MOTIVATION AND SECOND OR FOREIGN LANGUAGE PROFICIENCY IN A DIAGNOSTIC FRAMEWORK

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DIALUKI = DIAGNOSING READING AND WRITING IN A SECOND OR FOREIGN LANGUAGE (2010-2013)

- Academy of Finland, University of Jyväskylä, ESRC (Economic & Social Research Council, UK)
- Principal investigator: J. Charles Alderson (Lancaster University, UK)
- Development of reading and writing in S/FL
- Can different L1 and L2 linguistic measures predict difficulties in SFL R/W?
- How does SFL proficiency in R/W develop in psycholinguistic and linguistic terms?
  → Helps to develop diagnostic instruments
Diagnosis of S/FL Learning

- Focus on language learners’ strengths and weaknesses; on their prediction, even explanation.
- Very under-developed and under-theorised in language testing and teaching (compared to e.g. L1 reading).
- Diagnosis requires a better understanding of language abilities at a less general level than is currently the case.
- Need to define constructs both theoretically and operationally.

(see Alderson 2005, 2007; Huhta 2008)
THREE STUDIES

Study 1 (in 2010-11): A cross-sectional study with 3 x 200 + 250 students.
- Exploring the value of a range of L1 & L2 measures in predicting L2 reading & writing, in order to select the best predictors for further studies.

Study 2 (in spring 2012): Several training / experimental studies, each a few weeks in length
- The effects of training on SFL reading and writing
- Using computerized learning games in L1 and L2.
  - *Graphogame* for diagnosing & treating dyslexia

- The development of literacy skills, and the relationship of this development to the diagnostic measures.
Participants of Study 1 (2010-11)

- Finnish as L1 – English as L2
  - primary school (4th grade, 10 year-olds) (n= 210)
  - lower secondary school (8th grade, 14 year-olds) (n=208)
  - gymnasium (academically oriented upper secondary school) 2nd year students 17-18-year-olds (n=218)

- Russian as "L1" – Finnish as "L2"
  - primary school (3-6th grade) (n=186)
  - lower secondary school (7-9th grade) (n=79)

- From 111 schools around Finland
Language tasks (group tasks)

- Reading tasks in L1 (ALLU, PIRLS, PISA)
- Reading tasks in L2 (Pearson, Dialang, YKI (National Foreign Language Certificate))
- Writing tasks in L1 (Cefling-project)
- Writing tasks in L2 (Pearson, Cefling-project)

- Self-assessment task: reading and writing in L1 and L2 (lower secondary school and gymnasium)
- Other language tasks: dictation in L2, segmentation in L1 & L2, spelling in L1
Psycholinguistic and cognitive tasks

- Individual tasks on a computer
- E.g.
  - Effectiveness of working memory (e.g. Backwards digit span)
  - Nonword reading, writing, repetition and manipulation
  - Speed and accuracy of reading (words)
Questionnaires

- Parent’s questionnaire
- Student’s questionnaire
- Motivational questionnaire (about learning L2)
MOTIVATIONAL QUESTIONNAIRE 1/3

- The original questionnaire was created by Janina Iwaniec, PhD student at the University of Lancaster, supervised by Dr Judit Kormos
- We translated the questionnaire into Finnish and adapted it to the Finnish context.
- We also left out 5/12 areas in the original due to time constraints, on the advice of Dr Kormos and our Advisory Board (Ideal L2 Self, Self-efficacy Beliefs, International Orientation scale, Peer Pressure and Knowledge Orientation)
The questionnaire we used in DIALUKI for 8th graders and gymnasium students had 58 statements that were grouped into:

- Instrumentality
- Intrinsic Interest
- Motivational Intensity
- Parental Encouragement
- Anxiety
- Self-regulation
- English Self-concept

Primary school version had only 49 statements from the same areas
## Motivational Questionnaire 3/3

<table>
<thead>
<tr>
<th>I.</th>
<th>Not true at all</th>
<th>Only a little bit true</th>
<th>Partly true and partly untrue</th>
<th>Almost entirely true</th>
<th>Absolutely true</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyydän apua vaikkapa opettajalta tai kaverilta, jos en ymmärrä jotakin englannin tunnilla.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Haluaisin osata englantia tosi hyvin.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Yritän aina tehdä parhaani, kun opiskelen englantia.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Minua hermostuttaa kovasti, kun tiedän, että minulta kysytään jotakin englannin tunnilla.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Olen hyvä englannissa muihin meidän luokan oppilaisiin verrattuna.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Isän ja äidin mielestä englanti on tärkeä koulutaine.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
ENGLISH SELF-CONCEPT

- Compared to other students, I'm good at English.
- I have always done well in English.
- Studying English is easy for me.
- I get good marks in English.
- I learn English quickly.
- I’m better at English than most of my classmates.

