

Brain mapping

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ABSTRACT

The aim of this system is to explore the influence of applying a game-based learning approach to nutrition education so that students could start learning with great enthusiasm and interest along with students, participants other age group can take advantage of this system i.e. to check their knowledge and to conduct a systematic literature review on empirical studies of how technologies influence young children's learning.

1. INTRODUCTION

The application of the technology to gaming opened new doors to both complex and sophistication of the interactions and dimensions of learning in a game environment. Initially the use of the computer had limited media though the games were an advancement in sophistication over the technology free games, but the increasing technological capacity and improved graphics have led to rapid changes in the world of games. The phenomenon of game playing and its incursion into the world has been of interest to many researchers. Online gaming involves millions of players around the world in complex challenges providing them with satisfaction and opportunities to work with others towards common goals. Instead of being a small part of society, gaming now involves large numbers of people from all

walks of life and is no longer an aspect of the world that can be ignored. Its potential in Education is being explored but so far has had limited impact through the usual channels of formal education in schools but is rather providing an education outside and through some College courses that have taken up the challenge.

There will be four different categories of game introduced in our project:

1. IQ Test.
2. Personality Test.
3. Brain Dominance Test
4. Career Test

IQ Test:

Intelligence test is a measurement of an individual's functioning on a range of verbal and nonverbal or curriculum or non-curriculum events and can it contribute to a greater understanding of an individual makes of their environment. Intellectual ability of an individual reflects on a complex range of functions including attention, auditory, visual and tactile language, perception, memory and executive function. The most recent measure of IQ for children are done on the Wechsler scale although these are only done for abilities 2 standard deviations above or below average.

Interpretation of IQ should also consider social history as well as linguistic and cultural background. Testers should take into account the ability of planning and organize behaviour, enthusiasm, impulsivity, anxiety and persistence.

Although an estimate of ability has to be completed using a limited number of subtests from an IQ battery or a single vocabulary and/or problem by solving these types of tests these are not a substitute for a comprehensive assessment or cognitive ability. IQ tests are used for predicting the expected performance on maths, reading and language skills of an individual which can be helpful for young people in checking difficulty level in school. When assessing results, the relationship between accuracy, speed and comprehension is important to make differences between written and verbal maths skills should be considered when there are problems with numeracy.

Personality Test:

Personality is having a significant role to play to decide whether you have the enthusiasm and motivation that an employer is looking for. It also determines how well you are going to fit in to the organization, in terms of personality you are having, attitude and general work style? In most working situations it's the personalities of the people involved that affects the day-to-day success of the organization. If a manager can't motivate their staff or the team doesn't have to work well together, then quality of service and productivity will suffer.

These 5 traits/factors of personality are:

- Extraversion - In this test it can be determined how much energetic a person is. If a user is scoring high in this level then it

could be concluded that person can be talkative, enthusiastic, like to work in cooperation, on contrary if his score is low then user likes to be alone, difficult to be understood etc.

- Agreeableness – This test determines person's orientation towards other people. If the score is high in this test then person is cooperative and concerned with the well being of others. Else if the score is low then the person is argumentative and challenging.
- Conscientiousness – If the score of person is high in this test then the person is well structured else can be less structured but can be multi tasking.
- Neuroticism –High score in this test determines tendency to worry else a person is relaxed, calm.
- Openness to Experience – Person is imaginative, curious, sometimes unrealistic if score high in this test else person can be sometimes obstructive.

Brain Dominance test: -

Brain dominance test is a test to determine which part of the brain is dormant in an individual.

In the picture below you can see that brain is divided into two parts namely- left side and right side.

1. Left side brain dominant person can be:

Accused of being analytical, organized, often cautious, rules and schedule following, strong in maths and science, can answer questions quickly.

2. Right side brain dominant person can be:

Accused of being a dreamer, can be very intelligent and very deep thinkers, great students of social sciences and arts, spontaneous, likely to follow their own gut feelings, great skills at seeing through lies and tricks, would make great survivor contestants.

Brain dominance is the reason why you act or as you do you react the way you do you learn in a way you do you feel the way you feel

Every cell in the human body can be ruled by the brain. The brain can control how we can think, understand, see, hear, and learn.

2. LITERATURE SURVEY

When researching the effectiveness of brain games, a multitude of studies and data must be considered. This is particularly important when analysing the diverse evidence presented in each study, due to the varied style and approach, measurement techniques, methods, and participants used the experiments. However, outcomes regarding the effects memory games have on the brain remain controversial due to the conflicting results of many studies. The results of the literature review conducted are described below

Studies that support the use of brain games suggest that improving quality of life, increasing children's aptitude in school, and being able to expand memory and attention can in fact be accomplished through scientifically designed games.

