

CLAIMS:

1. A system for providing a device-based multi-sensory therapeutic game comprising:
a component provision module, in communication with a database, configured to provide game components and a game generation framework;
a generator module, in communication with the component provision module, configured to generate, in real-time and using the game generation framework in conjunction with the database, scenes and assets including auditory game objects and visual game objects based on personalized user parameters; and
a display module configured to display, in real-time to the user, a game that concurrently provides a visual pathway challenge, an auditory pathway challenge and a cognitive pathway challenge to encourage neuroplasticity, the game including the game components, the auditory game objects and the visual game objects.
2. The system of claim 1 wherein the game components displayed by the display module comprise generic game components that are presented in a similar manner to any user, and the visual game objects and the auditory game objects comprise components that are based on personalized user parameters, and are presented in a different manner to different users depending on the associated personalized user parameters.
3. The system of claim 1 wherein the component provision module, the generator module and the display module cooperate to provide the device-based multi-sensory therapeutic game adapted to provide therapy for attention deficit hyperactivity disorder (ADHD).
4. The system of claim 1 wherein the scenes and assets including the auditory game objects and the visual game objects are generated independent of a language of game delivery.
5. The system of claim 1 wherein the game components, the auditory game objects and the visual game objects are provided in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in the first language.

6. The system of claim 1 wherein the game components, the auditory game objects and the visual game objects are provided in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in a second language, the second language being different from the first language.

7. A processor-implemented method for providing a device-based multi-sensory therapeutic game comprising:

obtaining, from a user condition database, personalized user parameters associated with a condition of the user for which the multi-sensory therapeutic game is designed to provide therapy;

generating, in real-time and using a game generation framework in conjunction with a game database, scenes and assets including auditory game objects and visual game objects based on the personalized user parameters; and

displaying, in real-time to the user, a game that concurrently provides a visual pathway challenge, an auditory pathway challenge and a cognitive pathway challenge to encourage neuroplasticity, the game including the auditory game objects and the visual game objects.

8. The method of claim 7 wherein the displayed game components comprise generic game components that are presented in a similar manner to any user, and the displayed visual game objects and the displayed auditory game objects comprise components that are based on personalized user parameters, and are presented in a different manner to different users depending on the associated personalized user parameters.

9. The method of claim 7 wherein displaying the game comprises simultaneously providing the visual pathway challenge, the auditory pathway challenge, and the cognitive pathway challenge.

10. The method of claim 9 wherein simultaneously providing the visual pathway

challenge, the auditory pathway challenge, and the cognitive pathway challenge comprises using complete words and their corresponding sounds.

11. The method of claim 7 wherein displaying the game comprises displaying both translucent and opaque moving masks to induce attention.

12. The method of claim 7 wherein displaying the game comprises providing a cognition inducing component selected from the group consisting of rhymes, pidgin English and homophones.

13. The method of claim 7 wherein displaying the game comprises interspersing repetitive language tasks with non-language mosaics.

14. The method of claim 7 wherein displaying the game comprises displaying motion graphics with embedded text.

15. The method of claim 7 wherein displaying the game comprises providing a reward comprising visual and aural feedback.

16. The method of claim 7 wherein displaying the game further comprises modifying at least one aspect of the displayed game based on a modification in one or more of the personalized user parameters.

17. The method of claim 7 wherein displaying the game further comprises modifying at least one aspect of the displayed game based on a measured result of the user in an evaluated portion of the game.

18. The method of claim 17 modifying the at least one aspect of the displayed game is performed based on a relationship of the measured result to either: an expected result for the user based on one or more of the personalized user parameters; or a game modification

threshold.

19. The method of claim 7 wherein displaying the game comprises displaying fast motion graphics in addition to the auditory game objects and the visual game objects.

20. The method of claim 7 further comprising:
creating the user condition database based on providing a pre-assessment exercise to the user and generating user condition data based on the user's results of performing the pre-assessment exercise.

21. The method of claim 7 wherein displaying the game comprises providing the auditory pathway challenge to address one or more phonological components.

22. The method of claim 21 wherein displaying the game comprises providing the auditory pathway challenge to address pronunciation.

23. The method of claim 7 wherein displaying the game comprises providing the visual pathway challenge to address one or more orthographic aspects.

24. The method of claim 23 wherein displaying the game comprises providing the visual pathway challenge to address spelling.

