Personality Types

Performance on Aptitude & Achievement Tests

Donald Sefcik, DO, MBA
Director of Academic Innovation & Psychometrics
Senior Associate Dean
College of Osteopathic Medicine
Michigan State University

Overview

Aptitude and Achievement tests
- MCAT and COMLEX

Personality Types
- Myers-Briggs Type Indicator (MBTI)

Recommendations
- Preparing for tests based on MBTI

Aptitude & Achievement Tests

Aptitude tests
- Predict future capability
  - Broad context / novel situations
  - Suitability

Aptitude & Achievement Tests

Achievement tests
- Assess learning after training is completed
  - Narrow context / familiar situations
  - Summative evaluation
Aptitude & Achievement Tests

Continuum

Utility

Examples

Myers-Briggs Type Indicator

Myers-Briggs Type Indicator

One way to represent the intrinsic appeal of:
- what we do
- how we like to do it

Scored on four dichotomous dimensions
MBTI = 4 Dimensions

- Introvert / Extrovert  
  *Source of energy*
- Sensing / Intuitive  
  *Information handling*
- Thinking / Feeling  
  *Decision-making*
- Judging / Perceiving  
  *Dealing with the world*

Myers-Briggs Type Indicator

Scored on four dichotomous dimensions

- the score represents the response strength ("preference")

Preference Clarity Index

J  

**J**  

P  

***PCI indicates how clear your preference is; not your competence***

Myers-Briggs Type Indicator

Scored on four dichotomous dimensions

- Final result is a four-letter “TYPE”

MBTI = 16 Types

<table>
<thead>
<tr>
<th>ISTJ</th>
<th>ISFJ</th>
<th>INFJ</th>
<th>INTJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISTP</td>
<td>ISFP</td>
<td>INFP</td>
<td>INTP</td>
</tr>
<tr>
<td>ESTP</td>
<td>ESFP</td>
<td>ENFP</td>
<td>ENTP</td>
</tr>
<tr>
<td>ESTJ</td>
<td>ESFJ</td>
<td>ENFJ</td>
<td>ENTJ</td>
</tr>
</tbody>
</table>
**MBTI = Mental Function Pairs**

- Introvert / Extrovert
- Sensing / Intuitive
- Thinking / Feeling
- Judging / Perceiving

Source of energy

Information handling

Decision-making

Dealing with the world

**MBTI = 4 Mental Function Pairs**

<table>
<thead>
<tr>
<th>ISTJ</th>
<th>ISFP</th>
<th>INTP</th>
<th>ENTJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISFP</td>
<td>ISTP</td>
<td>ENTP</td>
<td>INFP</td>
</tr>
<tr>
<td>INTP</td>
<td>ISFP</td>
<td>ENFP</td>
<td>ENTP</td>
</tr>
<tr>
<td>ENTJ</td>
<td>ENFP</td>
<td>ENFP</td>
<td>ENTP</td>
</tr>
</tbody>
</table>

**S/N: How information is “handled”**

- **S** = Sensing Function
  - Facts *in the present*

- **N** = Intuitive Function
  - Possibilities *in the future*

**T/F: Decision-making**

- **T** = Thinking Function
  - Logic

- **F** = Feeling Function
  - Value / Impact

**Optimal Approach to Information**

*Zig-Zag Technique*

- **S** (facts, details)
- **T** (logic)
- **N** (patterns)
- **F** (value/impact)

**Typical Approach**

*ST and NF*

- **S** (facts, details)
- **T** (logic)
- **N** (patterns)
- **F** (value/impact)

*Myers, McCaulley, Quenk & Hammer 1998. MBTI Manual*
Typical Approach

Test Performance: S-N and T-F

MBTI – Achievement tests
- Physiology and Neurochemistry courses
- Medical School courses
- NBME (foreunner to USMLE)

MBTI - Aptitude tests
- SAT

Literature Review

MBTI - Achievement tests
- Physiology (n = 163; undergraduates)
  - ST = 158.5
  - NF = 147.5
  - NT = 144.4
  - SF = 139.9

