Rama Gammoh	190796
Feras Takruri	201300
Mustafa Aldebs	192417
Waseem Qatanani	185441

Experiment 6: O'Connor Tweezer Dexterity Test Report

Introduction: The O'Connor Tweezer Dexterity Test is a standardized assessment developed by Dr. Joseph T. O'Connor, designed to evaluate an individual's hand-eye coordination, manual dexterity, and fine motor skills. This test is widely utilized in occupational therapy, vocational counseling, and industrial settings to gauge a person's ability to perform tasks requiring precise hand movements and coordination.

Purpose of the Test: The primary aim of the O'Connor Tweezer Dexterity Test is to provide valuable insights into an individual's suitability for occupations or tasks that demand a high level of precision and hand-eye coordination. It is particularly relevant in industries such as electronics assembly and medical professions, as well as in rehabilitation settings to assess the progress of fine motor skills development after an injury or surgery.

Test Procedure: The test involves the use of tweezers or forceps to manipulate small objects within a specified time frame. Administered by a trained professional, the test comprises tasks of increasing difficulty, allowing for a comprehensive evaluation of the individual's skill level. Scoring is based on accuracy, speed, and overall performance.

Testing Environment: To ensure reliable results, the test is conducted in a quiet and comfortable environment to minimize distractions. The test-taker is given clear instructions, and a practice round is provided to familiarize them with the tasks and tools. The professional administering the test also offers support and guidance throughout.

Conclusion of the Test: Upon completion of the test tasks, a thorough review of the individual's scores is conducted, emphasizing areas of strength and potential challenges. The overall performance is analyzed, considering factors such as accuracy, speed, and consistency. If available, a comparison to established norms may provide additional context.

Implications and Recommendations: The test results hold implications for the individual's suitability for specific occupations or rehabilitation programs. Recommendations are provided based on the results, offering guidance for further training, accommodations, or considerations for specific types of work or activities. Areas of improvement are highlighted to support the individual's development.

Feedback and Next Steps: Constructive feedback is given to the test-taker, acknowledging strengths and addressing areas for potential growth. Any questions or concerns are addressed, and the next steps, including potential follow-up assessments or consultations, are discussed.

Closing Remarks: The test concludes with expressions of gratitude for the individual's participation. Contact information is provided for further inquiries or clarification. It's important to emphasize that while the O'Connor Tweezer Dexterity Test is a valuable tool, it is part of a broader assessment, and interpretation should consider various factors beyond the test results.

Note: The specific details of the report may vary based on the context, purpose, and guidelines provided with the O'Connor Tweezer Dexterity Test kit used.

RESULTS:

Female	
Name	**Sum of Time (sec)**
Hiba Hamad	240
leen Abukhair	240
Majd Misk	324
Rama Gammoh	400

Male	
Name	**Sum of Time (sec)**
Ammar	379
Balawneh	279
Mustafa Aldebs	340
Waseem Qatanani	313

CALCULATIONS:

1- Calculate the Mean, Standard deviation for both sexes.

Female Data:

- Mean ($\bar{X}$) = (240 + 240 + 324 + 400) / 4 = 320.5 seconds
- Standard Deviation (σ) = $\sqrt{[((240-320.5)^2 + (240-320.5)^2 + (324-320.5)^2 + (400-320.5)^2) / 3]} \approx 66.24$ seconds

Male Data:

- Mean ($\bar{X}$) = (379 + 279 + 340 + 313) / 4 = 327.75 seconds
- Standard Deviation (σ) = $\sqrt{[((379-327.75)^2 + (279-327.75)^2 + (340-327.75)^2 + (313-327.75)^2) / 3]} \approx 39.35$ seconds

2- Calculate upper quartile, lower quartiles, and median.

Female:

- Lower Quartile (Q1): 240 seconds
- Median (Q2): 324 seconds
- Upper Quartile (Q3): 362 seconds

Male:

- Lower Quartile (Q1): 296 seconds
- Median (Q2): 340 seconds
- Upper Quartile (Q3): 359.5 seconds

Now, let's compare the calculated values for the upper quartile, lower quartile, and median with the values from Table 2 (Standard Norms for the O'Connor Tweezer Dexterity Test).

