**AULA nesplora**

|  |  |
|---|---|
| **Full name:** | Alex Anonymous |
| **Gender:** | Male |
| **Chronological Age:** | 12 years-old |
| **Date of Test Administration:** | 05/31/2011 |

This report is aimed to be used by the test administrator as a support for interpretation. This report must not be used as the unique resource for the clinical diagnosis or intervention.

**CLINIC DOCTOR EXAMPLE**

Clinic Address, City

| | |
|---|---|
| **Full name:** | Alex Anonymous |
| **Gender:** | Male |
| **Date of birth:** | 12/20/1998 |
| **Chronological Age:** | 12 years-old |

| | |
|---|---|
| **Date of Test** | the 05/31/2011 at 19:06 |
| **Time to completion:** | 0:12:33 |
| **Used scale:** | Male from 12 to 16 years. |

**Clinician's notes concerning history, observation and other test data:**

His parents came to the psychologist because Alex's academic performance was too low, they say he is a very impulsive kid, that he has a lot of difficulties for organization, he is easily distracted and he has a bad behavior in class.

**Observation notes from the AULA administration:**

Distractors affect you much (he even answers to the kids calling him...), he liked AULA a lot.

# 1 AULA EVALUATION REPORT

## 1.1 General Description

AULA NESPLORA is a continuous performance test (CPT) performed in a virtual reality classroom. This is accomplished by having the child wear a specially developed set of glasses containing a visual screen, headphones and movement sensors. The AULA CPT is designed to evaluate multiple aspects of attention, impulsivity, distractibility, motor activity and processing speed.

The virtual classroom is presented to the child from the perspective of a pupil's desk. The program continuously shifts the child's view of the classroom based on their head movements, providing them with the impression of actually being inside the classroom.

On the virtual blackboard and through the audio input, a series of stimuli are presented. The child responds according to instructions provided by the virtual teacher. The test consists of two tasks. In the first task, the child presses a switch anytime the stimulus on the blackboard is different from the identified target stimulus. On the second task, the child presses a switch anytime he/she hears or sees the target stimulus.

The report generated by AULA NESPLORA provides extensive graphics, tables and narrative reports. Obtained T-scores and percentiles are presented. The following summarizes the interpretation of T-scores and percentiles:

| T-SCORE | PERCENTILE | INTERPRETATION |
|---------|------------|----------------|
| 20 - 30 | <2nd | Very good performance |
| 31 - 40 | 2nd - 15th | Good performance |
| 41 - 60 | 17th - 83rd | Average |
| 61 - 70 | 85th - 98th | Below average performance |
| 71 - 80 | 98th - 99th | Poor performance |