Tharp GD 1992; Advances Physiology Education

Wild & Skipper 1991; Academic Medicine

Literature Review

MBTI - Achievement tests
- Neurochemistry course (n = 137; MS1’s)
  - ST = 76.2%
  - SF = 76.1%
  - NF = 74.3%
  - NT = 67.0%

Kim S 1999; Korean Journal Medical Education

O’Donnell MJ 1982; Journal of Medical Education

Literature Review

MBTI - Achievement tests
- Medical School coursework (n = 269; MS1-4)
  - T > F

Literature Review

MBTI - Achievement tests
- NBME (n = 99)
  - NF = 42% failure rate on first attempt

Kim S 1999; Korean Journal Medical Education

O’Donnell MJ 1982; Journal of Medical Education
Literature Review

MBTI - Aptitude tests

- SAT

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>565.7</td>
<td>544.1</td>
</tr>
<tr>
<td>Verbal</td>
<td>549.4</td>
<td>495.5</td>
</tr>
</tbody>
</table>

**Myers, McCaulley & Quenk 1978**
MBTI Manual

---

Impact: S-N and T-F

Osteopathic Medical Students

- COMLEX
- MCAT

Table 1

<table>
<thead>
<tr>
<th>MBTI Function Pair</th>
<th>Score, Mean (ISO)</th>
<th>MCAT</th>
<th>COMLEX-USA Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing-Thinking 52</td>
<td>26.1 (2.7)</td>
<td>535.2 (75.8)</td>
<td></td>
</tr>
<tr>
<td>Intuition-Thinking 42</td>
<td>26.1 (2.8)</td>
<td>520.0 (95.0)</td>
<td></td>
</tr>
<tr>
<td>Sensing-Feeling 59</td>
<td>25.4 (2.2)</td>
<td>515.9 (71.9)</td>
<td></td>
</tr>
<tr>
<td>Intuition-Feeling 110</td>
<td>26.3 (2.7)</td>
<td>493.5 (61.7)</td>
<td></td>
</tr>
<tr>
<td>Total 263</td>
<td>26.0 (2.4)</td>
<td>$124.4 (73.8)</td>
<td></td>
</tr>
</tbody>
</table>

**Abbreviations**: COMLEX USA, Comprehensive Osteopathic Medical Licensing Examination USA; MBTI, Myers-Briggs Type Indicator; MCAT, Medical College Admission Test.

---

Table 2

<table>
<thead>
<tr>
<th>MBTI Function Pair</th>
<th>Score, Mean (ISO)</th>
<th>MCAT</th>
<th>COMLEX-USA Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing-Thinking 52</td>
<td>26.1 (2.7)</td>
<td>535.2 (75.8)</td>
<td></td>
</tr>
<tr>
<td>Intuition-Thinking 42</td>
<td>26.1 (2.8)</td>
<td>520.0 (95.0)</td>
<td></td>
</tr>
<tr>
<td>Sensing-Feeling 59</td>
<td>25.4 (2.2)</td>
<td>515.9 (71.9)</td>
<td></td>
</tr>
<tr>
<td>Intuition-Feeling 110</td>
<td>26.3 (2.7)</td>
<td>493.5 (61.7)</td>
<td></td>
</tr>
<tr>
<td>Total 263</td>
<td>26.0 (2.4)</td>
<td>$124.4 (73.8)</td>
<td></td>
</tr>
</tbody>
</table>

**Abbreviations**: COMLEX USA, Comprehensive Osteopathic Medical Licensing Examination USA; MBTI, Myers-Briggs Type Indicator; MCAT, Medical College Admission Test.

---

Table 3

<table>
<thead>
<tr>
<th>MBTI Function Pair</th>
<th>Score, Mean (ISO)</th>
<th>MCAT</th>
<th>COMLEX-USA Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing-Thinking 52</td>
<td>26.1 (2.7)</td>
<td>535.2 (75.8)</td>
<td></td>
</tr>
<tr>
<td>Intuition-Thinking 42</td>
<td>26.1 (2.8)</td>
<td>520.0 (95.0)</td>
<td></td>
</tr>
<tr>
<td>Sensing-Feeling 59</td>
<td>25.4 (2.2)</td>
<td>515.9 (71.9)</td>
<td></td>
</tr>
<tr>
<td>Intuition-Feeling 110</td>
<td>26.3 (2.7)</td>
<td>493.5 (61.7)</td>
<td></td>
</tr>
<tr>
<td>Total 263</td>
<td>26.0 (2.4)</td>
<td>$124.4 (73.8)</td>
<td></td>
</tr>
</tbody>
</table>

