O'Connor Finger Dexterity Test

User's Manual

Lafayette Instrument

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Description

The O'Connor Finger Dexterity Test has been used successfully as a predictor wherever rapid manipulation of objects, especially the picking up and placing of small parts, is important. This is best illustrated in assembly line work such as the setting of pivots, registering of gear train assemblies and many other operations required in the production of meters. It has also been found useful in predicting success in instrument work which requires the assembling of armatures, miniature parts, assembling of clocks and watches, rapid hand work in the filling of vials, small lathe work and machine winding.

Parts

1	11 x 5 ½ Formica-topped masonite board with a molded shallow well below which are 100 holes measuring 3/16 inch in diameter arranged in ten rows of ten holes each. Holes are spaced one-half inch apart.
315	Pins one inch long and about 1/16 inch in diameter. Up to three pins can be inserted in each hole.

Test Administration

Subject

The subject should be seated comfortable at a table measuring approximately 30 inches in height. Place test (pins in well) before the subject about 12" from table's edge and to the subject's right if he/she is right handed. Place test to left if subject is left handed.

Note: Since the rapidity of changing the pins is affected by the condition of the fingernails, it is suggested that all examinees have their fingernails freshly and uniformly clipped.

Examiner

The examiner should read the following instructions:

"The board in front of you consists of 100 holes, each hole is large enough to hold three pins. Pick up three pins at a time and fill the holes, placing three pins in each as fast as you can. Use only one hand. Start in the farthest corner from you working left to right (or right to left for left handed subjects) and work toward you, like this ." (Demonstrate)

"If you start in the corner nearest you, your sleeve or finger may catch the pins. Be sure to fill each row completely before you start the next. Do not skip around. There are enough pins in this tray so that if you drop one or two on the floor, you will still have enough left. Do not stop to pick them up. Begin only when I give you the command "BEGIN", and do not stop until the entire board is filled."

Practice

Have the subject place thirty (30) pins, thus filling the top line of ten holes, for practice. Allow neither more nor less than the prescribed practice of filling the top ten holes, since this affects the performance on the test. Tip the pins out, allow a moment's rest.

Test

Instruct the subject to begin. Time accurately with a stopwatch, watching the number of seconds required to fill the board. Record the first fifty holes AND the second fifty.

Total administration time varies, according to a person's speed, from about 8 to 16 minutes.

The score on the FINGER DEXTERITY TEST is computed as follows:

The number of seconds that have been taken to fill the SECOND HALF of the board is multiplied by 1.1. The mean of this value and the number of seconds taken to fill the FIRST HALF of the board is computed; i.e.:

$$\text{Raw Score} = \frac{\text{First Half Time} + (1.1 \times \text{Second Half Time})}{2}$$

Example: If a subject filled the first half of the board in 243 seconds and the second half in 225 seconds, his score would be:

$$\text{R.S.} = (243 + 1.1(225))/2$$
$$\text{R.S} = 245.25$$

Table 1:

Standard Norms for the O'Connor Finger Dexterity Test

Raw Scores (in seconds)

Men	Women	Standard Score	Percentile Rank
183	166	8.0	99.86
194	175	7.5	99.4
207	186	7.0	97.7
221	197	6.5	93.3
238	211	6.0	84.1
257	226	5.5	69.1
280	244	5.0	50.0
307	265	4.5	30.9
340	290	4.0	15.9
382	319	3.5	6.7
434	356	3.0	2.3
503	402	2.5	0.6
598	462	2.0	0.14

For simplicity in scoring, Table 2 presents the information depicted in Table 1 in compact summarized form.

Table 2:

Standard Scores for Men and Women

Men	Women	Mid Sigma Score	Percentile Range
– 221	– 197	7.0	93.4 – 100.0
222 – 257	198 – 226	6.0	69.2 – 93.3
258 – 397	227 – 265	5.0	30.9 – 69.1
398 – 382	266 – 319	4.0	6.7 – 30.8
383 –	320 –	3.0	0.0 – 6.6

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Scores have also been obtained on the basis of occupation. In Table 3, there are six different types of skills with the average standard scores in column 1 and the percentage of people in the general population who do not obtain these scores in column 2.

Table 3:

Standard Scores for Six Occupations

	Standard Score	Population Below this Value
Women engaged in meter and instrument assembly	5.7	76
Bank Tellers	5.86	80
Garage Mechanics	5.03	50
Skilled Workers	4.9	46
Semi-skilled Workers	4.9	46
Butter-Wrappers (1 lb. Blocks)	4.57	36

Women who were successful in the assembling of meters and other instruments had higher average scores than the general population, and all women in this group who made a standard score of 5.1 or better were successfully employed. Only one-third of those who scored below 5.1 was able to do the work. This fact taken together with other evidence shows that the chances of satisfactory adjustment to factor operations requiring rapid manipulation of small objects are not very good if an employee scores below the average for this test. If he had a score as high as 5.5, it is quite likely that he has the necessary mechanical aptitude. Skilled or semi-skilled operators taken as a whole have, on the average, a higher score than the average entire general population. This shows that the ability measured by this test is a specialized one and also that there are many manual occupations in which it are not involved. It is important to notice that there are several apparently similar but nevertheless distinct kinds of dexterity.

Those who were employed to wrap one-pound packages of butter, for example, did not excel on the average in the kind of dexterity measured by this test but almost all of them did better than the average person on the Minnesota Rate of Manipulation Test.

Statistics

Despite its wide use, relatively little was known about the reliability and validity of this test until recent years.

