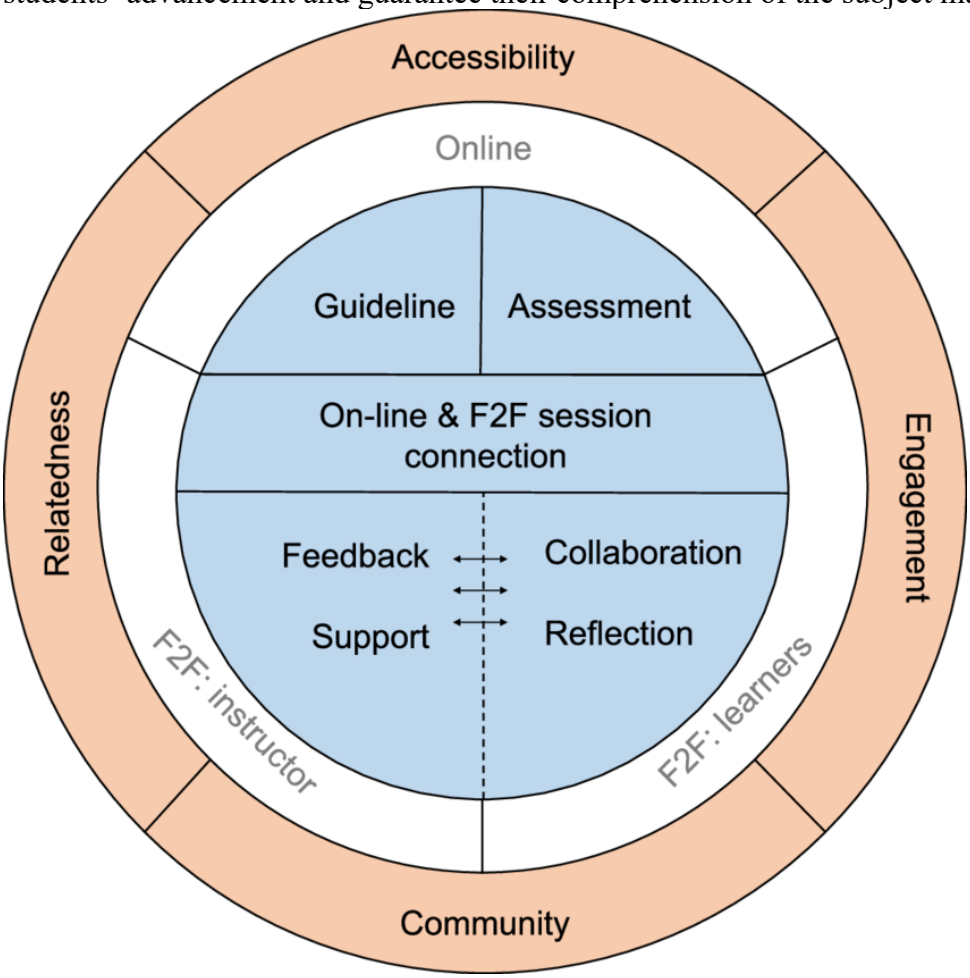


Figure 1.0: Flipped Learning Wheel (FLW): components and principles.

2. Literature review

Education Wheel

The education wheel, sometimes called the teaching wheel or learning wheel, is a visual aid that combines various instructional techniques, technology, and tactics to improve teaching and learning outcomes. This cutting-edge resource acts as a thorough

manual for teachers, offering an organized framework that makes it easier to include a variety of instructional strategies and materials.

The education wheel evolved in reaction to the changing nature of education, which was prompted by technological improvements and an increasing awareness of the need for various educational styles. Usually, the wheel is divided into sections reflecting a different facet of the teaching and learning process. These sections could cover technological integration, pedagogical methodologies, assessment strategies, and cooperative learning.

One of the primary objectives of the education wheel is to promote a holistic approach to education, encouraging educators to move beyond traditional teaching methods and embrace a more dynamic and inclusive instructional model. By incorporating elements from various educational theories and practices, the wheel aims to engage students better, accommodate their varied learning preferences, and encourage a more thorough comprehension of the subject.