**Abbreviations**: COMLEX USA, Comprehensive Osteopathic Medical Licensing Examination USA; MBTI, Myers-Briggs Type Indicator; MCAT, Medical College Admission Test.
Impact: S-N and T-F

Osteopathic Medical Students

- **COMLEX Level 1**
- **COMLEX Level 2**

<table>
<thead>
<tr>
<th>MBTI Mental-Function Pair</th>
<th>Level 1</th>
<th>Level 2-CE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Score, Mean (SD)</td>
</tr>
<tr>
<td>Sensing-thinking</td>
<td>52</td>
<td>53.3 (27.4)</td>
</tr>
<tr>
<td>Intuition-thinking</td>
<td>48</td>
<td>52.0 (26.9)</td>
</tr>
<tr>
<td>Sensing-feeling</td>
<td>98</td>
<td>51.5 (9.9)</td>
</tr>
<tr>
<td>Intuition-feeling</td>
<td>110</td>
<td>49.5 (11.7)</td>
</tr>
<tr>
<td>Total</td>
<td>262</td>
<td>512.4 (73.6)</td>
</tr>
</tbody>
</table>

**Abbreviations:** CE, Cognitive Evaluation; COMLEX-USA, Comprehensive Osteopathic Medical Licensing Examination USA; MBTI, Myers-Briggs Type Indicator

Review to this point

**Test Types**
- **Aptitude** - Predict future capability
- **Achievement** - Assess learning after training

**MBTI Types**
- **Information (in)** = S (facts) or N (patterns)
- **Decision (out)** = T (logic) or F (value)

Opportunities as Educators

**MBTI = Increase self-awareness**

- Personality’s influence on Achievement tests
- Impact of Preferences (natural tendencies)
- Opportunity to Self-regulate (modify approach)

Preferences / Tendencies

<table>
<thead>
<tr>
<th>S</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details and Facts</td>
<td>Big Picture</td>
</tr>
<tr>
<td>Sequential Approach</td>
<td>Innovative Approach</td>
</tr>
<tr>
<td>Practical Application</td>
<td>Future Possibilities</td>
</tr>
<tr>
<td>Like to Memorize</td>
<td>Like to Self-direct</td>
</tr>
<tr>
<td>MAY miss possibilities</td>
<td>MAY miss reality</td>
</tr>
<tr>
<td>“Soundness” of understanding</td>
<td>“Quickness” of understanding</td>
</tr>
</tbody>
</table>

**T**

<table>
<thead>
<tr>
<th>T</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective and Impersonal</td>
<td>Worthwhile or Not</td>
</tr>
<tr>
<td>Serial Learning</td>
<td>Random Learning</td>
</tr>
<tr>
<td>Notice inconsistency</td>
<td>Maintain harmony</td>
</tr>
<tr>
<td>Left Hemisphere</td>
<td>Right Hemisphere</td>
</tr>
<tr>
<td>“Logic”</td>
<td>“Value”</td>
</tr>
</tbody>
</table>

Myers, McCaulley & Quenk; MBTI Manual
Suggested Study Behaviors

- **ST**
  - Avoid memorizing the information
  - Work from details to big picture / concepts
  - Build chunks and patterns from the facts
  - Study in a structured area

- **SF**
  - Avoid selective reading
  - Read from beginning to end
  - Explain it to a colleague
  - Relate to the information

- **NT**
  - Avoid looking for the big picture
  - Understand why
  - Work from conclusion to details
  - Use more drills / repetition

- **NF**
  - Avoid daydreaming
  - Create a plan / follow a routine
  - Organize the material; Compare and Contrast details
  - Ask for feedback (and listen to it)

Use all four Mental Functions

- **S** (facts, details)
- **N** (patterns)
- **T** (logic)
- **F** (value/impact)

Thank You

*Are there some questions?*

Donald Sefcik, DO, MBA
sefcik@msu.edu