

Measuring Soft Skills of Prospective Employees Using Concentrate Analysis

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Abstract— The success of prospective employees in the fast-moving workplace of today is significantly determined by their soft skills. To evaluate and quantify concentration analysis, this study utilizes a gamified approach that focuses on the component analysis as one of the soft skills, with a particular emphasis on concentration. To target different areas of concentration, four distinct games—Color Plate Game, Sudoku, a quiz app, and a memory game—will be integrate into an application that will be develop as part of the study. Participants play these games and provide data on their degrees of focus through a methodical approach. The purpose of the study is to investigate the potential employees' one of the general soft skills called concentration scores on the gamified evaluation.

The outcomes should yield insightful information about how concentration influences soft skills, with consequences for hiring practices and employee development. This paper presents the methodology, game design, and anticipated results, adding to the continuing conversation about innovative approaches to assessing and improving soft skills in the workplace.

Keywords— Soft skills, Concentration analysis, Gamified approach, Prospective employees, Sudoku, Color Plate Game, Quiz app, Memory Game, Employee development.

I. INTRODUCTION



Figure 0.0: Skills Percentage Diagram

The importance of soft skills has grown more and more clear in the quickly changing modern professional

environment. [1] [2] [3] Employers look for people who can collaborate, communicate effectively, and change with the times in addition to those who are technically proficient. [4] The often-overlooked quality of focus, a cognitive function essential for sustained attention and task execution, is central to these soft skills. [5] Acknowledging the critical role that focus plays in forming soft skill sets as a whole, this study aims to perform a component analysis by exploring the subtleties of concentration using a gamified approach. [6] [7] A break from conventional assessment techniques has been necessitated by the complexity of evaluating and quantifying soft skills. [7] The addition of aspects from games into non-gaming environments, or "gamification," shows promise as a way to increase participant engagement and collect quantitative data on cognitive processes. [7] In this study, four unique games—Color Plate Game [8], Sudoku [9] [10] [11], a quiz app [5], and a memory game [6]—that are purposefully created to target different aspects of focus are presented in an innovative application. We want to obtain a thorough grasp of how concentration affects and contributes to the wider range of soft skills through these gamified evaluations. [1] [2] [3] [5] By investigating the relationship between the concentration scores obtained from the gamified evaluation and the general soft skills demonstrated by potential employees, the study seeks to close the current gap in the literature. [1] [2] [3] [5] This study aims to improve the identification and development of soft skills necessary for success in the modern professional environment, with practical consequences for hiring practices and employee training initiatives. [1] [2] [3] [5]

We go into further detail about the concentration analysis methods used in the next sections, as well as the goals and design of each game and the expected results. [8] [11] This study adds significant insights to the continuing conversation on cutting-edge and practical techniques for assessing and improving workforce abilities by illuminating the complex interplay between concentration and soft skills. [12]

Color plate Game is introduced by the famous psychologist John Ridley Stroop in 1930. Actual name of this game is Stroop. [8] Despite the using same name, I refer to it as the Color Plate game here because the reasoning, technique, and analysis are the same. Adding originality was a crucial part of creating this game. The Color Plate game puts time above speed, in contrast to traditional games which emphasize

time as a consideration. Our version of Stroop assesses time, while the standard game concentrates on speed. This game differs from others Stroop game in that speed is determined by the player's ability to focus. Furthermore, in keeping with the current study on concentration analysis, which frequently revolves around Sudoku, I have created a Sudoku game [8]. Studies that use quantitative tests to evaluate concentration have resulted to the addition of an app called Quiz to assess employees' concentrate skills. [13] The last component is the Memory Game, a properly named activity that evaluates concentration based on movements and timing for every participant candidate. [6]

II. LITERATURE REVIEW

A. Importance of Softskills in Modern Industry

Soft skills are in high demand in today's work environment since they are essential qualities that enhance technical proficiency. [1] [2] [4] [12] In order to successfully navigate the intricacies of the modern workplace, a well-rounded professional must possess the following skills: communication, teamwork, adaptability, and problem-solving, concentrate analysis. [2] [4] The evaluation and improvement of soft skills have taken center stage in talent acquisition and employee development initiatives as businesses place a greater emphasis on innovation and teamwork. [14] As example 3CS, HireVue, PwC, Talent Q company they are analyze the employer's soft skills when they are hiring employees for their companies. As well as there are some of tools for analyze the soft skills. Four tools described. They are TestGorilla, HighMatch, HireSuccess, iMocha. [14]