## 2 Main indices
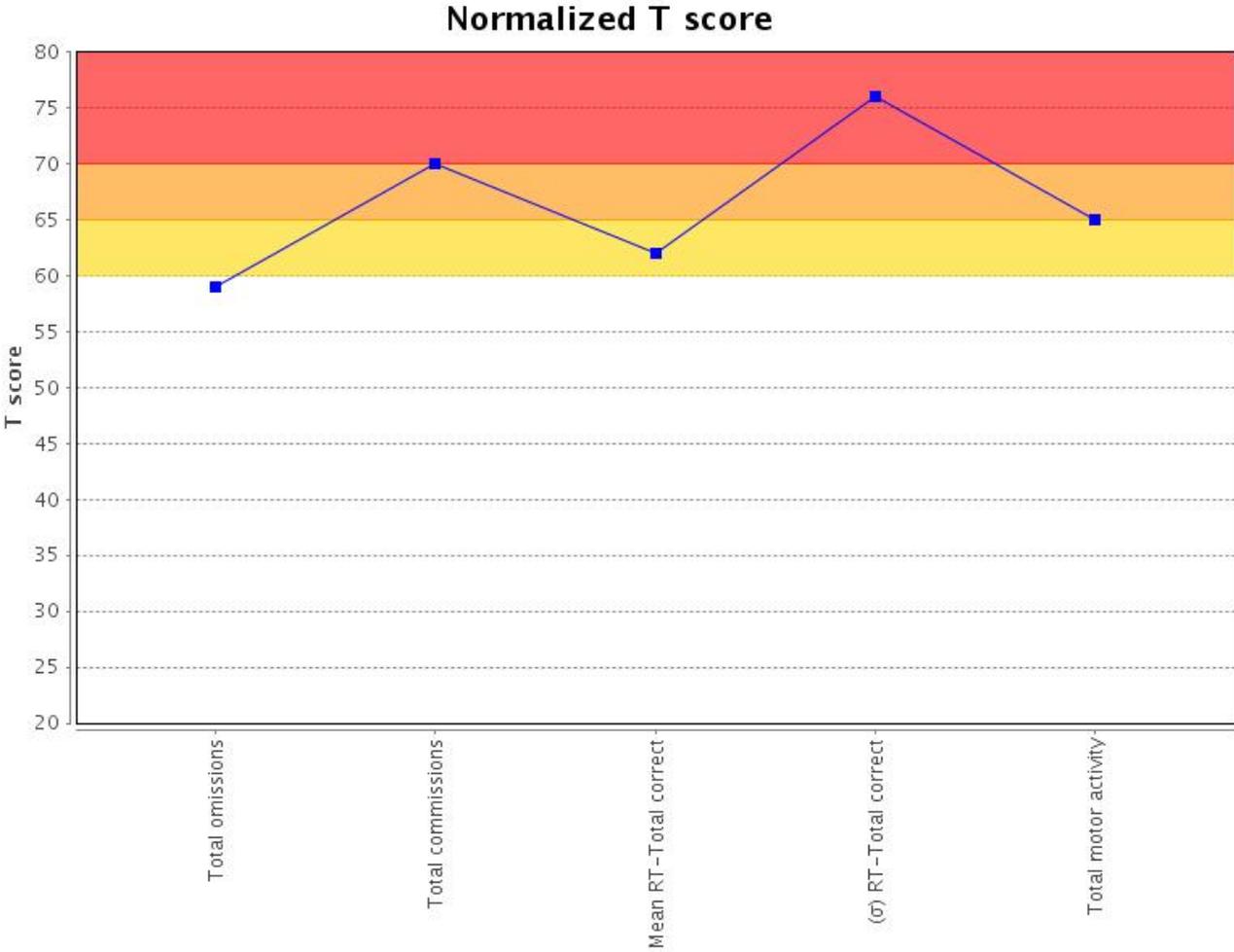


|  | Raw | Percentile | T scores |
|---|---|---|---|
| Total omission errors | 20.0 | 81 | 59 |
| Total commission errors | 33.0 | 98 | 70 |
| Mean RT-Total correct answers | 940.97 | 88 | 62 |
| (σ) Standard deviation RT-Total correct answers | 529.77 | 99 | 76 |
| Total motor activity | 0.99 | 93 | 65 |

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## 2.1 Index description

## Total omission errors

Omission errors occur when Alex must respond to the target stimulus but omits to do so.  Omission errors are considered a measure of selective and unfocused attention. Alex has obtained a score of 20 in Total omission errors. These data correspond to a percentile of 81 and a T-score of 59. This reflects a normal performance.

## Total commission errors

Commission errors occur when the target stimulus does not appear but the child presses the switch impulsively.  Commission errors reflect a lack of response inhibition and lack of motor control Alex has obtained a score of 33 in Total commission errors. These data correspond to a percentile of 98 and a T-score of 70 which indicates a poor performance.

## Mean RT (Response Time) over Total Correct Answers

Mean reaction time is a highly reliable measure of processing speed and answer consistency. It also reflects attention ability. Alex has obtained a score of 940.97 in Mean RT-Total correct answers. This data corresponds to a percentile 88 and a T score of 62 with respect to the normative sample, which indicates a poor performance.

## (σ) Standard deviation from RT (Responde time) over Total Correct Answersal

Deviation of reaction time is a measure of variability and answer inconsistency, and it can be a measure of decrease in vigilance. Alex has obtained a score of 529.77 in (σ) Standard deviation RT-Total correct answers. These data corresponds to a percentile of 99 and a T score of 76 with respect to a normative sample, which indicates a very poor performance.