Items dropped
- I am hopeless when it comes to English.
- I am satisfied with how well I do in English.
INTRINSIC INTEREST

- I am curious about how people communicate in English.
- I find learning English enjoyable.
- I am highly interested in English.
- I study English because I'd really like to be good at it.
- I am curious to find out the meanings of new words in English.
- I like solving challenging tasks in English.

Items dropped

- I would like to master English
- I feel good when I have managed to complete a task in English
- When I learn something new in English, I feel happy and satisfied
- I am happy when I see that I am making progress in English.
INSTRUMENTALITY

- The things I want to do in the future require me to use English.
- I study English because it will be useful to get a job.
- I study English because it will be necessary to work worldwide.
- I study English because I would like to spend some time abroad.
- I need English for my future career.
- I study English as it will help me to earn good money.

No items dropped
MOTIVATIONAL INTENSITY

- When studying English, I try to do it with my best effort.
- When I get my assignments back from my English teacher, I check them and try to learn something from my mistakes.
- I try to speak English as much as possible.
- I keep up to date with English by working on it almost every day.
- I really work hard to learn English.

Items dropped

- When I study English, I seldom do more than is necessary.
- I often skimp on my English homework.
- I put off my English homework as much as possible.
PARENTAL ENCOURAGEMENT

- My parents consider English an important subject
- My parents encourage me to study English also in my free time
- My parents encourage me to learn English.
- My parents think I need to know English to be educated.
- My parents feel that it is very important for me to learn English.
- My parents have stressed the importance English will have for me when I leave school.
- My parents encourage me to practice my English as much as possible.

No items dropped
SELF REGULATION

- I try to find opportunities to practice my English
- I have my own ways of studying English vocabulary.
- I have my own special techniques to make even the most boring activities more interesting.
- I use my own techniques to keep me focused on studying English.
- I study English as long as it takes me to achieve my own goals.
- If there is something I don’t understand in English, I do my best to find the answer in a variety of resources (coursebooks, dictionaries, online resources).

Items dropped

- I study for every English lesson, even if I know I won't be tested
- I plan my preparation and reviews before the test.
- When studying English, I arrange my environment to make learning more efficient.
ANXIETY

- I tremble when I know I'm going to be called on in English class.
- Even if I'm well prepared for the English class, I feel anxious about it.
- It embarrasses me to volunteer answers in my language class.
- I feel more tense and nervous in my language class than in my other classes.
- I'm afraid other students will laugh at me when I speak English.
- I start to panic when I have to speak without preparation in English class.

Items dropped

- I worry about the consequences of failing tests, assignments and exams in English.
# Motivational Questionnaire

## Factor Structure & Reliability

<table>
<thead>
<tr>
<th>Factor</th>
<th># variables (# dropped)</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; grade</th>
<th>8&lt;sup&gt;th&lt;/sup&gt; grade</th>
<th>Gymnasium</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; grade</th>
<th>8&lt;sup&gt;th&lt;/sup&gt; grade</th>
<th>Gymnasium</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>6 (0)</td>
<td>6 (1)</td>
<td></td>
<td>.860</td>
<td>.896</td>
<td>.888</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Self Concept</td>
<td>7 (1)</td>
<td>6 (2)</td>
<td></td>
<td>.907</td>
<td>.946</td>
<td>.947</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrumentality</td>
<td>4 (2)</td>
<td>6 (0)</td>
<td></td>
<td>.630</td>
<td>.832</td>
<td>.856</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>7 (2)</td>
<td>6 (4)</td>
<td></td>
<td>.874</td>
<td>.858</td>
<td>.862</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivational Intensity</td>
<td>6 (2)</td>
<td>5 (3)</td>
<td></td>
<td>.685</td>
<td>.768</td>
<td>.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental Encouragement</td>
<td>6 (0)</td>
<td>7 (0)</td>
<td></td>
<td>.919</td>
<td>.884</td>
<td>.894</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Regulation</td>
<td>4 (2)</td>
<td>6 (3)</td>
<td></td>
<td>.664</td>
<td>.814</td>
<td>.779</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preliminary results - please do not quote.
### MOTIVATIONAL QUESTIONNAIRE DESCRIPTIVE STATISTICS 2