This education wheel also highlights technological integration as a critical element of contemporary education. To improve the educational process and make education more accessible and flexible to meet the demands of modern learners, it promotes the use of digital tools, online resources, and interactive platforms(Haleem et al., 2022).

The education wheel is a flexible and customizable visual roadmap for educators, guiding and creating engaging learning environments. The education wheel is a helpful instrument for instructors who wish to be innovative and flexible in the face of ever-changing teaching methodologies. (Shattuck, 2021).

Prior studies have examined the utilization of Bloom's taxonomy in the educational field, specifically about various strategies for mathematics learning. (Vlasenko et al., 2023), Spinning Wheel Games, Writing procedural in English (Rachmaida, 2022), Pedagogical wheel(Allan Carrington, 2016). English spinning wheel in Chibogo Indonesia(Prasetyo et al., 2022), Spinning wheel in Qawaid Nahwu Indonesia(Huda, 2020), games-based learning for physics subject(Palaoag et al., 2016)

Games

Research and interest in the use of games in education are expanding. Games offer dynamic and captivating environments in various settings that can enhance learning(Poole et al., 2014). The articles "Digital Game-Based Learning" by Prensky, "This is Not a Game" by McGonigal, and "Using Games to Enhance Learning and Teaching" by Whitton and Moseley shed light on how games can be helpful to teaching and learning aids.

An overview of digital game-based learning is provided in Prensky's essay. He highlights advantages, including improved motivation and engagement, hands-on learning, and immediate student feedback. According to Prensky, gaming complements the learning styles and ways of today's "digital native" pupils(Moseley, 2012).

By captivating the participants, games foster and promote the exploration of tactics or behaviors that would otherwise be disregarded in real-life situations due to the potential for failure. Compared to conventional teaching techniques, the prominent characteristic of simulation games is the emphasis on experiential learning. During the post-game debriefing, the decisions made by the game participants, their reasoning, the structures of the systems, and other elements that influenced the finished products are capable of being assessed and conversed upon.

This makes it possible for everyone involved to fully comprehend the situation, its origins, and its results. (Dubel, 2015). In 2007, a discussion took place regarding the use of business games as a means to bridge the gap between theory and practice. These games incorporate four forms of knowledge: factual, conceptual, procedural, and meta-cognitive(Ben-Zvi & Carton, 2007).

Business Education Wheel

The business education business wheel is adapted to integrate various subject areas and develop students' abilities to apply business content in an integrated context. The wheel is designed to emphasize breadth and understanding over depth and exposure, with the learning processes of team learning, team instruction, exercises and presentations, simulation games, and assessment tests aimed at skill development and conceptual understanding. The knowledge base is confined to business introduction, support, management, communications, and critical thinking. The education wheel is an innovative, integrative, and experiential learning environment that matches the needs of the new workplace while simultaneously focusing on fostering accuracy. The business wheel was created with Quizzes, Nearpod, Jam board, and Ed Puzzle games for the first pilot project. It demonstrates that another active learning technique that educational technology may support is Quizzes. Using social media, interactive whiteboards, and other technologies, students can start working on a project in class and easily collaborate, discuss, and bounce ideas off one another.(Haleem et al., 2022).

3. Methodology

This innovation focuses on interactive learning through the dream wheel. This tool uses 5mm PVC foam. Semester 1 Students in the Business Operations Program (SPP) can use this game to answer training in infographics. Tradition, like a telegram note, is the primary method of traditional learning. One of the advantages of this learning is that it is game-shaped, which makes it easier for students to understand and expose SPP1 Students to the Business Development course.

We used a 5mm PVC foam material to create the business wheel. To begin, we have selected four online platforms for children's learning. These platforms are quizzers, Nearpod, Edpuzzle, and Jamboard. By incorporating these online learning materials, we aim to enhance the interactivity and creativity of teaching and learning, departing from traditional methods. The wheel is a pilot test to organize its operations for Semester 1 Business Operational students. Izzati (2016) asserted that spinning wheel games can be created using a wooden board, other tools, and online resources (Rachmaida, 2022).

