

# **Wavumbuzi Entrepreneurship Challenge: A Gamified Approach to Entrepreneurial Mindset Development**

## **Authors**

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## **Abstract**

The gamified approach is an effective way of learning in the classroom, especially for learners who have difficulty learning using contemporary methods (W. Mee, T. Shahdan & M. R. Ismai, 2020)<sup>1</sup>. The Wavumbuzi Entrepreneurship Challenge adopts this method of learning in its model. As a result, knowledge transfer is more fun and a self-discovery journey for learners who participate in the challenge.

To test this model, Wavumbuzi Knowledge and Research Unit conducted a Pre- and Post-Challenge Survey during the Wavumbuzi Entrepreneurship Challenge. The objective was to assess the change in learners' level of entrepreneurial competencies before and after participating in the Challenge. Hence, measurements were taken before administering the intervention (learners engaging in the Challenge), followed by a post-test measurement on the same study participants.

A total of 447 learners completed both surveys. Findings from this study indicated that several entrepreneurial competencies improved. Entrepreneurial competencies with positive average differences between baseline (Pre) and end line (Post) were: Entrepreneurial experience, Intend to start up (Entrepreneurial intention – EI 2), Future business planning (Entrepreneurial intention – EI 3), Structured tasks, and following others' rules (Entrepreneurial mindset – EM 2), Positive entrepreneurial mindset (Entrepreneurial mindset – EM 1) and Taking action and initiative. The results confirm that the gamified approach applied by Wavumbuzi is effective in stimulating entrepreneurial competencies amongst learners.

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<sup>1</sup> Mee. R, Shahdan. T, Ismail. R, Ghani. K, Pek. L, Von. W, Woo. A, Rao. Y. (2020) *Role of gamification in classroom teaching: Pre-service teachers' view*; International Journal of Evaluation and Research in Education (IJERE) Vol. 9, No. 3.

*Word count: 213*

## **Background**

Gone are the days of learning through textbooks only (BECF, 2017)<sup>2</sup>. Educators have experienced first hand how this method is limiting and makes it difficult to meet the needs of different learners especially in classrooms where the ratio of a teacher to learners is 1 teacher to 50 learners. In order to ensure that engagement is maintained, and learning is highly experienced, games and practical learning methods should be incorporated in learning.

Since 2019, Wavumbuzi Entrepreneurship Challenge has ensured that secondary / high school learners in Kenya experience a vast range of technological and entrepreneurial innovations through a free six weeks online gamified approach. This Challenge aims at developing the entrepreneurial mindset of learners through Critical thinking and Innovation. The learners were exposed to different topics (referred to as Quests such as Hospital, Farming and Water) broken down into smaller Challenges which they are expected to solve online through a gamified approach.

Through the help of a teacher or a maximum of two teachers assigned by the respective school to support this program, learners are required to register through the Wavumbuzi Entrepreneurship Challenge platform using their email addresses in order to access the challenges. Once the learners have access, they engage in the Challenges during their free time (not during the normal school lessons). Over the years, through its partners in Kenya, such as CEMASTEIA, Wavumbuzi have reached more learners and teachers year on year, In 2019, 815 learners were reached. This number increased significantly in 2020 where 2035 learners were reached through the teachers who had been trained. In 2021, Wavumbuzi reached 664 teachers which translated to 2541, learners participating in Wavumbuzi Entrepreneurship Challenge that year. Wavumbuzi Entrepreneurship Challenge is targeting 7500 learners in edition 4 which will happen in 2023 January. So far, we have trained about 730 teachers to achieve this number. The year on year increase in the learners reached just shows how the gamified approach employed in Wavumbuzi excites learners to participate because of its fun nature.

## **Methodology**

To scientifically quantify and assess the impact of the Wavumbuzi Entrepreneurship Challenge, Wavumbuzi's Knowledge and Research Unit (KRU), under the guidance of Prof. Melodi Botha from the University of Pretoria, conducted a Pretest–Posttest experimental study. The main objective of the experiment was to assess the change in learners' level of entrepreneurial

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<sup>2</sup> BECF. (2017). *Basic Education Curriculum Framework*. Nairobi: Kenya Institute of Curriculum Development.

competencies prior to and after they were exposed to the Wavumbuzi Entrepreneurship Challenge. Since the study was a Pretest–Posttest experimental design, measurements were taken prior to administering the intervention (gameplay), followed by a posttest measurement on the same study participants after the end of the challenge.