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>4th grade Mean (1 – 5 scale)</th>
<th>8th grade Mean</th>
<th>Gymnasium Mean</th>
<th>4th grade Std. deviation</th>
<th>8th grade Std. deviation</th>
<th>Gymnasium Std. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>2.20</td>
<td>1.81</td>
<td>1.90</td>
<td>1.08</td>
<td>.87</td>
<td>.84</td>
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<tr>
<td>English Self Concept</td>
<td>3.48</td>
<td>3.42</td>
<td>3.26</td>
<td>.97</td>
<td>1.06</td>
<td>1.04</td>
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<tr>
<td>Instrumentality</td>
<td>4.22</td>
<td>3.58</td>
<td>3.74</td>
<td>.69</td>
<td>.85</td>
<td>.82</td>
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<tr>
<td>Intrinsic Interest</td>
<td>4.02</td>
<td>3.49</td>
<td>3.65</td>
<td>.89</td>
<td>.88</td>
<td>.81</td>
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<tr>
<td>Motivational Intensity</td>
<td>3.73</td>
<td>3.28</td>
<td>3.18</td>
<td>.70</td>
<td>.80</td>
<td>.76</td>
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<tr>
<td>Parental Encouragement</td>
<td>4.33</td>
<td>3.38</td>
<td>3.41</td>
<td>.83</td>
<td>.86</td>
<td>.81</td>
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<tr>
<td>Self Regulation</td>
<td>3.61</td>
<td>3.21</td>
<td>3.13</td>
<td>.88</td>
<td>.82</td>
<td>.73</td>
</tr>
</tbody>
</table>

Preliminary results - please do not quote.
## RESULTS

- Correlation of factors in Motivation Questionnaire with **Reading in English**

<table>
<thead>
<tr>
<th></th>
<th>4th grade</th>
<th>8th grade</th>
<th>Gymnasium</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anxiety</strong></td>
<td>-.279**</td>
<td>-.283**</td>
<td>-.338**</td>
</tr>
<tr>
<td><strong>English Self Concept</strong></td>
<td>.445**</td>
<td>.605**</td>
<td>.609**</td>
</tr>
<tr>
<td><strong>Instrumentality</strong></td>
<td>NS (.01)</td>
<td>.206**</td>
<td>NS (.07)</td>
</tr>
<tr>
<td><strong>Intrinsic Interest</strong></td>
<td>NS (.12)</td>
<td>.255**</td>
<td>.367**</td>
</tr>
<tr>
<td><strong>Motivational Intensity</strong></td>
<td>NS (.05)</td>
<td>NS (.13)</td>
<td>NS (.14)</td>
</tr>
<tr>
<td><strong>Parental Encouragement</strong></td>
<td>-.176*</td>
<td>NS (.06)</td>
<td>NS (.06)</td>
</tr>
<tr>
<td><strong>Self Regulation</strong></td>
<td>NS (.09)</td>
<td>NS (.04)</td>
<td>NS (.07)</td>
</tr>
</tbody>
</table>
**RESULTS**

- **Stepwise multiple regression analysis:** Regression of Motivation on **Reading** in English

<table>
<thead>
<tr>
<th></th>
<th>Adjusted R Square</th>
<th>% variance explained</th>
<th>First variable</th>
<th>Second variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th grade (10-11 years old)</td>
<td>.226</td>
<td>23%</td>
<td>English Self-concept (.445)</td>
<td>Parental encouragement (.176)</td>
</tr>
<tr>
<td>8th grade (14-15 years old)</td>
<td>.382</td>
<td>38%</td>
<td>English Self-concept (.605)</td>
<td>Self-regulation (.044)</td>
</tr>
<tr>
<td>Gymnasium (17-18 years old)</td>
<td>.382</td>
<td>38%</td>
<td>English Self-concept (.609)</td>
<td>Self-regulation (.169)</td>
</tr>
</tbody>
</table>
**RESULTS**

- Correlation of factors in Motivation Questionnaire with **Writing** in English

<table>
<thead>
<tr>
<th>English Writing</th>
<th>4th grade</th>
<th>8th grade</th>
<th>Gymnasium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>-.207**</td>
<td>-.295**</td>
<td>-.412**</td>
</tr>
<tr>
<td>English Self Concept</td>
<td>.428**</td>
<td>.615**</td>
<td>.658**</td>
</tr>
<tr>
<td>Instrumentality</td>
<td>NS (.09)</td>
<td>.255**</td>
<td>NS (.11)</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>.323**</td>
<td>.328**</td>
<td>.503**</td>
</tr>
<tr>
<td>Motivational Intensity</td>
<td>.309**</td>
<td>.169*</td>
<td>.310**</td>
</tr>
<tr>
<td>Parental Encouragement</td>
<td>NS (-.08)</td>
<td>NS (-.03)</td>
<td>NS (.01)</td>
</tr>
<tr>
<td>Self Regulation</td>
<td>NS (.02)</td>
<td>NS (.13)</td>
<td>.230**</td>
</tr>
</tbody>
</table>
**RESULTS**