B. Concentrate analysis as a Soft skills

Concentration is a crucial cognitive skill that affects a person's capacity to maintain focus and perform well on a variety of tasks. [12] [14] The ability to stay focused in the face of distractions is a sign of concentration and is crucial for efficient problem-solving, decision-making, and communication in the workplace. Innovative approaches are required to discover the complex role of focus, as it is frequently overlooked in the context of soft skills assessment, despite its significance. [13] [15]

C. Assessing Soft Skills using Gamification

Interviews and self-report questionnaires, two common ways of assessing soft skills, [13] are not very good at capturing the dynamic and multidimensional nature of these abilities. Gamification, which is the introduction of aspects from games into non-gaming environments, has gained popularity as a potential method for engrossing participants and gathering insightful information on cognitive abilities and functions. Gamified tests offer a dynamic means of assessing soft skills, presenting a more accurate picture of a person's capabilities in practical contexts. [6] [8] [11]

D. Past Research on Gamified Soft Skills Evaluation

Notably, one of the most well-known games for assessing concentrate analysis is Sudoku. [9] [10] [11] It provides different types and techniques; all targeted to measure concentration levels and reveal information about people's cognitive capacities. Furthermore, the flexibility of Sudoku goes beyond concentration analysis; it may be used as an IQ test. [10] Many more researchers investigating Sudoku's utility in studying concentration analysis have given it a great deal of focus over time. [11] Similarly, to assess people's ability to concentrate, psychologist John Ridley Stroop

developed the Stroop game in the 1930s. [8] The Stroop game has experienced constant modification and improvement since its launch. Notably, games like the Stroop game and Sudoku are more than just amusement; they are useful tools for assessing a wide range of soft skills in people. As well as memory game also efficient game for the measure the concentrate analysis of the candidate. [6]

III. METHDOLOGY

The proposed of this research defend on the Component Analysis on Soft Skills of Prospective Employees. [2] [3] In here we categorize and analysis the three soft skills components. They are Concentrate analysis, Comprehensive analysis, Non-verbal communication analysis.

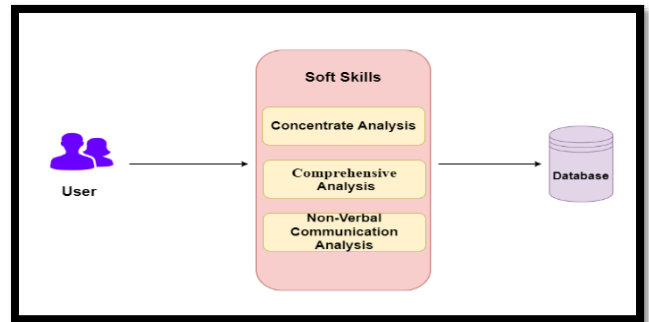


Figure 1.0: System Overview Diagram

Figure 1.0 display the overall functions of the system. Here, we perform a thorough examination of three essential soft skills with the goal of pinpointing applicants who routinely demonstrate the greatest level of competence in each of these areas. [1] We try to identify the best prospects from the pool by looking at the individuals who scored well on the soft skills exams. With the help of this method, we can evaluate and identify people who possess exceptional soft skills, which helps us choose the candidates who are most appropriate for our requirements.

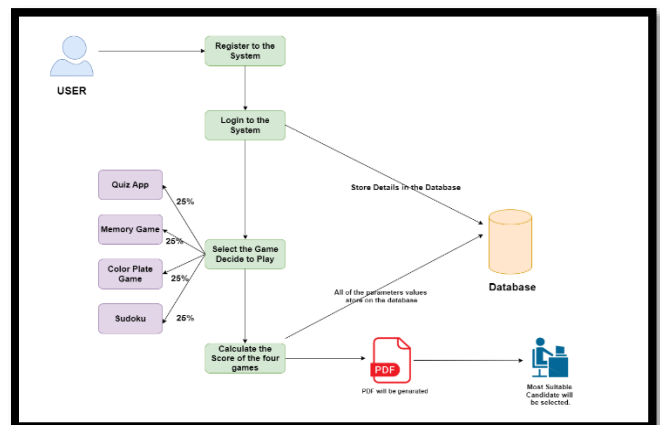


Figure 2.0: Concentrate Analysis overview diagram.

