


THE USE OF QUIZ CREATOR SOFTWARE AS AN EDUCATIONAL TOOL IN PROFESSIONAL LEARNING ENVIRONMENTS

O USO DO SOFTWARE CRIADOR DE QUIZ COMO FERRAMENTA EDUCACIONAL EM AMBIENTES DE APRENDIZAGEM PROFISSIONAL

EL USO DEL SOFTWARE QUIZ CREATOR COMO HERRAMIENTA EDUCATIVA EN ENTORNOS DE APRENDIZAJE PROFESIONAL

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ABSTRACT

Technology has become an indispensable ally in education, especially for the digital generation, which demands active and interactive methodologies. This study investigates the applicability of Quiz Creator, an online real-time question-and-answer software, as a tool to optimize the teaching and learning process in a vocational education context. The action research was conducted with young apprentices at SENAC – Ponta Grossa Unit, in the Commercial Professional Apprenticeship in Supermarket Services course, aiming to assess how gamification can impact content assimilation regarding customer service. The methodology involved dividing students into groups, who engaged in readings, seminars, and the creation of interactive quizzes on the covered topics. The activity culminated in a competition among teams, encouraging active participation and quick thinking. The results showed increased engagement, collaboration, and content retention, with progressive improvement in students' performance throughout the quiz stages. It was observed that the use of ICTs promotes meaningful learning and transforms the educational environment, making it more engaging and efficient. The study reinforces the potential of digital tools to innovate in vocational education, providing a dynamic and stimulating learning experience.

Keywords: Glucagon-like peptide-1 receptor agonists. Dental anesthesia. Anesthesia. Dentistry.

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RESUMO

A tecnologia tornou-se uma aliada indispensável na educação, especialmente para a geração digital, que demanda metodologias ativas e interativas. Este estudo investiga a aplicabilidade do Quiz Creator, um software online de perguntas e respostas em tempo real, como ferramenta para otimizar o processo de ensino e aprendizagem em um contexto de educação profissional. A pesquisa-ação foi realizada com jovens aprendizes do SENAC – Unidade Ponta Grossa, no curso de Aprendizagem Profissional Comercial em Serviços Supermercadas, com o objetivo de avaliar como a gamificação pode impactar a assimilação de conteúdos sobre atendimento ao cliente. A metodologia envolveu a divisão dos alunos em grupos, que se envolveram em leituras, seminários e na criação de quizzes interativos sobre os temas abordados. A atividade culminou em uma competição entre as equipes, incentivando a participação ativa e o raciocínio rápido. Os resultados demonstraram aumento do engajamento, da colaboração e da retenção do conteúdo, com melhora progressiva do desempenho dos alunos ao longo das etapas do quiz. Observou-se que o uso das TICs promove uma aprendizagem significativa e transforma o ambiente educacional, tornando-o mais envolvente e eficiente. O estudo reforça o potencial das ferramentas digitais para inovar na educação profissional, proporcionando uma experiência de aprendizagem dinâmica e estimulante.

Palavras-chave: Agonistas do receptor do peptídeo semelhante ao glucagon-1. Anestesia odontológica. Anestesia. Odontologia.

RESUMEN

La tecnología se ha convertido en un aliado indispensable en la educación, especialmente para la generación digital, que exige metodologías activas e interactivas. Este estudio investiga la aplicabilidad de Quiz Creator, un software en línea de preguntas y respuestas en tiempo real, como herramienta para optimizar el proceso de enseñanza y aprendizaje en un contexto de formación profesional. La investigación-acción se realizó con jóvenes aprendices de SENAC – Unidad Ponta Grossa, en el curso de Aprendizaje Profesional Comercial en Servicios de Supermercado, con el objetivo de evaluar cómo la gamificación puede impactar la asimilación de contenido sobre atención al cliente. La metodología consistió en dividir a los estudiantes en grupos, quienes participaron en lecturas, seminarios y la creación de cuestionarios interactivos sobre los temas tratados. La actividad culminó con una competencia entre equipos, fomentando la participación activa y la agilidad mental. Los resultados mostraron un mayor compromiso, colaboración y retención de contenido, con una mejora progresiva en el rendimiento de los estudiantes a lo largo de las etapas del cuestionario. Se observó que el uso de las TIC promueve el aprendizaje significativo y transforma el entorno educativo, haciéndolo más atractivo y eficiente. El estudio refuerza el potencial de las herramientas digitales para innovar en la formación profesional, ofreciendo una experiencia de aprendizaje dinámica y estimulante.