The study was conducted in Bentong Community College with the Business Operational program; 11 students made up the sample. Participants ranged in age from eighteen to twenty. Along with the most basic business wheel and online game apps

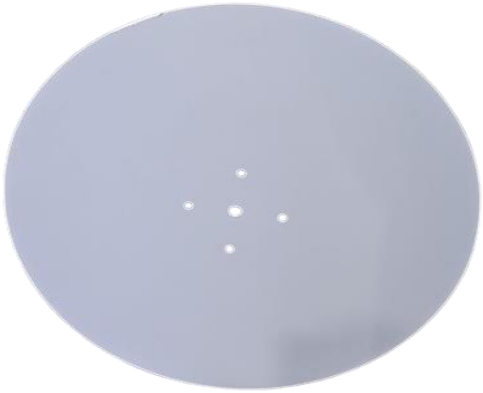
created by educators and students to fit the requirements of the curriculum and the subjects covered, the study group was instructed through business wheel unique game techniques. Non-probability convenience sampling was employed in the study carried out at Bentong Community College with the Business Operational program. Rather than using random selection approaches, this strategy chooses volunteers based on their easy accessibility and availability to the researcher. In this instance, the 11 students who participated in the study were picked since the college's Business Operational program could easily reach them. The age range of the participants, which reflected a particular demographic within the college community, was eighteen to twenty. In educational contexts where researchers have limited resources and time, non-probability convenience sampling is frequently used(Uma Sekaran & Bougie, 2016).

4. Data Collection Technique

How To Use Business Wheel

Stage 1

This innovation is formed by using Business Wheel Supplies
Step 1: Provide PVC Foam Board 5mm



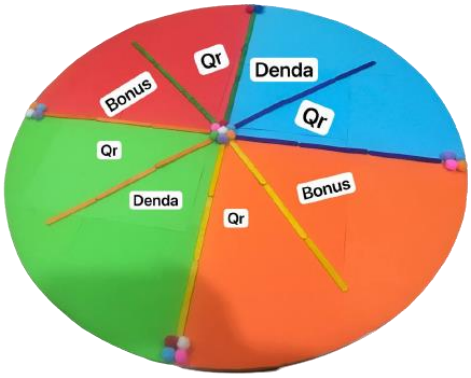
Step 2: Install foam board



Step 3: Prepare a spin cycle



Step 4: Inserting elements in each cycle





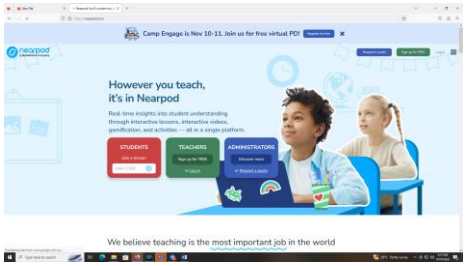
Stage 2

Developing the online games

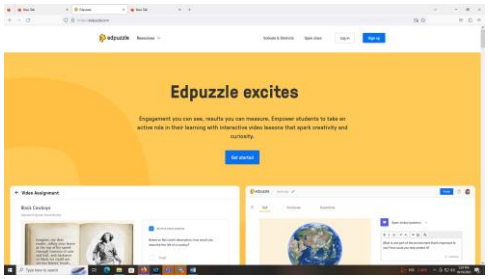
Quizizz



Near pod



Edpuzzles



Jamboard



Students will spin the Business Wheel and be given the access link to this application and access from all mobile phones.

5. Discussion of analysis and findings

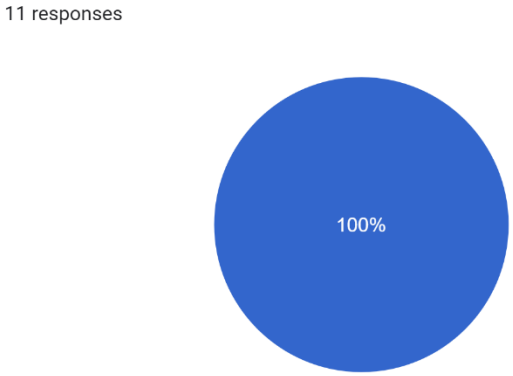
A substantial portion of contemporary research in business wheel game-based learning is dedicated to investigating the potential of virtual reality. (De La Asuncion Pari-Bedoya et al., 2023) and mobile technologies(Bharucha, 2018). One of the advantages of using online education technologies is the ability to monitor and control the educational process directly and its results with the active participation of a teacher, irrespective of the actual location.