The University of Minnesota Employment Stabilization Research Institute has provided norms for an adult population and has used the test in developing occupational ability patterns.

References

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Hines, Mildred and O'Connor, Johnson, "A Measure of Finger Dexterity". *Personnel Journal*, 4: 1926, 379-382.

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Cleaning Instructions

Isopropyl alcohol is preferred. Lysol wipes and Hydrogen Peroxide wipes are also OK. Do not use bleach or ammonium based glass cleaner. Clean pins with Isopropyl alcohol only.

Disclaimer: The cleaning instructions for Lafayette Instrument products are a recommendation of compatible cleaning materials only. Product end users are responsible for instituting an appropriate cleaning regimen utilizing best practices and techniques. Lafayette Instrument assumes no responsibility for the cleanliness or sanitation of the products after initial use nor makes any claim that the use of the recommended cleaning materials mitigates all risk of potential cross infection.

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Notes

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There is a $50 minimum order. Open accounts can be extended to most recognized businesses. Net amount due 30 days from the date of shipment unless otherwise specified by us. Enclose payment with the order; charge with VISA, MasterCard, American Express, or pay COD. We must have a hard copy of your purchase order by mail, E-mail or fax. Students, individuals and private companies may call for a credit application.

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If ordering instrumentation for use outside the USA, please specify the country of ultimate destination, as well as the power requirements (110V/60Hz or 220V/50Hz). Some model numbers for 220V/50Hz will have a "*C" suffix.

Quotations
Quotations are supplied upon request. Written quotations will include the price of goods, cost of shipping and handling, if requested, and estimated delivery time frame. Quotations are good for 30 days, unless otherwise noted. Following that time, prices are subject to change and will be re-quoted at your request.

Cancellations
Orders for custom products, custom assemblies or instruments built to customer specifications will be subject to a cancellation penalty of 100%. Payment for up to 100% of the invoice value of custom products may be required in advance. Cancellation for a standard Lafayette Instrument manufactured product once the product has been shipped will normally be assessed a charge of 25% of the invoice value, plus shipping charges. Resell items, like custom products, will be subject to a cancellation penalty of 100%.

Exchanges and Refunds
Please see the cancellation penalty as described above. No item may be returned without prior authorization of Lafayette Instrument Company and a Return Goods Authorization (RGA#) number which must be affixed to the shipping label of the returned goods. The merchandise should be packed well, insured for the full value and returned along with a cover letter explaining the reason for return. Unopened merchandise may be returned prepaid within thirty (30) days after receipt of the item and in the original shipping carton. Collect shipments will not be accepted. Product must be returned in saleable condition, and credit is subject to inspection of the merchandise.

Repairs
Instrumentation may not be returned without first receiving a Return Goods Authorization Number (RGA). When returning instrumentation for service, please call Lafayette Instrument to receive a RGA number. Your RGA number will be good for 30 days. Address the shipment to:

Lafayette Instrument Company
3700 Sagamore Parkway North
Lafayette, IN 47904, USA.

Shipments cannot be received at the PO Box. The items should be packed well, insured for full value, and returned along with a cover letter explaining the malfunction. An estimate of repair will be given prior to completion ONLY if requested in your enclosed cover letter. We must have a hard copy of your purchase order by mail or fax, or repair work cannot commence for non-warranty repairs.

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Damaged instrumentation should not be returned to Lafayette Instrument prior to a thorough inspection. If a shipment arrives damaged, note damage on delivery bill and have the driver sign it to acknowledge the damage. Contact the delivery service, and they will file an insurance claim. If damage is not detected at the time of delivery, contact the carrier/shipper and request an inspection within 10 days of the original delivery. Please call the Lafayette Instrument Customer Service Department for repair or replacement of the damaged merchandise.

Limited Warranty
Lafayette Instrument Company warrants equipment manufactured by the company to be free of defects in material and workmanship for a period of one year from the date of shipment, except as provided hereinafter. The original manufacturer's warranty will be honored by Lafayette Instrument for items not manufactured by Lafayette Instrument Company, i.e. resell items. This assumes normal usage under commonly accepted operating parameters and excludes consumable products.

Warranty period for repairs or used instrumentation purchased from Lafayette Instrument is 90 days. Lafayette Instrument Company agrees either to repair or replace, at its sole option and free of part charges to the customer, instrumentation which, under proper and normal conditions of use, proves to be defective within the warranty period. Warranty for any parts of such repaired or replaced instrumentation shall be covered under the same limited warranty and shall have a warranty period of 90 days from the date of shipment or the remainder of the original warranty period whichever is greater. This warranty and remedy are given expressly and in lieu of all other warranties, expressed or implied, of merchantability or fitness for a particular purpose and constitutes the only warranty made by Lafayette Instrument Company.

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Limited Obligations Covered by this Warranty

1. In the case of instruments not of Lafayette Instrument Company manufacture, the original manufacturer's warranty applies.
2. Shipping charges under warranty are covered only in one direction. The customer is responsible for shipping charges to the factory if return of the part is required.
3. This warranty does not cover damage to components due to improper installation by the customer.
4. Consumable and or expendable items, including but not limited to electrodes, lights, batteries, fuses, O-rings, gaskets, and tubing, are excluded from warranty.
5. Failure by the customer to perform normal and reasonable maintenance on instruments will void warranty claims.
6. If the original invoice for the instrument is issued to a company that is not the company of the end user, and not an authorized Lafayette Instrument Company distributor, then all requests for warranty must be processed through the company that sold the product to the end user, and not directly to Lafayette Instrument Company.

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