Palabras clave: Agonistas del receptor del péptido similar al glucagón-1. Anestesia dental. Anestesia. Odontología.

INTRODUCTION

The rapid advancement of digital technologies has significantly reshaped the educational landscape, compelling institutions, educators, and learners to reconsider traditional teaching and learning methods. In the 21st century, the integration of technology into educational settings is no longer a passing trend but a fundamental necessity to meet the evolving demands of a knowledge-based society. Today's students—often referred to as digital natives—require pedagogical approaches that align with their everyday experiences, characterized by constant connectivity, interactivity, and immediate access to vast information sources.

The incorporation of technology into the school environment has increasingly emerged as a transformative methodological approach, fostering new ways of teaching and learning that strengthen students' long-term knowledge retention. The use of innovative tools in content presentation not only diversifies pedagogical strategies but also enhances the relevance and applicability of instructional content, making learning more meaningful and aligned with students' real-life contexts (Scussel, 2018).

Within this framework, the educational role of technology has expanded well beyond administrative support or content transmission, becoming a powerful ally in promoting student engagement, autonomy, and deeper learning. The integration of digital tools such as interactive quizzes, educational games, collaborative platforms, and artificial intelligence helps create dynamic learning environments where students actively construct knowledge. These technologies also support formative assessment, provide immediate feedback, and facilitate differentiated instruction, aligning with the principles of student-centered learning.

As information becomes widely accessible, the role of the teacher must evolve from that of a knowledge transmitter to a learning facilitator. Daher (2008, p. 6) underscores the need for educators to reconfigure their roles, encouraging students to take ownership of their learning processes. This pedagogical shift fosters the development of a more dynamic and innovative educational environment, one that is better aligned with the realities of the digital era.

In today's educational journey, teachers are expected to structure lessons in ways that ensure meaningful learning. Moreira (2012, p. 2) highlights that the interaction between prior knowledge and new information allows students to consolidate learning with greater cognitive depth and stability. Thus, integrating technological experiences that are already

part of students' everyday lives into formal education not only enhances engagement but also encourages active participation in the learning process.

Nevertheless, despite the widespread availability of digital resources, many educators still face challenges when attempting to implement innovative teaching practices. This is particularly evident in vocational education settings, where preparing students for the labor market involves not only technical competencies but also the development of critical thinking, problem-solving, and adaptability. Educators must therefore embrace new roles—as mediators of knowledge and facilitators of learning—capable of designing hybrid and flexible learning experiences that bridge theoretical knowledge and practical application.

In this regard, the integration of digital technologies into the classroom has proven to be an effective strategy for engaging students and fostering more meaningful learning experiences. The use of applications, computers, internet tools, and digital platforms—such as Quiz Creator, Kahoot, and Quizizz—offers a playful and innovative approach to content delivery, helping students absorb and retain information more effectively.

This paper explores the pedagogical potential of the *Quiz Creator* application as a tool for enhancing teaching and learning in vocational education. It examines how interactive quizzes can enrich classroom dynamics, stimulate active participation, and reinforce content comprehension. By analyzing a practical case involving young apprentices, the study aims to demonstrate how digital tools can be seamlessly integrated into lesson planning to support a transformative, student-centered educational approach.

THE USE OF DIGITAL TECHNOLOGIES IN EDUCATION

Understanding pedagogical trends poses a challenge for educators, as students today belong to a highly digitized generation, commonly referred to as digital natives (PRENSKY, 2001). According to the author, traditional resources such as books and printed materials have been gradually replaced by the internet and audiovisual content, reflecting the dominance of the online environment in students' everyday lives. In this context, the challenge of making classes more dynamic and engaging demands the incorporation of educational technologies that not only innovate teaching but also foster collaborative and more meaningful learning for students (MOREIRA, 2012).