The study conducted by the authors utilized a gaming environment created using the most basic and easily accessible educational game technology. It also incorporated components of online learning, with a focus on analyzing students' activity within the academic game. Technological advancements offer several advantages, including student preference, personalized teaching methods, gamification, immersive learning experiences, improved engagement, and teacher-friendly tools(Sheela, 2022).

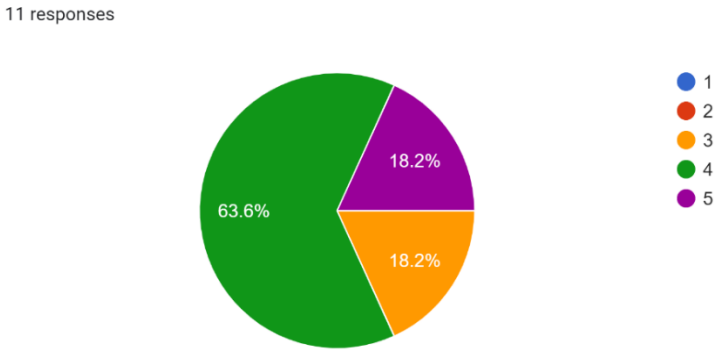
Research Finding

The following study issues are addressed by the findings: Does the Spinning Wheel Game Help Students Get Better at Understanding Business Development? Subject semester 1. The data is presented in the form of graphs and survey analysis. The Graph below represents the analysis summary:

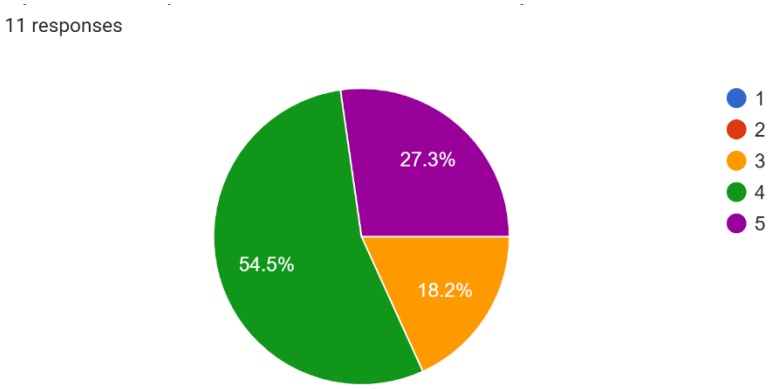
1. The business wheel helps in learning development.



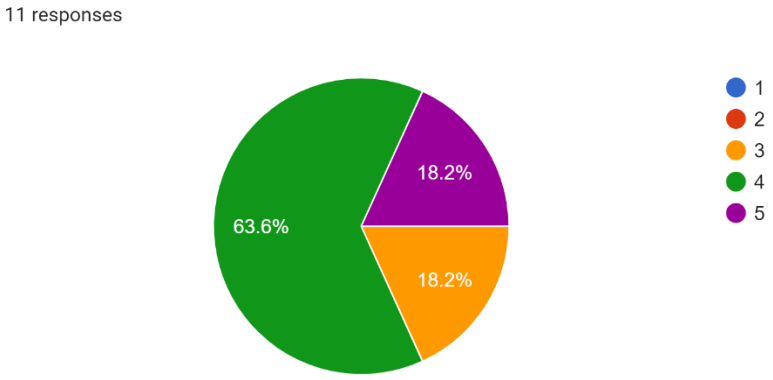
2. The business wheel is an interactive learning tool.



3. The business wheel is understandable to learners



4. The business wheel presents all the infographics element



Learners are instructed to spin to receive a new theme through online games. After that, students will answer the question given on the chosen platform. The correct answer will be given a small gift prepared by the team. It has been found that using this spinning device could assist pupils' understanding of the topic of business development. As a result, spinning can be utilized as a game to increase student understanding of the theory subtopic, add interest to the classroom, and test their critical thinking skills.

Before commencing the game, participants must ensure they have a mobile readily available to access the game via the internet. Additionally, they need to answer the topics acquired during gameplay. Subsequently, each person will be assigned a topic to compose an answer. Based on the outcomes of the game of spinning wheels' rotation. This game is quite accessible and straightforward to play. Players must initially establish the order personally, or the group will take turns spinning the topic of the business operation in semester 1.