## Total motor activity

Total motor activity is measured by the sensor from the glasses. It evaluates the child's head movements while he/she performs the exercise. That is, whether he/she has moved a lot or a little or in an unnecessary manner. Alex has obtained a score of 0.99 in Total motor activity. This data corresponds to a percentile of 93 and a T score of 65 with respect to the normative sample, which indicates a poor performance.
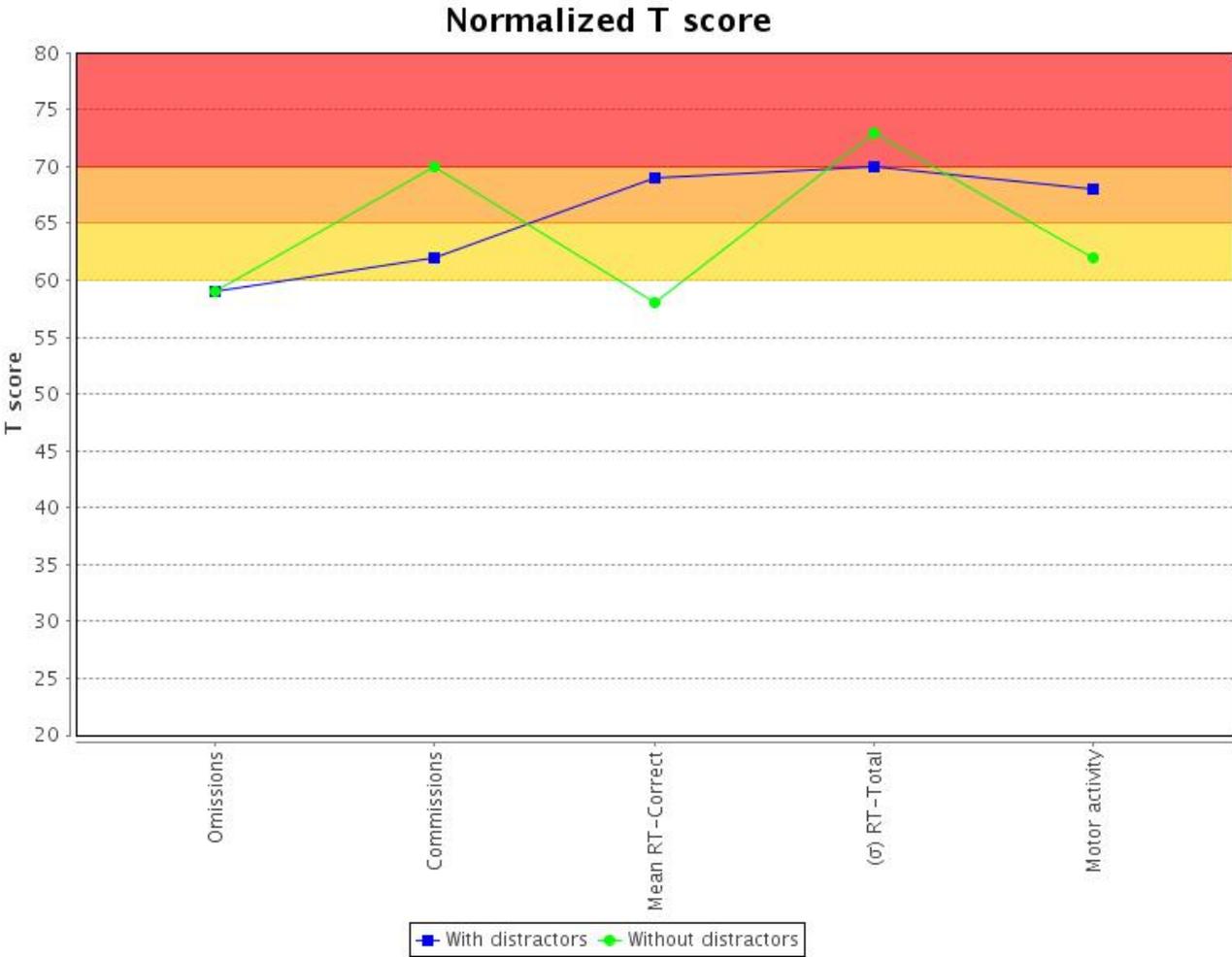
# 3 Task performance in presence and absence of distractors

AULA has analyzed Alex's performance in the presence and absence of distractors. The following figure and table demonstrate how much the distractors affected Alex during the test administration.