Collaborative activities, whether in person or online, in small groups have great potential to facilitate meaningful learning because they enable exchange and negotiation of meanings, and place the teacher in the position of mediator. But this does not mean that a classic expository class cannot facilitate meaningful learning. (MOREIRA, 2012, p. 23)

Implementing new teaching practices through the use of technology has been a challenge for many educators, becoming an increasingly pressing need in today's educational landscape. The contemporary teacher seeks innovative strategies to make classes more dynamic and to encourage students to explore new knowledge through digital tools such as smartphones, tablets, and computers.

In this context, the magazine *Inova Escola* (2016) highlights guidelines and evidence that reinforce the importance of integrating technological resources into teaching practices. This approach not only modernizes education but also drives the transformation of teaching, making it more accessible, interactive, and aligned with the demands of the digital age, thereby expanding learning opportunities.

As previously highlighted, teachers must develop flexibility and adaptability to keep up with changes in education, as the current school curriculum demands innovative skills for effective classroom practice.

The major challenge lies in the teacher's preparedness and willingness to integrate Digital Information and Communication Technologies (DICTs) into their pedagogical planning, considering that the digital realm has become an essential component of education (TEIXEIRA et al., 2015, p.10). The adoption of technological tools such as interactive quizzes, digital comic creation, app development, spreadsheets for mathematical calculations, and even educational games expands didactic possibilities and makes content more engaging, fostering a hybrid and dynamic learning environment.

In this regard, Scussel (2018, p. 86) proposes an innovative approach by redefining the roles of teachers and students in the educational process. He suggests the terms "mediators" and "learners" to represent a new teaching paradigm grounded in interaction and the shared construction of knowledge. This model reinforces the importance of a transformative education that goes beyond mere content delivery and values the active participation of students within the contemporary digital context.

A transformative education is one that goes beyond the presentation of content, creating an environment and dynamics that encourage the sharing of knowledge through dialogue and connecting different types of knowledge to the experiences of learners, in order to value their perceptions and contributions, in addition to proposing challenges that consolidate learning to inspire new attitudes and achievements, both individual and collective. (SCUSSEL, 2018, p. 87)

The incorporation of these terms contributes to more effective classroom practices, as teachers who adopt the role of mediators become responsible for guiding, analyzing, and integrating technological innovations into the content being taught. In doing so, they encourage learners to seek relevant information related to the subject matter, fostering continuous, dialogical, and transformative learning, especially within the professional context.

This shift in pedagogical perspective aligns with the demands of 21st-century education, where knowledge is no longer transmitted in a unidirectional manner, but rather constructed collaboratively. In this scenario, digital technologies serve not only as tools but as catalysts that reshape the educational environment. Their proper use enhances student engagement, autonomy, and critical thinking, essential competencies for success in professional and academic spheres.

Furthermore, by incorporating digital resources into their teaching strategies, educators are able to personalize learning pathways and accommodate diverse learning styles. This flexibility is particularly relevant in vocational and professional education, where students benefit from contextualized and applied learning experiences. When mediated by intentional pedagogical planning, the use of technological tools can bridge theory and practice, prepare students for the labor market, and strengthen the connection between educational institutions and real-world challenges.

METHODOLOGY

Analyzing the use of technology in a professional context, this study adopted an educational approach focused on vocational training, carried out at the SENAC unit (National Service for Commercial Apprenticeship) in Ponta Grossa, Brazil. The participants were students enrolled in the *Commercial Professional Apprenticeship Program in Supermarket Services*, who took part in an action research project involving the use of technology in the classroom—such as smartphones, computers, and tablets—to carry out the learning activities proposed by the researcher.