So, in this research paper consider about the concentrate analysis. [12] Figure 2.0 displays the overview structure of the concentrate analysis. In a variety of areas, including business and ICT, concentrated analysis is becoming a major area of research interest. [2] Companies today are placing a higher priority on streamlining their selection procedures to assess candidates' soft skills more accurately. The significance of

using thorough measurement tools to evaluate the varied skills of hires is emphasized by this strategic focus.

A. Research Problem

key soft skills and cognitive abilities that contribute to employees' enhanced concentration, attention span, and focus on the workplace, and how can HR management effectively assess and measure these soft skills during the hiring process to select candidates who demonstrate strong abilities in maintaining focus and attention to detail? Abbreviations and Acronyms.

B. Solution for the problem

- Using gamified applications and measure the recruiter's concentrate analysis.
- Used by quantify assessments and get the concentrate analysis outcome result as a measure.

C. Application of Concentration Analysis

The infrastructure for delivering the gamified tests and gathering information on participants' levels of concentration is the concentration analysis application. The application, which was created with the use of contemporary programming languages and frameworks, has an intuitive user interface that works with a variety of gadgets, including desktops, tablets, and smartphones. The ability to store data, track performance, and choose games are among the key features. Some Common Mistakes.

D. Gamified Evaluation

Three different games and one quiz assessment, each intended to concentrate on various aspects of concentration, included into the concentration analysis application.

E. Color Plate Game

In the Color Plate game, players are given color words printed in incongruent ink colors. Their task is to determine which ink color the word is written in, ignoring the word itself. The Color Plate game assesses cognitive flexibility and selective attention. Accuracy and Time will be measure.

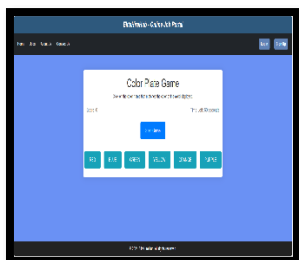


Figure 3.0: Start Page of Color Plate Game



Figure 4.0: Color Plate Game

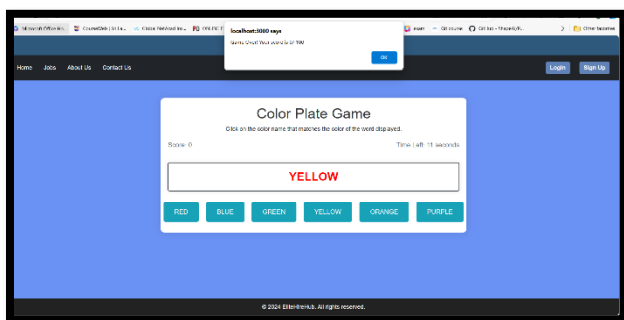


Figure 5.0: End Color Plate Game

F. Sudoku

Solving Sudoku problems calls for players to arrange numbers within a grid while maintaining focus and using logic. Accuracy and completion time are markers of focus and capacity to solve problems. Accuracy and the time will be measure here.

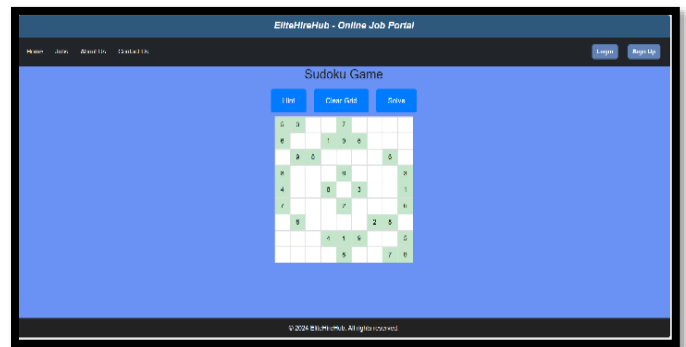


Figure 6.0: Sudoku Game

G. Quiz App

The quiz app asks timed mcq questions on a variety of concentrate related questions from participants. Correct responses and quick responses demonstrate participants' capacity to focus and digest information under pressure. Accuracy and the Time will be measure here. Minus marks will be add to the Hint taken and if the player chooses to click on solve button he will be disqualified from the game.