Normalized T score

| | With distractors | | | Without distractors | | |
|---|---|---|---|---|---|---|
| | Raw direct scores | Percentile | T scores | Raw direct scores | Percentile | T scores |
| Omissions | 8.0 | 81 | 59 | 12.0 | 82 | 59 |
| Commissions | 8.0 | 88 | 62 | 25.0 | 98 | 70 |
| Mean RT-Correct answers | 1064.45 | 97 | 69 | 858.65 | 78 | 58 |
| (σ) Standard deviation RT-Correct answers | 539.43 | 98 | 70 | 506.79 | 99 | 73 |
| Motor activity | 1.5 | 97 | 68 | 0.88 | 88 | 62 |

## 3.1 Motor activity graphics with relation to the distractors

These graphics reflect Alex's activity as compared to distractors. Peak of activity related to the distractor means that Alex followed the distractor with his/her head, shifting attention away from the task.



Task 1
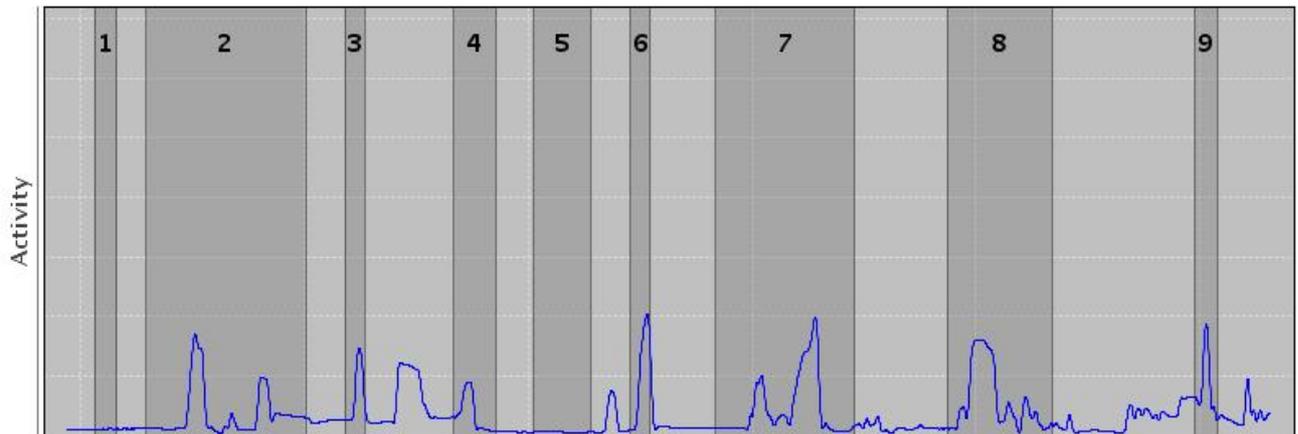


Task 2
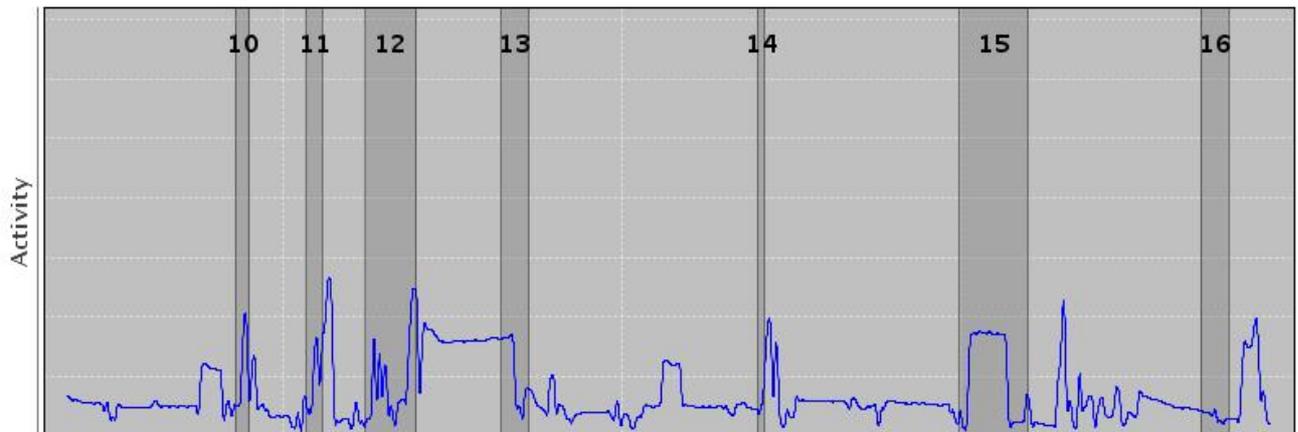
**Task 1 (NO-X)**

1. Paper ball
2. Teacher's walk
3. Whispering at the right
4. Teacher's ballpen drops
5. A boy passes a note
6. Someone coughs at the left
7. A boy handles a piece of paper to the teacher
8. An ambulance passes
9. The bell rings

**Task 2 (X)**

10. Whispering at the left
11. Someone coughs at the right
12. Step noise from the corridor
13. A kid at the left raises his hand
14. Someone is laughing
15. Somebody knocks on the door
16. A kid at the right raises his hand

# 4 Type of exercise

In AULA, Alex performed two tasks. In the first task, Alex must control impulses in the face of multiple stimuli. In the second task, a monotonous presentation of stimuli is designed to challenge sustained attention and concentration. The following table and graph demonstrate Alex's performance task by task.