The methodology adopted, action research, is characterized by the teacher's active participation in the investigative process, allowing not only for the analysis of educational practices but also for the pursuit of continuous improvement and a deeper understanding of the challenges faced by students. According to Tripp (2005), action research involves the identification of a problem, its monitoring, evaluation, and the implementation of improvements, fostering transformations in both student and teacher practices and resulting in a more dynamic and effective teaching-learning process.

Recognition is a situational analysis that produces a broad view of the action research context, current practices, participants and stakeholders. Alongside designing and implementing change to improve practice, recognition follows exactly the same cycle as action research, planning how to monitor and evaluate the current situation, doing so, and then interpreting and evaluating the results in order to plan an appropriate change in practice in the first cycle of improvement action research (TRIPP, 2005, p.11).

Tripp (2005) emphasizes that the active participation of those involved makes the investigation more collaborative, fostering a continuous process of educational improvement.

Based on this perspective, the research was conducted with apprentices from the supermarket sector, who receive training to deal with common challenges in the professional environment, particularly in customer service. The focus of the study was to improve participants' communication skills in providing guidance about store merchandise and products, ensuring clear and objective interactions. This competency is essential, given the diversity of customers served, which may include elderly individuals, children, pregnant women, and people with special needs.

Approach to the Topic and the Tool Used

The thematic approach centered on procedures related to product exchange and return, emphasizing the importance of high-quality customer service. The apprentices were required to develop the ability to offer accurate and helpful information about the store's products, providing effective support tailored to different customer profiles, including the elderly, children, pregnant women, and individuals with special needs.

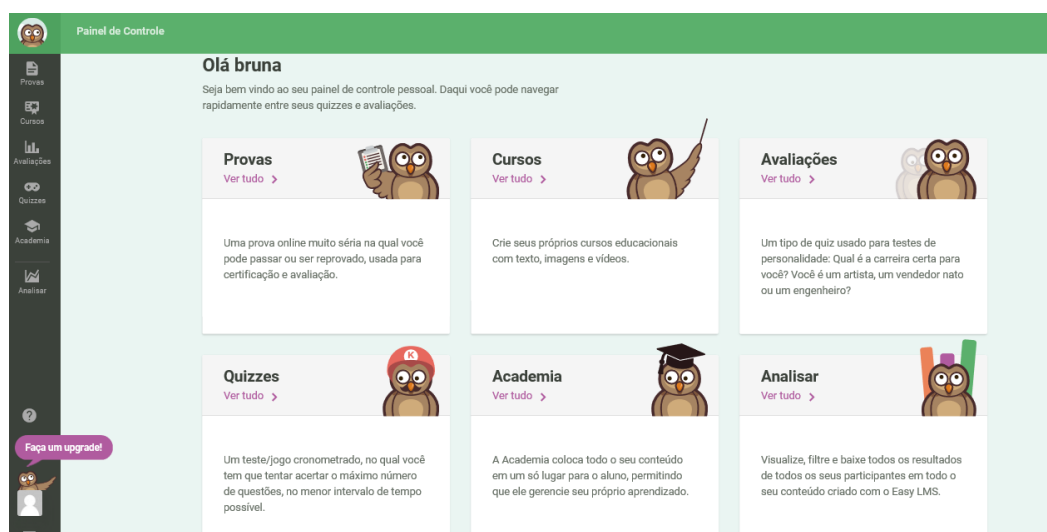
To promote more dynamic and in-depth learning, the students were divided into six groups of five participants, totaling thirty apprentices. Each team was tasked with conducting readings and research on topics related to customer service, exploring various

forms of communication such as verbal and non-verbal language, body language, and basic notions of Brazilian Sign Language (Libras). To consolidate this knowledge, students participated in activities in the computer lab, where they had access to computers, the internet, word processing tools (Microsoft Word), and presentation software (Microsoft PowerPoint).

Each team prepared and delivered a seminar on the content studied, incorporating dramatizations and customer service simulations, which enabled a more interactive and hands-on approach. As a final step, students were challenged to develop a quiz to reinforce the knowledge acquired. The quizzes were designed to make content assimilation more engaging, promoting healthy competition, scoring, and timed responses, as proposed by **Gordillo (2014)**.

