Finnish Language Proficiency of Immigrant Physicians in Medical Licensure Examinations

Maija Tervola, maija.tervola@staff.uta.fi
MA, Researcher, Doctoral Candidate
School of Languages, Translation and Literary Studies
University of Tampere
Finland
Research team

**Linguistics:**
Maija Tervola, MA, researcher, doctoral student, University of Tampere
Anneli Pajunen, PhD, professor in Finnish language, University of Tampere
Mari Honko, PhD, post doc researcher, University of Tampere
Seppo Vainio, PhD, post doc researcher, University of Turku

**Medicine:**
Kari Mattila, PhD, professor emeritus of medicine, University of Tampere

**Article published in February 2015:**
Medical Licensure Process for Physicians from Non-EU/EEA Countries

• Medical School Diploma verified by Valvira
• 6 month’s practice
• Finnish language test (National Certificate of Language Proficiency, “YKI”)
• Medical Licensure Examinations (MLE)
  1. Examination, written, clinical knowledge
  2. Examination, written, Finnish health care policies
  3. Examination, practical, videotaped reception with a patient

Licence to practice medicine in Finland
Medical Licencure Examinations MLE

• Failing rates 59–81 % in 2008–2011 (Haukilahti et al. 2012)
• Language of examination: Finnish (or Swedish)
• Organizers question candidates’ language skills.
• General concern about physicians’ language skills.

• Consequence: Re-evaluation and rearrangement of the language education and testing of immigrant physicians (MINEDU 2014)
Research elsewhere 1/2

USA:

• Spoken English proficiency assessed in clinical situation was related to TOEFL scores but in written proficiency the relation was weak. (Boulet et al. 2001)

• When assessing communication skills of physicians, contexts specific language tests proved to be more valid than generic tests (Baig et al. 2009)

• Generic language tests (TOEIC, SPEAK) were not sensitive enough to assess language skills needed in clinical environment (Eggly et al. 1999)
Research elsewhere 2/2

UK:
• Despite of the high scores in language tests, immigrant physicians had language related problems at work. (Mahajan & Stark 2007)

Australia:
• The standardized language test proved to be a weak indicator of language skills at work. (Chur-Hansen et al. 1997)
Research problems

• What is the role of the candidates’ language skills in the success in medical exams? Does the lack of language skills explain the high failing rates?

• How is it possible to measure language skills from examination papers?

• What kind of problems and requirements are there, when assessing language proficiency in demanding and specific contexts?
Data and methods

• **Data**: 72 medical exam papers (in total 74 500 words)

• **Linguistic analysis**
  1) **Writing skills**
     • Four-trait evaluation tool:
       Comprehension, coherence, word structure, syntactic relations
     • Double-blind evaluation, agreement 90%
     • Five skill levels: 1=poor, 2–4=average, 5=good
  2) **Vocabulary (word frequency)**
     • Only the ordinary vocabulary, no medical terminology
     • Three frequency levels: 1–3K, 4–8K, 9–11K

• **Correlations between linguistic analyses and MLE scores**
An example of the data

“kysella 68 vuotias nainen, joille on kylki kutitaa, kosketu arka, todenakoinen ds: vyöruusu (periferinen hermon vaurio, virusi aiheuttua.)”

- Red font: morphologic / phonologic problem
- Underlined: problem in syntactic relations

Translation:
At issue is a 68 years old woman whose side is itching and sore, the most probable diagnosis: shingles (peripheral neural damage, caused by a virus.)

Medical exam: passed
Linguistic performance: poor
## Results

<table>
<thead>
<tr>
<th>Writing skills evaluation</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 poor</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>2 average</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>3 average</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>4 average</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>5 good</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>72</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Average scores of MLE in different writing skills groups

Average scores out of 120

Writing skills evaluation: 1=weakest, 5=best

1: 49
2: 55
3: 55
4: 63
5: 70
MLE passing rates in different writing skills groups

Writing evaluation: 1=weakest, 5=best

Passing rate, %

- Writing evaluation 1: 25%
- Writing evaluation 2: 31%
- Writing evaluation 3: 38%
- Writing evaluation 4: 62%
- Writing evaluation 5: 71%
Word frequency with relation to the success in MLE

Candidates grouped by success in MLE:

<table>
<thead>
<tr>
<th></th>
<th>Best &gt;60 %</th>
<th>Middle 40−60 %</th>
<th>Weak &lt;40 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency level 1-3000</td>
<td>-3.2 %</td>
<td>0.2 %</td>
<td>4.8 %</td>
</tr>
<tr>
<td>Frequency level 3001-8000</td>
<td>4.5 %</td>
<td>1.6 %</td>
<td>-10.1 %</td>
</tr>
<tr>
<td>Frequency level 8001-</td>
<td>14.9 %</td>
<td>-2.6 %</td>
<td>-17.9 %</td>
</tr>
</tbody>
</table>
The role of the frequency in language learning

<table>
<thead>
<tr>
<th>HIGH FREQUENCY</th>
<th>LOW FREQUENCY</th>
<th>CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>kaatua</em> ’to fall’</td>
<td><em>kompastua</em> ’to trip’</td>
<td>more accurate</td>
</tr>
<tr>
<td><em>liukastua</em> ’to slip’</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>ruoka</em> ’food’</td>
<td><em>ruokavalio</em> ’a diet’</td>
<td>more abstract</td>
</tr>
<tr>
<td><em>mennä hyvin</em> ’to go well’</td>
<td><em>menestyä</em> ’to succeed’</td>
<td>more idiomatic</td>
</tr>
</tbody>
</table>
### The role of the frequency in language learning

<table>
<thead>
<tr>
<th>HIGH FREQUENCY</th>
<th>LOW FREQUENCY</th>
<th>CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>kaatua</strong> ’to fall’</td>
<td><strong>kompastua</strong> ’to trip’</td>
<td>more accurate</td>
</tr>
<tr>
<td>63/million</td>
<td>4,3/million</td>
<td></td>
</tr>
<tr>
<td><strong>liukastua</strong> ’to slip’</td>
<td><strong>ruokavalio</strong> ’a diet’</td>
<td>more abstract</td>
</tr>
<tr>
<td>2,5/million</td>
<td>45/million</td>
<td></td>
</tr>
<tr>
<td><strong>ruoka</strong> ’food’</td>
<td><strong>menestyä</strong> ’to succeed’</td>
<td>more idiomatic</td>
</tr>
<tr>
<td>269/million</td>
<td>77/million</td>
<td></td>
</tr>
<tr>
<td><strong>mennä hyvin</strong> ’to go well’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1212/million, 1060/million</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Frequencies: Finnish Internet Corpus, 119.6 million text words
Conclusion

• There are correlations between linguistic performance and MLE evaluation.
• Some papers did not match the minimal criteria of the mandatory language test taken before MLE.
• In some papers grammatical and lexical inaccuracies may occur in every other word.

The mandatory language test does not serve as a valid measurement tool for immigrant physicians.
Discussion

- Health care – a high risk environment

- High-standard and high-stakes language testing: A conflict between efficiency and accuracy (Lam 2010; Harrington & Carey 2009; Harrington & Roche 2014)

- How to improve efficiency and validity of testing?
  - Context specificity (Baig et al. 2009; MINEDU 2014)
  - Systemization of assessment (Decoo 2011; Vainio et al. 2014)
Systemization of assessment

- **Basic level**: Measuring phonological awareness (Lam 2010; Vainio et al. 2014)

- **Advanced level**: Measuring lexical knowledge (Harrington & Roche 2014; Lam 2006; Morris & Cobb 2004)
References