## Normalized T score
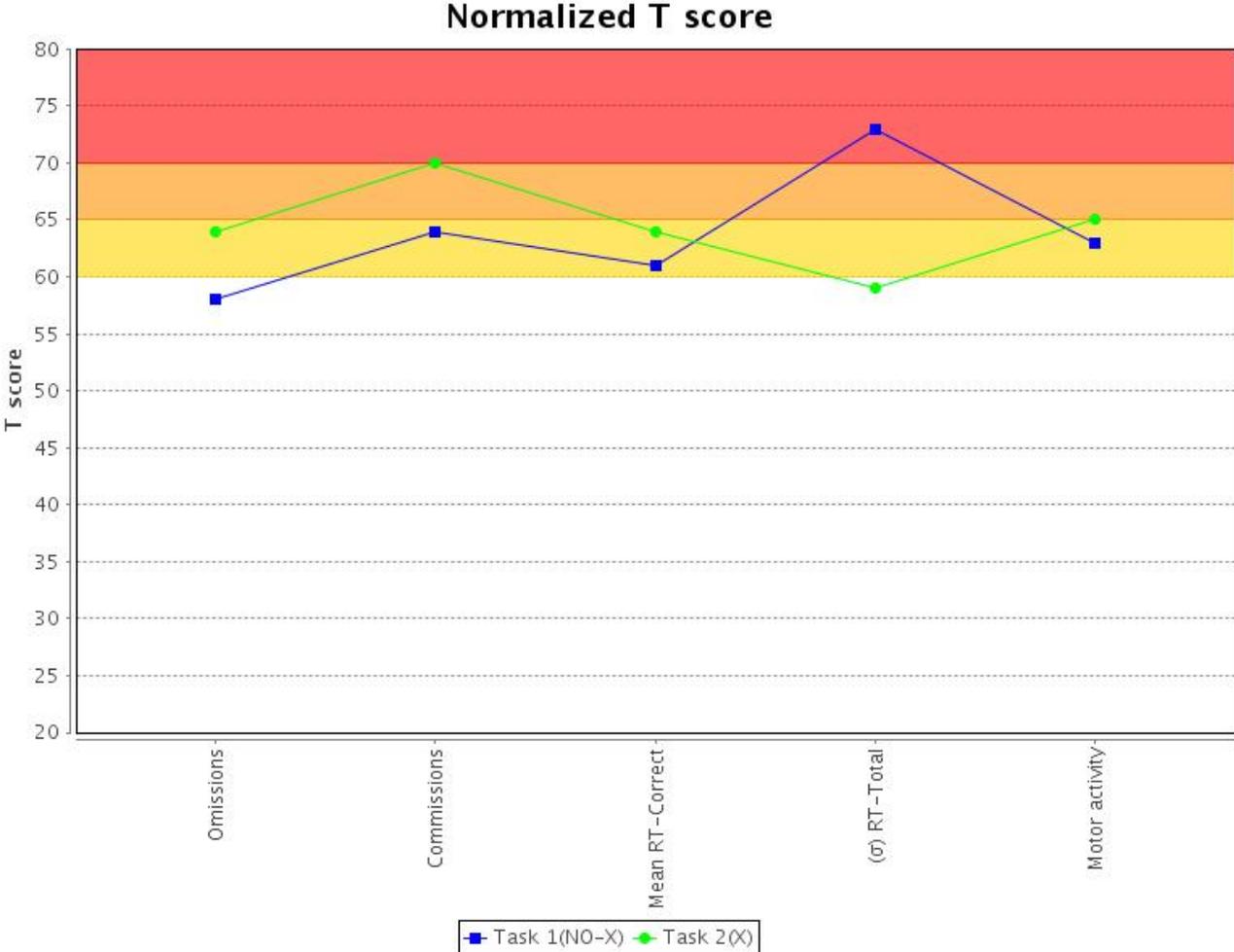


|  | Task 1 (NO-X) | | | Task 2 (X) | | |
|---|---|---|---|---|---|---|
|  | Raw direct scores | Percentile | T scores | Raw direct scores | Percentile | T scores |
| Omissions | 14.0 | 80 | 58 | 6.0 | 92 | 64 |
| Commissions | 15.0 | 91 | 64 | 18.0 | 98 | 70 |
| Mean RT-Correct answers | 929.18 | 86 | 61 | 992.07 | 92 | 64 |
| (σ) Standard deviation RT-Correct answers | 559.66 | 99 | 73 | 369.24 | 81 | 59 |
| Motor activity | 0.74 | 90 | 63 | 1.17 | 93 | 65 |

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# 5 Auditory and Visual Sensory Channels