According to **Gordillo (2014)**, quizzes are widely used in educational settings due to their potential to stimulate interaction among participants and provide immediate feedback, which supports instructional improvement and knowledge retention. The **Quiz Creator** tool (Figure 1), used in this activity, allows the creation of interactive questionnaires with various types of questions, including true or false, multiple choice, and the integration of images, making the learning experience even more dynamic and accessible (**Galvão, 2015**).

Figure 1 – Interactive Panel



Source: Prepared by the authors using the Quiz Creator platform (2025).

This tool, which operates entirely online without the need for installation, offers a wide range of education-oriented features. In addition to quiz creation, **Quiz Creator**

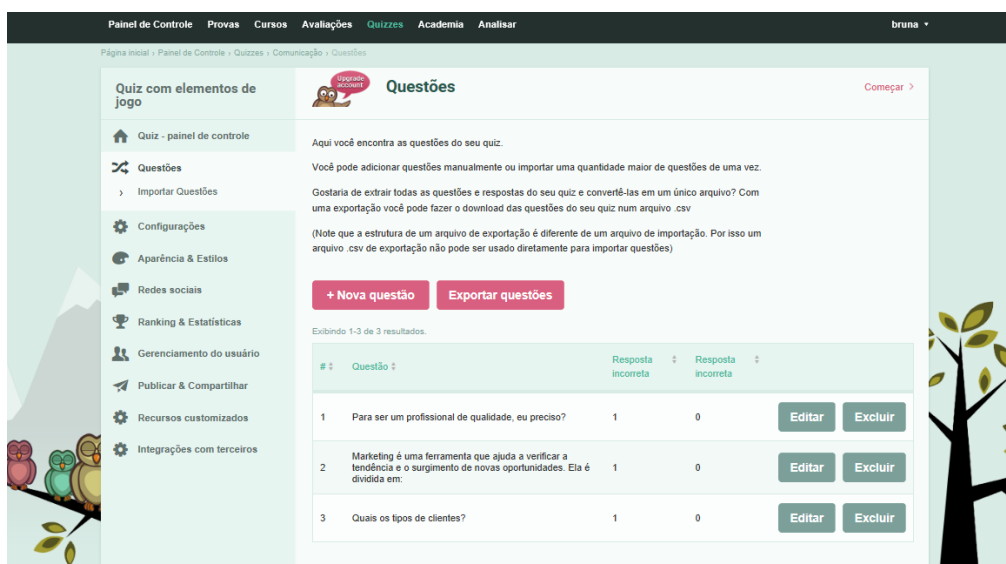
provides an interactive panel with an intuitive start menu, allowing the development of diverse educational activities such as exams, courses, assessments, and other types of interactive tests.

These features enable teachers and instructors to personalize instruction, making learning more dynamic and accessible. The image below illustrates the software's start menu, showcasing its user-friendly interface and the functionalities available for creating interactive content.

After the online tool was introduced to the students, the quiz creation process began in teams. Each group developed a set of twelve questions and answers, exploring different formats to make the activity more engaging. Some teams chose to include images to support their responses, while others used only text, adapting the content to the specific needs of the topic studied.

This phase provided students with a hands-on, collaborative experience, stimulating creativity and reinforcing the application of the knowledge acquired. The following image (Figure 2) illustrates the quiz creation process, highlighting the features available on the platform and the development of questions by the participants.

Figure 2 – Quiz Creation Panel



Source: Prepared by the authors using the Quiz Creator platform (2025).

After creating the quiz, students returned to the conventional classroom to begin an online competition aimed at reviewing and consolidating the content studied. A projector

was used for this activity, allowing the entire class to follow along in an interactive and engaging manner.

The game format involved selecting one team to present its questions while another team took on the role of respondent. At the end of the twelve questions, the score was recorded, and a new group was invited to participate, ensuring team rotation until all groups had the opportunity to play.

This approach fostered a dynamic and collaborative learning environment, encouraging active student participation and promoting greater engagement with the content. Furthermore, the competitive element stimulated quick thinking and content review, making the learning process more appealing and effective.