In order to further understand the evidence that supports memory games, it is

essential to identify the objectives of these memory games. Product includes a series of online games and puzzles that allegedly work on several areas within the brain, using different types of games for diverse kinds of neurological improvement.

Since release of brain mapping game in 2005, there has been an influx of research conducted on training the working memory. During a recent experiment, the games and their goals were replicated and reconstructed to test individual's abilities to improve specific kinds of brain function. For example, the experiment: "Improving fluid intelligence with training on working memory" (2008) was conducted with memory games in order to thoroughly test improvements in

individual fluid intelligence levels within dynamic systems. The study defines fluid intelligence as solving problems with logic and solving new problems that are different from previously obtained knowledge stored in the brain. This experiment was conducted on 70 young participants, and had the individuals' sessions range from between 8 to 19 pre and post-test sessions, and 4 different training groups

3. METHODOLOGY

The system is intended to be used by 3 type of users which is represented in Fig 1.a , They will have immediate and direct involvement with game

A) Game designers: - They are authorized to upload new games and make edits to existing ones.

B) Users:- They are the ones who will take all the test on our system.. They can register for an account and also edit or manage their profiles.

C) System administrator: - They are the ones who will manage the existing games, approve new games, view reports on top scorers and handle competitions. They can also view the traffic reports and other statistical data.

- This report would contain all the necessary personal traits the user has.
- After that the user would be prompted to appear for other tests which would improve his weaker aspects.

4. IMPLEMENTATION

The game has been subdivided into 4 levels and each level has its own peculiar set of

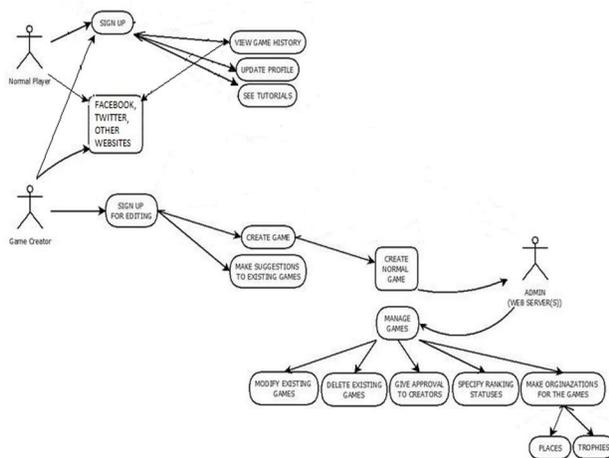


Fig 1.a Use Case diagram of the system

The flow of the system is depicted here.

- The user first needs to login. If he provides a correct set of username and password, then he will be able to login into the system and complete our preliminary survey.
- After that the user would be prompted to take the general IQ test. These test analyse all the aspects of the brain and after analysis the user would be provided with an in-depth report.

games. At the end of each level the player is provided with a detailed analysis of his performance. And after completing the last level, the player is provided with a detailed report consisting of an overview of his profile based on his responses provided in the preceding test.

As soon as the user visits our website he/she is greeted with an initial survey where some common questions are asked, then they are redirected to level 1

1.Level 1 :- IQ Test

As soon as the user reaches this level, they are provided with a set of instructions as to what they should expect from the test. All the rules and guidance are provided. The test consists of a set of games which are designed to test user’s ability to plan and assess the situation on a very high pace.

2.Level 2:- Personality Test

This test is somewhat different from the rest of them as it tries to analyse user’s attitude and provide them with a behavioural analysis. The test will provide the user with

different hypothetical situations and the user will be asked to assess. The result of this test would determine personality of the user whether he/she is greedy, tentative, calm, restless, obedient etc. The final output will show entire personality of the user.

3. Level 3 :- Brain Dominance Test

This is the most important test of all as it helps us determine which part of the user's brain is more dominant left or right. The more dominant side of the brain helps the user to shape his future. With a series of questions

(each belonging to different domains) we would be able to analyze the user's more dominant part of the brain.

4. Level 4 :- Career Test

Based on some specific questions user would be given. It interprets your analytical skills and will give you a verdict to choose a career path you can opt for. If user has answered most of the questions based on maths then we can suggest him fields like engineering, finance, statistical data arrangement or if the questions are more answered on science and technology then fields would be engineering and medical.

5. BENEFITS

- Nowadays most of the students are losing interest in reading books for knowledge development and are interacted towards gaming.
- This game would be helping not only to students but every age group

person to develop their knowledge for better living.

- This game would not take much efforts it just requires complete concentration with a little bit thinking ability to improve the skills.

6. CONCLUSION

- We can conclude that computer games, even though being more simplistic in terms of visual, activity, and interaction design, still

significantly enhance student's positive attitudes towards their academics.

- As this game is made with a purpose, our main motive is to make sharper thinking ability and stronger analytical skills of a person.
- This game will help the user to use their brain up to their optimum level and also to improve it.

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