Alex must respond to auditory and visual stimuli during the AULA tasks. The differences between auditory and visual processing is compared below in graph and tabular form.
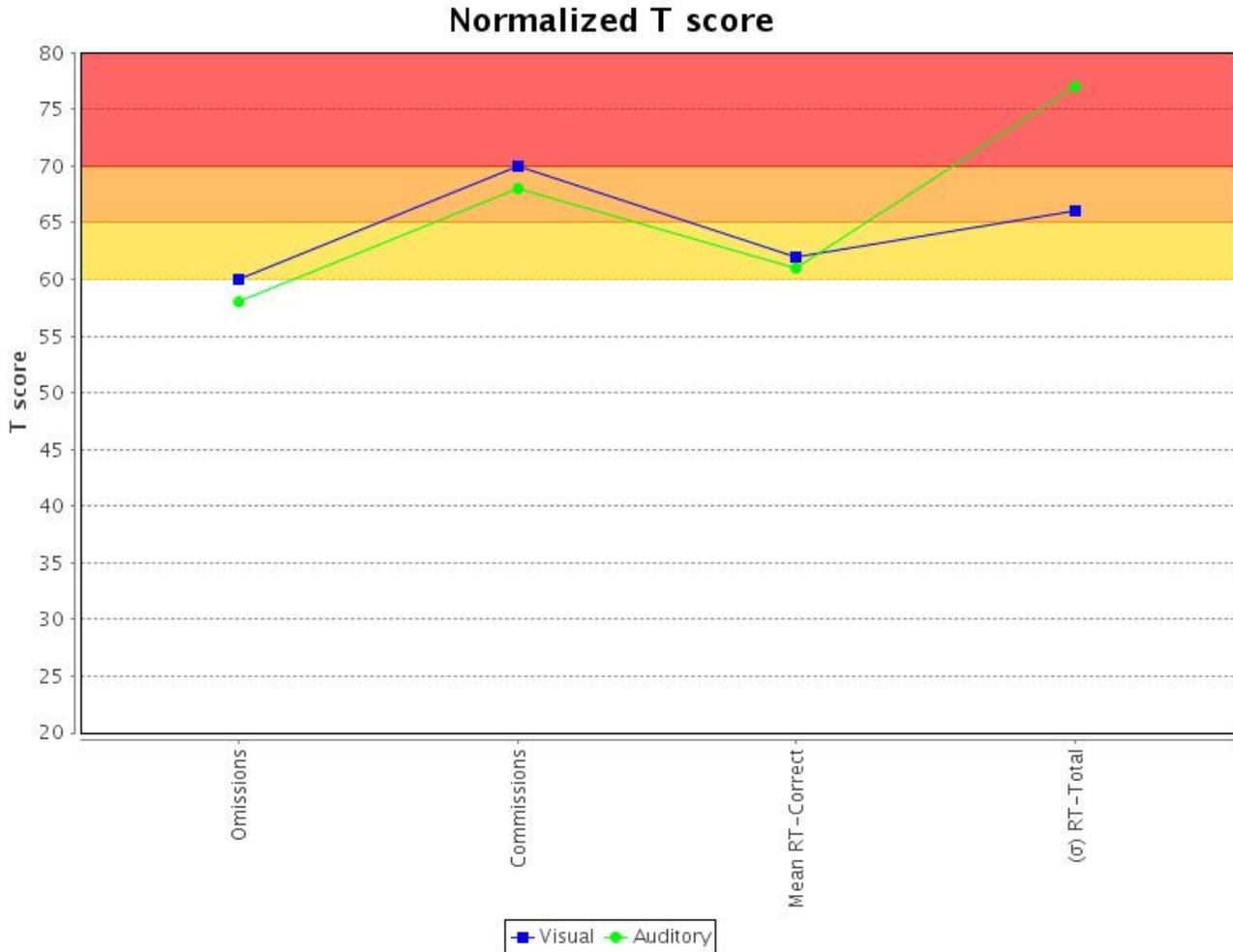


|  | Visual | | | Auditory | | |
|---|---|---|---|---|---|---|
|  | Raw direct scores | Percentile | T scores | Raw direct scores | Percentile | T scores |
| Omissions | 15.0 | 83 | 60 | 5.0 | 79 | 58 |
| Commissions | 23.0 | 98 | 70 | 10.0 | 97 | 68 |
| Mean RT-Correct answers | 719.85 | 89 | 62 | 1151.3 | 86 | 61 |
| (σ) Standard deviation RT-Correct answers | 377.48 | 95 | 66 | 566.86 | 99 | 77 |

# 6 Motor activity

The graphics below demonstrate Alex's head movement throughout the test. The yellow framework represents the zone in which the virtual blackboard can be seen. Movement out of that zone makes it impossible for the child to correctly perform the visual task. The dot diagram below provides a visual image of Alex's attention to the blackboard and to the general task. If Alex has looked to the blackboard's zone and has not performed the task correctly, internal distractors should be considered (see Quality of Attention).