RESULTS OBTAINED

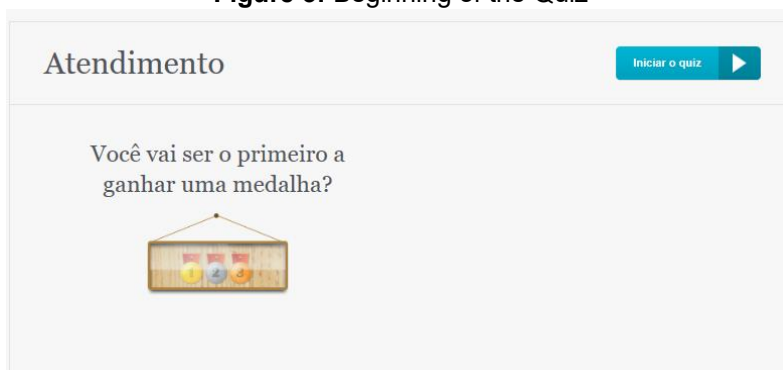
The use of educational software in the classroom contributes significantly to the learning process by providing an interactive environment that facilitates knowledge construction in a meaningful and assertive way. The quiz competition dynamic encouraged students to actively engage with the content proposed by the researcher, reinforcing their understanding of the topics addressed.

From the beginning to the end of the activity, an evolution in learner behavior was observed. Initially, many students displayed insecurity regarding the subject matter and hesitation under the pressure of timed responses a characteristic of quiz-based activities. However, as the rounds progressed, students began to interact more with one another, supporting their peers and developing greater confidence in answering the questions.

As the activity continued, a noticeable shift in focus occurred: while students were initially concerned with response time, they gradually began prioritizing the accuracy of their answers. This shift indicated progress in content assimilation.

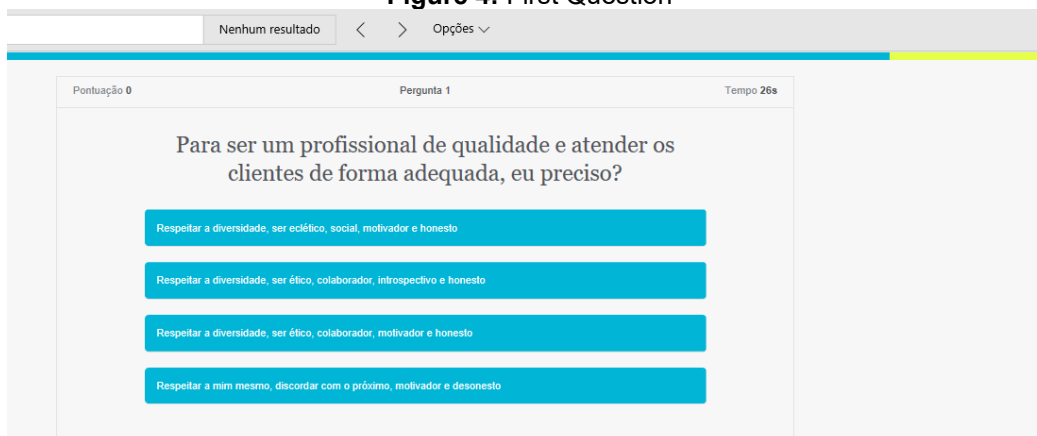
The **Figures 3 and 4** illustrate the beginning of the quiz activity, highlighting the moment when the first questions were projected. From this initial stage onward, a high level of student attention was observed an engagement that persisted throughout the entire session—demonstrating the positive impact of the **Quiz Creator** platform on student motivation and involvement.

Figure 3: Beginning of the Quiz



Source: Prepared by the authors using the Quiz Creator platform (2025).