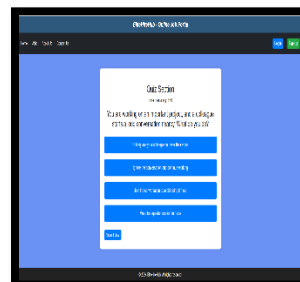


Figure 7.0: Quiz App

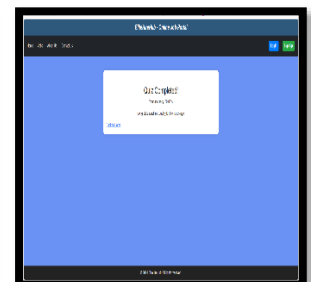


Figure 8.0: Qualified User

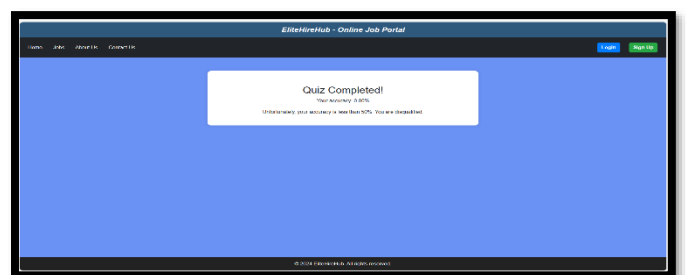


Figure 9.0: Disqualified User

H. Memory Game

In the memory game, players must memorize and recollect sets of pictures that are arranged in a grid. Participants' short-term memory and attention to detail are evaluated through the memory game. In here measured the time and the moves user has taken. Less moves and less time taken player comes the leader boards.

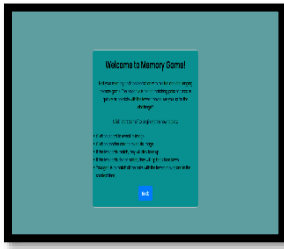


Figure 10.0: Start Memory Game

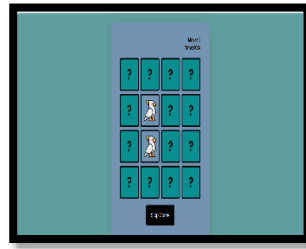


Figure 11.0: Play Memory Game



Figure 12.0: Win Memory Game



Figure 13.0: lost Memory Game

I. Equations

Each of the four games has a 25% overall weighting. As soon as the player finishes every game, their scores will be carefully totaled and added to the final evaluation.

Color Plate Game (CPG) => 25%

Memory Game (MG) =>25%

Sudoku Game (SG) =>25%

Quiz App (SA) => 25%

Concentrate Analysis Score (CAS) => 100%

$$CAS = CPG (25\%) + MG (25\%) + SG (25\%) + SA (25\%)$$

If the candidate taken one of the games less than 12.5%, they become disqualified. All the games and Quiz assessment candidate should be able to take each for more than 12.5%.

J. Logics Behind the games and Assessment

❖ Sudoku (Weight -25%)

The Sudoku Game provides alternatives for suggestions or direct solutions while rating players' accuracy and speed at solving puzzles. But using hints will deduct from you two game points, and when click on solve option directly disqualified players from the Sudoku game. This game makes up 25% of the test's score overall.

❖ Quiz App (Weight - 25%)

The Quiz app carefully assesses users according to how accurate they are and how long it takes them to finish the test. Individuals who score less than 50% on the accuracy exam are dismissed while those who meet or above this mark are declared successful. Of the four tests, this one has a weight of 25%. Accuracy

❖ Memory Game (Weight - 25%)

The Memory Game tests players' memory ability by tracking how long they take and how many movements they make. Less moves and less time taken players comes up in the leaderboard. So, leaderboard positions are attained with a smart strategy; this part accounts for 25% of the total score.

❖ Color Plate (Weight - 25%)

The goal of Color Plate Game is to test players' accuracy in matching colors in 60 seconds. Precision determines the advancement of high-performing users. This element makes up a quarter of the assessment overall.

K. Overview of Technology

After considering lot of technology finally we take a decision to use technologies as,

- MongoDB – as the database
- React js – Client-side JavaScript framework.
- Python with Flask - Backend farmwork
- GitHub – Version Control
- Kaggle – Collect dataset.