25. The method of claim 7 wherein displaying the game comprises providing the cognitive pathway challenge to address one or more motor or working memory aspects.

26. The method of claim 25 wherein displaying the game comprises providing the cognitive pathway challenge to address holding and processing information for a brief period of time.

27. The method of claim 7 wherein the obtaining, the generating and the displaying

cooperate to provide the device-based multi-sensory therapeutic game adapted to provide therapy for attention deficit hyperactivity disorder (ADHD).

28. The method of claim 7 wherein the scenes and assets including the auditory game objects and the visual game objects are generated independent of a language of game delivery.

29. The method of claim 7 wherein the game components, the auditory game objects and the visual game objects are displayed in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in the first language.

30. The method of claim 7 wherein the game components, the auditory game objects and the visual game objects are displayed in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in a second language, the second language being different from the first language.

31. A machine-readable memory storing statements and instructions for execution by the one or more processors to perform the method of any one of claims 7 to 30.

32. An apparatus for providing a device-based multi-sensory therapeutic game comprising:
one or more processors; and
a machine-readable memory storing statements and instructions for execution by the one or more processors to perform the method of any one of claims 7 to 30.

33. A system for providing a device-based multi-sensory learning development tool comprising:
a component provision module, in communication with a database, configured to provide game components and a game generation framework;
a generator module, in communication with the component provision module, configured to generate, in real-time and using the game generation framework in conjunction

with the database, scenes and assets including auditory game objects and visual game objects based on personalized user parameters; and

a display module configured to display, in real-time to the user, a learning development game that concurrently provides a visual pathway challenge, an auditory pathway challenge and a cognitive pathway challenge to encourage neuroplasticity, the game including the game components, the auditory game objects and the visual game objects.

34. The system of claim 33 wherein the game components displayed by the display module comprise generic game components that are presented in a similar manner to any user, and the visual game objects and the auditory game objects comprise components that are based on personalized user parameters, and are presented in a different manner to different users depending on the associated personalized user parameters.

35. The system of claim 33 wherein the component provision module, the generator module and the display module cooperate to provide the device-based multi-sensory learning development tool adapted to provide a learning development game adapted for attention deficit hyperactivity disorder (ADHD).

36. The system of claim 33 wherein the scenes and assets including the auditory game objects and the visual game objects are generated independent of a language of learning development tool delivery.

37. The system of claim 33 wherein the game components, the auditory game objects and the visual game objects are provided in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in the first language.

38. The system of claim 33 wherein the game components, the auditory game objects and the visual game objects are provided in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in a second language, the second language being different from the first language.

39. A processor-implemented method for providing a device-based multi-sensory learning development tool comprising:

obtaining, from a user condition database, personalized user parameters associated with a condition of the user for which the multi-sensory therapeutic game is designed to provide therapy;

generating, in real-time and using a game generation framework in conjunction with a game database, scenes and assets including auditory game objects and visual game objects based on the personalized user parameters; and

displaying, in real-time to the user, a learning development game that concurrently provide a visual pathway challenge, an auditory pathway challenge and a cognitive pathway challenge to encourage neuroplasticity, the game including the auditory game objects and the visual game objects.

40. The method of claim 39 wherein the displayed game components comprise generic game components that are presented in a similar manner to any user, and the displayed visual game objects and the displayed auditory game objects comprise components that are based on personalized user parameters, and are presented in a different manner to different users depending on the associated personalized user parameters.

41. The method of claim 39 wherein the obtaining, the generating and the displaying cooperate to provide the device-based multi-sensory learning development tool adapted to provide a learning development game adapted for attention deficit hyperactivity disorder (ADHD).

42. The method of claim 39 wherein the scenes and assets including the auditory game objects and the visual game objects are generated independent of a language of game delivery.

43. The method of claim 39 wherein the game components, the auditory game objects and the visual game objects are displayed in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in the first language.

44. The method of claim 39 wherein the game components, the auditory game objects and the visual game objects are displayed in a first language to concurrently challenge the user's visual pathway, auditory pathway and cognitive pathway in a second language, the second language being different from the first language.

45. A machine-readable memory storing statements and instructions for execution by the one or more processors to perform the method of any one of claims 39 to 44.

46. An apparatus for providing a device-based multi-sensory learning development tool comprising:

one or more processors; and

a machine-readable memory storing statements and instructions for execution by the one or more processors to perform the method of any one of claims 39 to 44.