Figure 4: First Question



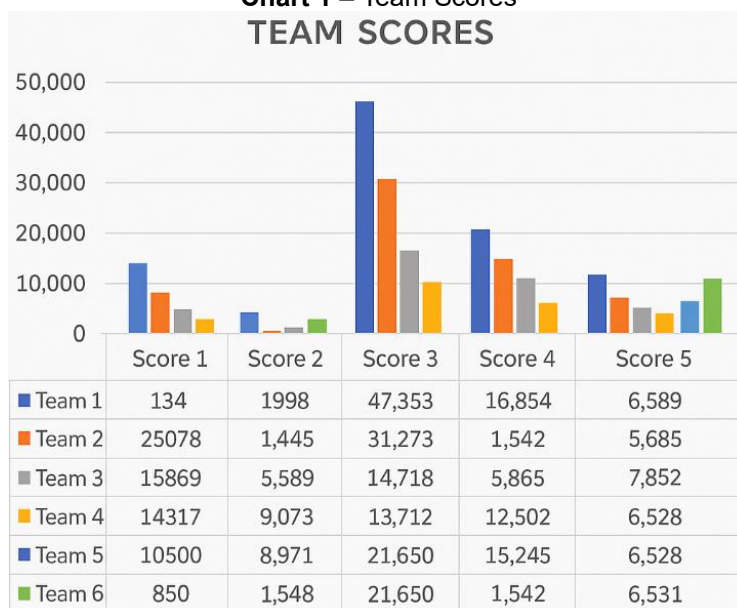
Source: Prepared by the authors using the Quiz Creator platform (2025).

Students demonstrated enthusiasm and engagement throughout the activity. The use of **Quiz Creator** enabled a quick and dynamic assessment of the knowledge acquired during the lessons on personalized customer service.

Each quiz round consisted of twelve questions, and participants' scores were generated at the end of each session. The competition was organized into five stages, with six teams alternating between creating and answering the questions. This format allowed all groups to showcase the knowledge they had developed during the course, making the experience both interactive and collaborative.

The **Chart 1** illustrates the distribution of scores obtained by the teams throughout the activity, highlighting participants' performance and the effectiveness of the quiz as a tool for assessment and reinforcement of learning.

Chart 1 – Team Scores
TEAM SCORES



Source: The authors (2024)

The analysis of the data presented in **Chart 1** reveals that the format of the questions directly influenced team performance. It was observed that, in medium-difficulty questions, all groups experienced a 50% increase in their scores, indicating better content retention. A relevant factor contributing to this result was the inclusion of images in the questions, which assisted in interpretation and facilitated comprehension. This finding reinforces the importance of visual resources in education, as graphic elements can make learning more accessible especially for students who respond better to visual stimuli.

The use of technological tools in education, such as **Quiz Creator**, had a significant impact on student engagement and performance. The team score chart demonstrates how interactive dynamics support content assimilation and allow for a quantitative evaluation of learning. The data indicate that **Score 3** was the most successful stage, with all teams showing substantial improvement in performance. This may suggest that students felt more confident with the content covered in this phase or that the pedagogical strategy applied was particularly effective at that moment.

On the other hand, **Score 2** presented significant difficulties for the participants. The questions in this stage contained longer texts and mixed responses (short and long answers), requiring more time for reading and analysis. However, the time limit for each question was insufficient for students to reflect and respond appropriately. This result suggests that, in gamified activities, it is essential to balance the complexity of the questions

with the time allotted, ensuring that participants can demonstrate their knowledge without being hindered by time constraints.

Another relevant point is the variation in performance among the teams. **Team 1** stood out with a peak of **47,353 points** in Score 3, showing strong mastery of the content, but displayed lower performance in other stages. This may indicate that the team had a better grasp of specific concepts from that phase but faced challenges with other topics. Meanwhile, **Teams 2, 3, and 4** showed more consistent performance throughout the quiz, suggesting more stable knowledge assimilation possibly due to greater participation and collaboration among team members.

Conversely, **Teams 5 and 6** recorded lower scores, which may be attributed to various factors, such as difficulties in understanding the content, lower engagement during the activity, or lack of confidence when answering questions. This result highlights the importance of differentiated strategies to support students with varying learning paces, ensuring that all can progress along with the class. The introduction of adaptive approaches—such as the instant feedback provided by **Quiz Creator** can be a valuable asset in supporting students who struggle, enabling them to review concepts before progressing to new stages.