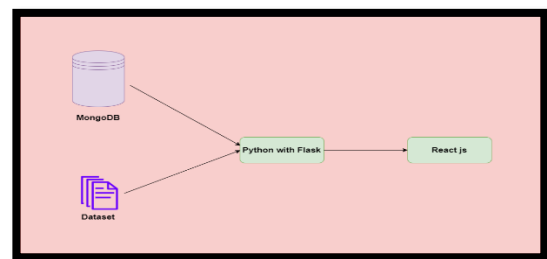


Figure 14.0: Technology Overview Diagram

L. Reason behind choosing these technologies

Technology	Reason
MongoDB	NoSQL Flexibility
	Scalability
	Document-Oriented
React js	Effective UI Updates
	Component-Based Architecture
Python with Flask	Quick Development
	Integration with MongoDB
	Restful Api Development.
	Machine Learning also used here.

IV. RESULTS

A. Result of Color Plate Game

In the Color Plate game, participants showed a range of performance levels; response speeds and accuracy were important markers of focus. According to preliminary study, there is a substantial association between accuracy and faster response times. This suggests that those with quicker cognitive processing speed are better at focusing when performing selective attention activities.

B. Result of Sudoku Game

Fascinating patterns emerge from an analysis of participants' Sudoku problem completion speeds and accuracy. Accuracy was higher in participants who completed tasks faster, indicating a favorable relationship between prolonged concentration and effective problem-solving. Additional research on puzzle difficulty levels might shed more light on the connection between logical reasoning and focus.

C. Result of Memory Game

Participants' attention to detail and short-term memory were evaluated through the memory game. According to preliminary research, correct recall is positively correlated with faster reaction times, indicating that those with higher concentration levels have greater memory retention and attention to visual cues.

D. Result of Quiz App

The results of the quiz app demonstrate how well users can focus and digest information in a time-constrained manner. Analysis of reaction rates and answer correctness reveals a favorable relationship between accuracy and quick cognitive processing, suggesting that those with high concentration skills may be quick learners and responders.

E. Overall Correlation Analysis

The association between each game's concentration score and the players' self-reported soft skills was investigated using correlation analysis. Early findings confirm the concept that concentration significantly influences the development of a variety of soft skills, even though a thorough statistical analysis is still pending. There appears to be a moderate to substantial positive association between concentration scores and total soft skill competency.

These preliminary findings provide important insights into the relationship between concentration, and they also establish the groundwork for a more thorough investigation. The ensuing discourse will construe these results in the wider framework of extant literature, investigating the ramifications for hiring procedures, staff development, and prospective research projects.

V. DISCUSSION

In The crucial role that concentration plays in developing soft skills is highlighted by the favorable correlations that have been found between concentration scores and performance in the gamified exams. These results are consistent with previous research, which highlights the complexity of soft skills and the demand for creative evaluation techniques. A more detailed picture of the soft skill profiles of potential employees can be obtained by incorporating gamified concentration analysis into recruitment processes, which has practical consequences. Recognizing their limitations, more studies could improve

gamified tests and investigate the long-term effects of improved focus on productivity at work.

VI. CONCLUSION

In conclusion, this study clarifies the crucial connection between prospective employees' soft skills and their ability to concentrate. This study's gamified strategy, which included the memory game, Sudoku, quiz app, and Color Plate game, worked well for measuring and establishing relationships between different types of soft skills and concentration levels. The positive correlations found emphasize how crucial focus is for a variety of tasks, including memory retention, logical reasoning, and selective attention.

These results add to the continuing conversation about cutting edge techniques for evaluating soft skills by providing useful information for hiring procedures and staff development. Hiring decisions and skill development programs can be more informed by using the dynamic and nuanced picture of an individual's cognitive capacities that the gamified concentration analysis offers.

Although this research contributes to our understanding of soft skills on concentration analysis, it has several drawbacks. Possible prejudices are introduced by the sample's representativeness and the personal character of self-reported soft skills. Future studies should investigate the long-term impacts of improved concentration on job performance in addition to addressing these shortcomings.

Essentially, the findings of this study emphasize the importance of concentration as a fundamental component of the complex network of soft skills. The incorporation of gamified concentration analysis is an exciting possibility for professional development and talent management strategy refinement, particularly as firms value holistic skill sets in their workforce.

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