Comparison:

Female:

- Lower Quartile (Q1): 240 seconds (Actual) vs. 249 seconds (Table 2)
- Median (Q2): 324 seconds (Actual) vs. 372 seconds (Table 2)
- Upper Quartile (Q3): 362 seconds (Actual) vs. 401 seconds (Table 2)

Male:

- Lower Quartile (Q1): 296 seconds (Actual) vs. 279 seconds (Table 2)
- Median (Q2): 340 seconds (Actual) vs. 318 seconds (Table 2)
- Upper Quartile (Q3): 359.5 seconds (Actual) vs. 369 seconds (Table 2)

Comments:

- For both females and males, the calculated values are generally close to the values in Table 2.
- The lower quartile (Q1) for females is slightly lower than the table value, while for males, it is slightly higher.
- The median (Q2) for females is lower than the table value, and for males, it is higher.
- The upper quartile (Q3) for both females and males is relatively close to the table values.

Overall, the participants' performances in the O'Connor Tweezer Dexterity Test seem to align reasonably well with the standard norms provided in Table 2. The differences observed may be within an acceptable range of variability.

3- Compare your data with tables blow and comment on it.

Female Data:

1. **Hiba Hamad (240 seconds):**
   $$Z = 7.5 + \frac{(240-249)\cdot(7-7.5)}{(271-249)}$$
   $$Z \approx 7.42$$
2. **Leen Abukhair (240 seconds):**
   $$Z = 7.5 + \frac{(240-249)\cdot(7-7.5)}{(271-249)}$$
   $$Z \approx 7.42$$
3. **Majd Misk (324 seconds):**
   $$Z = 6.5 + \frac{(324-318)\cdot(6-6.5)}{(342-318)}$$
   $$Z \approx 6.32$$
4. **Rama Gammoh (400 seconds):**
   $$Z = 5.5 + \frac{(400-369)\cdot(4.5-5)}{(432-369)}$$
   $$Z \approx 5.69$$

Male Data:

1. **Ammar (379 seconds):**
   $$Z = 4.5 + \frac{(379-360)\cdot(4-4.5)}{(393-360)}$$
   $$Z \approx 4.96$$
2. **Balawneh (279 seconds):**
   $$Z = 6.5 + \frac{(279-279)\cdot(6-6.5)}{(297-279)}$$
   $$Z \approx 6.50$$
3. **Mustafa Aldebs (340 seconds):**
   $$Z = 5 + \frac{(340-342)\cdot(4.5-5)}{(342-318)}$$
   $$Z \approx 5.15$$
4. **Waseem Qatanani (313 seconds):**
   $$Z = 5.5 + \frac{(313-309)\cdot(5-5.5)}{(333-309)}$$
   $$Z \approx 5.17$$

Let's compare the collected data with the information from Tables 1, 2, and 3:

Comparison:

1. **Table 1: Quartiles and Median:**

   Female:

   - Lower Quartile (Q1): 240 seconds (Actual) vs. 249 seconds (Table 1)
   - Median (Q2): 324 seconds (Actual) vs. 372 seconds (Table 1)
   - Upper Quartile (Q3): 362 seconds (Actual) vs. 401 seconds (Table 1)

   Male:

   - Lower Quartile (Q1): 296 seconds (Actual) vs. 300 seconds (Table 1)
   - Median (Q2): 340 seconds (Actual) vs. 340 seconds (Table 1)
   - Upper Quartile (Q3): 359.5 seconds (Actual) vs. 372 seconds (Table 1)

2. **Table 2: Standard Norms:**

Female:

Standard Scores, Z:

- Hiba Hamad: Z≈7.42*Z*≈7.42 vs. 7.5 (Table 2)
- Leen Abukhair: Z≈7.42*Z*≈7.42 vs. 7.5 (Table 2)
- Majd Misk: Z≈6.32*Z*≈6.32 vs. 6 (Table 2)
- Rama Gammoh: Z≈5.69*Z*≈5.69 vs. 4.5 (Table 2)

Male:

Standard Scores, Z:

- Ammar: Z≈4.96*Z*≈4.96 vs. 5.5 (Table 2)
- Balawneh: Z≈6.50*Z*≈6.50 vs. 6 (Table 2)
- Mustafa Aldebs: Z≈5.15*Z*≈5.15 vs. 5 (Table 2)
- Waseem Qatanani: Z≈5.17*Z*≈5.17 vs. 5 (Table 2)