Moreover, the healthy competition among teams proved to be a relevant motivational factor. As the activity progressed, students began to prioritize not only the speed of their responses but also the accuracy of their answers, reflecting a behavioral shift throughout the process. The fact that the quiz was structured in different stages allowed participants to reflect on their mistakes and adjust their strategies, which is a core principle of active and meaningful learning.

Thus, the results presented in the chart confirm that **gamification in vocational education** can be a powerful tool for encouraging learning, increasing student engagement, and fostering a more dynamic teaching environment. The practical experience with **Quiz Creator** demonstrates that educational technology can transform the classroom into a more collaborative, interactive, and effective space for knowledge construction.

These findings highlight the need to adapt activity structures, especially in timed assessment contexts. The use of interactive questions and multimodal resources such as text, images, and videos can be an effective strategy to enhance content retention and improve student performance. Additionally, adjusting response time based on the type of

question can lead to fairer and more effective assessments, allowing students to better demonstrate their true learning potential.

The detailed analysis of the score distribution across the five stages reinforces the importance of content alignment, task complexity, and team dynamics in gamified learning environments. Teams that demonstrated consistent improvement, such as Team 6, highlight how gradual exposure and active participation can foster effective knowledge retention. On the other hand, highly variable performance, as seen with Team 1, may point to content-specific strengths or teamwork-related factors. These insights underscore the need for differentiated strategies that adapt to the pace and profile of each group, ensuring equitable and meaningful learning experiences.

CONCLUSION

The use of educational technologies, such as **Quiz Creator**, has proven to be an effective strategy for making the teaching and learning process more dynamic, interactive, and aligned with the needs of the digital generation. Throughout the action research, a significant evolution was observed in students' understanding and assimilation of content, particularly regarding personalized customer service in the retail sector. The integration of multimedia resources, gamification, and active methodologies enabled a more engaging and participatory learning experience, fostering critical thinking and collaboration among learners.

The analyzed data reinforces that the use of interactive quizzes, when combined with a well-structured pedagogical approach, enhances knowledge construction and promotes meaningful learning. The positive impact of the activity was evident through the progression of team scores and the increase in student engagement over the different stages, highlighting that the integration of theory and practice is essential for consolidating the concepts and skills required in professional environments.

Furthermore, the study underscores the importance of adapting content to the learners' profiles by incorporating innovative tools that allow for instructional personalization. The use of images and interactive elements, for example, facilitated question interpretation and improved participant performance, demonstrating that a variety of resources helps reinforce knowledge retention. However, the need to balance question complexity and time constraints emphasizes the importance of refining the structure of

gamified activities to ensure that all students have a fair opportunity to demonstrate their full potential.

Importantly, the results also show that incorporating technology in vocational education not only enhances content comprehension but also better prepares students for real-world challenges. It fosters the development of key competencies such as decision-making, effective communication, and problem-solving. In this context, learners who master service techniques and continuously improve their skills are more likely to succeed and advance in the retail sector.

Therefore, **Quiz Creator** proved to be a powerful tool for innovation in education, offering a more accessible, stimulating, and effective teaching experience that meets the demands of contemporary society. Its application can be expanded to other areas of vocational and higher education, particularly in contexts where immediate feedback, learner engagement, and digital fluency are essential.

Suggestions for Application

Based on the findings, future implementations of this strategy could include:

- **Adaptive quiz configurations** that adjust time limits based on question type and complexity;
- **Peer review features** to allow students to evaluate each other's quizzes and responses, promoting critical thinking;
- **Integration with other educational tools**, such as Learning Management Systems (LMS), to track progress over time;
- **Use in blended learning formats**, combining in-person guidance with self-paced digital exploration;
- **Thematic expansions** to other vocational areas (e.g., health, administration, hospitality), adapting content to each sector's realities.

By embracing these approaches, educators can further enhance the potential of gamified learning environments and prepare students more effectively for the demands of the contemporary labor market.

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