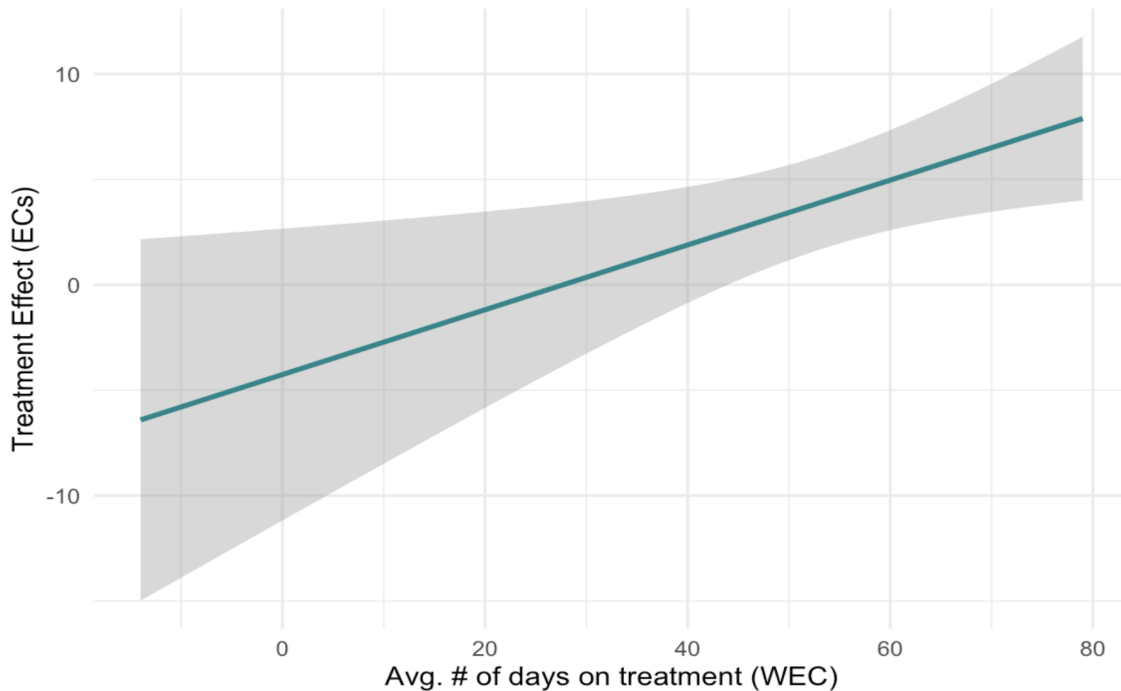
The experimental design enabled us to determine whether the respondents' level of ECs improved after they were exposed to the Wavumbuzi Entrepreneurship Challenge. Improvement was assessed by taking the average difference between the post-test (endline) entrepreneurial competencies score and the pre-test (baseline) entrepreneurial competencies score. Data was collected over a six-week period from 16 August 2021 to 20 October 2021 (excluding weeks where the learners wrote exams and school holidays) using an online, self-administered survey hosted using Wavumbuzi AWS platform.

The baseline (pre-test) sample was tested before exposure to the Wavumbuzi Entrepreneurship Challenge (WEC) and consisted of 1,504 usable surveys filled by high school learners from over 200 schools spanning over 40 counties in Kenya. The endline (post-test) sample was tested after the respondents were exposed to the Wavumbuzi Entrepreneurship Challenge, and this sample size consists of 637 usable responses. Therefore, a sample of 447 respondents completed both surveys and were included in the inferential analysis.

## **Results**

Findings from this study indicated that there were six main entrepreneurial competencies (ECs) that improved. Entrepreneurial competencies with positive average differences between baseline (Pre) and endline (Post) were: Entrepreneurial experience, Intend to start up (Entrepreneurial intention – EI 2), Future business planning (Entrepreneurial intention – EI 3), Structured tasks, and following others' rules (Entrepreneurial mindset – EM 2), Positive entrepreneurial mindset (Entrepreneurial mindset – EM 1) and Taking action and initiative. A similar study conducted in Rwanda also indicated similar entrepreneurial competencies improvements. Improvement in ECs (treatment effect) increased significantly when learners started to engage early on during the first few weeks of the challenge versus playing during the last few weeks.

## Avg number of days on treatment (WEC) vs. treatment effect.



### Conclusion

The results confirm that the gamified approach applied by Wavumbuzi is effective in stimulating entrepreneurial competencies amongst learners. With the Gamified approach of the Wavumbuzi Entrepreneurship Challenge, there has been a lot of interest shown by many Educators who have experienced the Challenge wanting their learners and school to participate in the next challenge. This has been felt simply because when playing the game on the platform, the learner rather than the teacher becomes the centre of focus and the teacher automatically assumes the role of a facilitator (BECF, 2017)<sup>3</sup>. This gamified approach has enabled learners to break the traditional classroom monotony and enabled participating learners to learn more about entrepreneurship and technological innovations around the world in an effective and efficient way throughout the six weeks in preparation for their lives after school and hence reduce unemployment rate in the country in the future (Hall, S. 2017<sup>4</sup>).

<sup>3</sup> BECF. (2017). *Basic Education Curriculum Framework*. Nairobi: Kenya Institute of Curriculum Development.

<sup>4</sup> Hall, S. (2017). *Youth Employment in Kenya*. Nairobi: British Council

## Reference

Mee. R, Shahdan. T, Ismail. R, Ghani.K, Pek. L, Von. W, Woo. A, Rao. Y. (2020) *Role of gamification in classroom teaching: Pre-service teachers' view*; International Journal of Evaluation and Research in Education (IJERE) Vol. 9, No. 3.

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