|  | Raw direct | Percentile | T scores |
|---|---|---|---|
| Total motor activity | 0.99 | 93 | 65 |
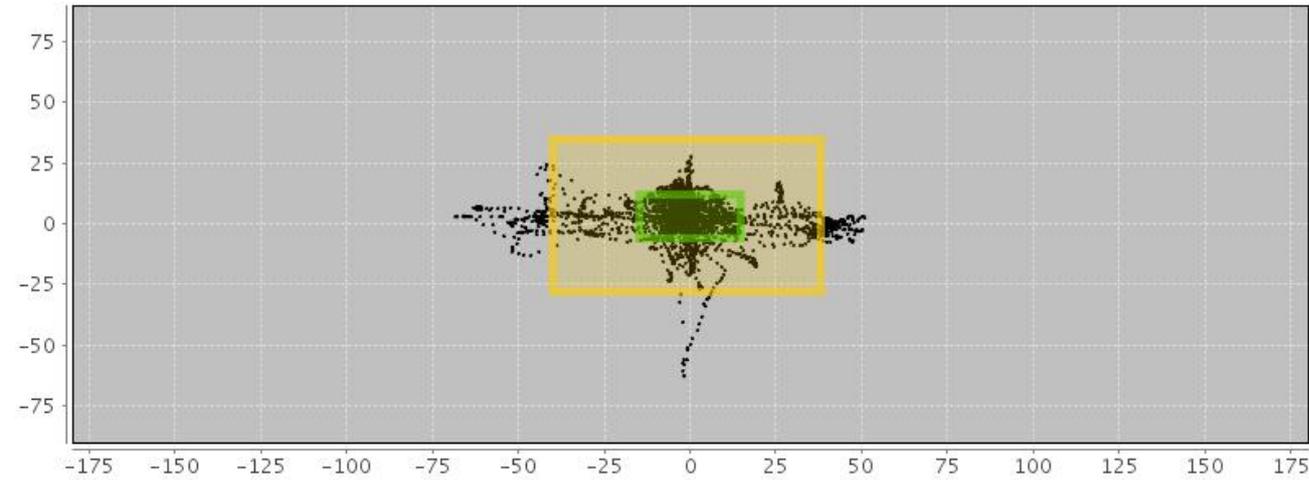


The index of motor activity can reflect many phenomena, including: a tendency to become distracted by external stimuli (see distractor graphic), motor activity with no relation to distractors or in the case of low a activity but poor task performance or possible internal distractors (see quality of attention graphic).
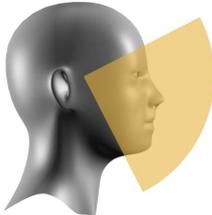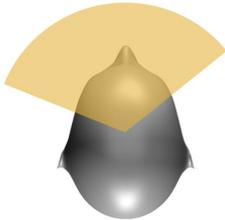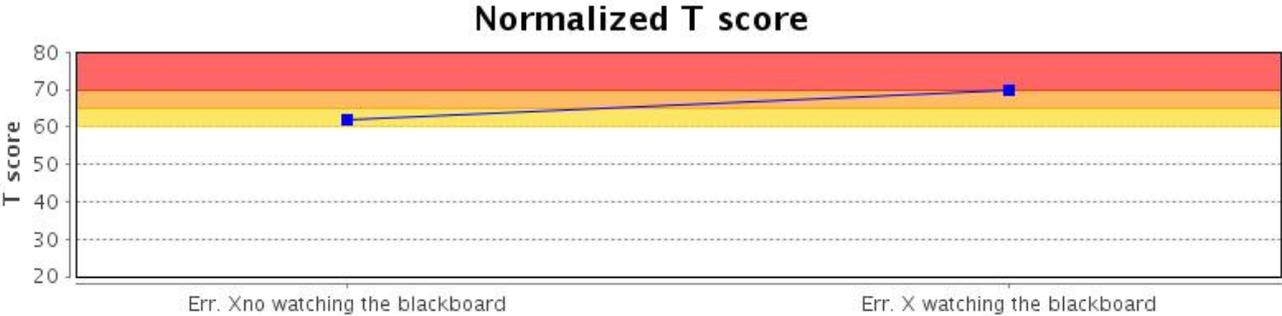
# 7 Attention focus quality

This measure unique to the AULA tasks, provides an observation of the child's attention when they are focused on the blackboard. These data compliment data from motor activity, providing input whether Alex's performance varies depending on either internal or external stimuli.



Normalized T score

|  | Raw | Percentile | T scores |
|---|---|---|---|
| Total errors in TASK 1 (X-NO) watching the blackboard | 23.0 | 88 | 62 |
| Total errors in TASK 2 (X) watching the blackboard | 13.0 | 98 | 70 |

At 03 17 2014

Doctor Example

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Profile of Alex Anonymous on 31/05/2011