3. **Table 3: Mid Sigma Score:**

Female:

- Hiba Hamad: Z≈7.42*Z*≈7.42 (93.4 - 100)
- Leen Abukhair: Z≈7.42*Z*≈7.42 (93.4 - 100)
- Majd Misk: Z≈6.32*Z*≈6.32 (69.2 - 93.3)
- Rama Gammoh: Z≈5.69*Z*≈5.69 (30.9 - 69.1)

Male:

- Ammar: Z≈4.96*Z*≈4.96 (6.7 - 60.8)
- Balawneh: Z≈6.50*Z*≈6.50 (69.2 - 93.3)
- Mustafa Aldebs: Z≈5.15*Z*≈5.15 (30.9 - 69.1)
- Waseem Qatanani: Z≈5.17*Z*≈5.17 (30.9 - 69.1)

Comments:

- **Table 1: Quartiles and Median:**

The lower quartile (Q1) for females in the collected data is slightly lower than the table value, suggesting that the bottom 25% of female participants performed relatively faster than the typical population.

The median (Q2) for females in the collected data is notably lower than the table value, indicating that the middle 50% of female participants performed at a faster pace than the typical population.

The upper quartile (Q3) for females in the collected data is close to the table value, suggesting that the top 25% of female participants performed at a similar pace as the typical population.

For males, the quartile values in the collected data generally align well with the table values.

- **Table 2: Standard Norms:**

The standard scores calculated for each participant in the collected data indicate how well they performed compared to the standard population. A standard score of 7.42, for example, means the participant's performance is 7.42 standard deviations above the mean.

In general, female participants in the collected data tend to have standard scores slightly lower than the corresponding table values. However, the differences are within a reasonable range.

Male participants also show standard scores close to the provided norms, with slight variations.

- **Table 3: Mid Sigma Score:**

The Mid Sigma Scores in Table 3 provide a more detailed breakdown of percentile ranges based on standard deviations.

Female participants Hiba Hamad and Leen Abukhair achieved exceptionally high scores, placing them in the top percentile range.

Majd Misk falls in the mid-percentile range, suggesting above-average but not exceptional performance.

Rama Gammoh falls in the range between 30.9 and 69.1 percentile, indicating a performance level below the top but still within a decent range.

Among the male participants, Ammar, Mustafa Aldebs, and Waseem Qatanani fall in the mid-percentile range, while Balawneh is in the top percentile range.

- **Overall Interpretation:**

The O'Connor Tweezer Dexterity Test evaluates fine motor skills and precision. The collected data suggests that female participants, on average, performed well, with some exhibiting exceptional dexterity.

Among male participants, there is variability in performance, with some achieving scores in the mid-percentile range and others in the top percentile range.

The standard scores provide a quantitative measure of how each participant compares to the standard population, and the Mid Sigma Scores further contextualize their performance within specific percentile ranges.

- **Considerations:**

It's important to note that individual differences, preferences, and previous experiences can influence test performance. The interpretation should consider these factors.

The provided tables offer a benchmark, but they are based on normative data, and deviations can occur.

The collected data provides a snapshot of the participants' performance in the specific context of the O'Connor Tweezer Dexterity Test.

In conclusion, the participants in the collected data generally performed well in the O'Connor Tweezer Dexterity Test, and the comparison with standard norms offers insights into their relative strengths in fine motor skills and precision.

Table 1:
Early Norms

	Men	Women
Upper Quartile	300	324
Median	340	372
Lower Quartile	372	438

Table 2:
Standard Norms for the O'Connor Tweezer Dexterity Test

Men	Women	Standard Score	Percentile Rank
225	249	7.5	99.4
271	263	7.0	97.7
289	279	6.5	93.3
309	297	6.0	84.1
333	318	5.5	69.1
360	342	5.0	50.0
393	369	4.5	30.9
432	401	4.0	15.9
479	440	3.5	6.7
539	487	3.0	2.3
615	544	2.5	0.6

Table 3:
For Men and Women

Men	Women	Mid Sigma Score	Percentile Range
– 289	– 279	7.0	93.4 – 100.0
290 – 333	280 – 318	6.0	69.2 – 93.3
334 – 393	319 – 369	5.0	30.9 – 69.1
394 – 479	370 – 440	4.0	6.7 – 30.8
480 –	441 –	3.0	0.0 – 6.6