Discussion

The Wheel of Fortune game is adapted to this game. The game uses different types of cards and number areas to symbolize each location. According to Jaelani's statement in Izati (2016: 53), a spinning wheel is an object that moves, changes direction, turns, or gets about. A spinning wheel is a circular item capable of generating rotational motion or altering its direction. To put it simply, a spinning wheel is anything round that has the ability to rotate. Aulia (2020) discussed the benefits of the wheel of fate, suggesting that student engagement might increase if they participate in the spinning wheel game.

This medium is an excellent resource for preparing for examinations. Students can improve their memory and cognitive flexibility. Therefore, apply your acquired knowledge to discover resolutions for various problems. According to the opinions mentioned earlier, the spinning wheel game's main advantage is its ability to convert effectively into a powerful element that enhances the game's excitement and serenity when utilized for instructional purposes. Bafadel references Aulia's work (2019:7). The Spinning Wheel Game exhibits the subsequent imperfections, being enumerated as follows: The activity requires significant engagement time. Teachers need additional time, room, and resources.

Nevertheless, the spinning wheel in this study has a distinct susceptibility compared to the one previously discussed. The spinning wheel game played online has several disadvantages: When attempting to utilize the internet, it is possible to encounter occasional difficulties. Accessibility necessitates the presence of wifi, a laptop, or a smartphone (Ubben et al., 2023).

6. Conclusion and future research

The study's findings support the goal of utilizing the business wheel in the educational process and introducing educational games as learning materials accessible on mobile devices for business operation students. Every study participant strongly desired to keep studying with game-based learning. The study group's members did not express disinterest in the learning process; all students provided accurate responses in 100% of the cases. It was shown that the business wheel has a beneficial effect on learning quality.

According to the study findings, learning content incorporating a business wheel based on the browser online games accessible on computer and mobile devices for students is a viable approach to the learning process. The study is limited in scope as it solely focuses on wheel-based education and explicitly targets students in business operations. The research centers on using the business wheel and the efficacy of questionnaires developed by students, which are then analyzed using graph-based performance measures. The business wheel is an educational innovation developed during the literature study. However, it should be noted that the review's findings were somewhat subjective since they relied on personal judgments and interpretations from earlier research. No questionnaires were repeated during the studies that were conducted.

Both present compelling arguments for well-thought-out games as potentially valuable resources for skill development, topic instruction, student motivation, and even

problem-solving in the real world. They provide educators interested in experimenting with and utilizing games in their instruction with theoretical underpinnings and helpful advice.

It is recommended that future research endeavors enhance this research methodology by incorporating more quantitative analysis, a longitudinal investigation, an experimental inquiry, and action research within the context of a field study. Additional features of the business wheel, such as pillars, engagement of teachers and students, teaching methodology, strategic deployment, organizational culture, student customer value, and tools, should be practically utilized.

Further implementation and integration of business wheel adaption and utilization in teaching and learning in other institutions should be thoroughly examined, enhanced, and maybe validated through measures in different study scenarios. Subsequent investigations to confirm the findings and evaluate the Business Wheel Interactive Learning Tool's broader applicability:

Various Educational Environments:
Repeat the study with students enrolled in graduate-level business education programs and high school pupils. Examine whether the Business Wheel's fundamental ideas apply to other academic disciplines by using it in non-business domains like engineering and the humanities. In adult education or vocational training programs with a company development focus, test the instrument such studies by (Chen, 2023).

Comparative Evaluation:
Examine how well the Business Wheel and conventional teaching techniques work with the same group of students. Compare the Business Wheel to other available educational technology tools for learning about business development, such as studies (Liu et al., 2020).

Concentrate on Particular Learning Goals:
Future research should concentrate on specific learning objectives, like the ability to make decisions, solve problems in the context of business development, or retain essential concepts such as studies (Kutun & Schmidt, 2019).

Long-Term Research:
Conduct case study research to monitor the Business Wheel's long-term effects on students' job achievement and business growth abilities.
Worldwide Usage: To determine whether the instrument is globally applicable, replicate the study in other nations with various corporate cultures and educational systems such studies (Noy et al., 2021).

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