- **Stepwise multiple regression analysis:** Regression of Motivation on **Writing** in English

<table>
<thead>
<tr>
<th></th>
<th>Adjusted R Square</th>
<th>% variance explained</th>
<th>First variable</th>
<th>Second variable</th>
<th>Third variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th grade (10-11 years old)</td>
<td><strong>.221</strong></td>
<td><strong>22%</strong></td>
<td>English Self-concept (.428)</td>
<td>Intrinsic interest (.323)</td>
<td>Self-regulation (.019)</td>
</tr>
<tr>
<td>8th grade (14-15 years old)</td>
<td><strong>.374</strong></td>
<td><strong>37%</strong></td>
<td>English Self-concept (.615)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gymnasium (17-18 years old)</td>
<td><strong>.451</strong></td>
<td><strong>45%</strong></td>
<td>English Self-concept (.658)</td>
<td>Anxiety (.412)</td>
<td></td>
</tr>
</tbody>
</table>

Preliminary results - please do not quote
## RESULTS

- Correlation of Motivation with **Listening in English** (a dictation test)

| English Reading                        | 4<sup>th</sup> grade | 8<sup>th</sup> grade | Gymnasium  
|----------------------------------------|-----------------------|----------------------|---------------------
| Anxiety                                | -.288**               | -.345**              | -.367**             
| English Self Concept                   | .553**                | .665**               | .764**              
| Instrumentality                        | NS (.04)              | .269**               | NS (.07)            
| Intrinsic Interest                     | .227**                | .396**               | .472**              
| Motivational Intensity                 | .183*                 | .245**               | .249**              
| Parental Encouragement                 | NS (-.04)             | NS (.05)             | NS (-.08)           
| Self Regulation                        | NS (-.08)             | .183*                | .160*               

Preliminary results - please do not quote
### RESULTS

- **Stepwise multiple regression analysis:** Regression of Motivation on **Listening** in English (dictation test)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Adjusted R Square</th>
<th>% variance</th>
<th>First variable</th>
<th>Second variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th grade (10-11 yrs)</td>
<td>.323</td>
<td>32%</td>
<td>English Self-concept (.553)</td>
<td>Self-regulation (-.08)</td>
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<td>8th grade (14-15 yrs)</td>
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<td>English Self-concept (.666)</td>
<td></td>
</tr>
<tr>
<td>Gymnasium (17-18 yrs)</td>
<td>.582</td>
<td>58%</td>
<td>English Self-concept (.764)</td>
<td></td>
</tr>
</tbody>
</table>

Preliminary results - please do not quote.
## Results

Correlation of Motivation with English Vocabulary

<table>
<thead>
<tr>
<th></th>
<th>4&lt;sup&gt;th&lt;/sup&gt; grade</th>
<th>8&lt;sup&gt;th&lt;/sup&gt; grade</th>
<th>Gymnasium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>-.397**</td>
<td>-.391**</td>
<td>-.313**</td>
</tr>
<tr>
<td>English Self Concept</td>
<td>.604**</td>
<td>.684**</td>
<td>.687**</td>
</tr>
<tr>
<td>Instrumentality</td>
<td>NS (-.09)</td>
<td>.228**</td>
<td>NS (.03)</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>.156*</td>
<td>.251**</td>
<td>.461**</td>
</tr>
<tr>
<td>Motivational Intensity</td>
<td>NS (.115)</td>
<td>NS (.08)</td>
<td>.184*</td>
</tr>
<tr>
<td>Parental Encouragement</td>
<td>-.178*</td>
<td>NS (-.07)</td>
<td>NS (-.09)</td>
</tr>
<tr>
<td>Self Regulation</td>
<td>-.122*</td>
<td>NS (.06)</td>
<td>NS (.09)</td>
</tr>
</tbody>
</table>
## RESULTS

- **Stepwise multiple regression analysis:** Regression of Motivation on English Vocabulary

<table>
<thead>
<tr>
<th></th>
<th>Adjusted R Square</th>
<th>% variance</th>
<th>First variable</th>
<th>Second variable</th>
<th>Third variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th grade (10-11 years old)</td>
<td>.417</td>
<td>42%</td>
<td>English Self-concept (.604)</td>
<td>Self-regulation (-.122)</td>
<td>Instrumentality (-.09)</td>
</tr>
<tr>
<td>8th grade (14-15 years old)</td>
<td>.489</td>
<td>49%</td>
<td>English Self-concept (.684)</td>
<td>Self-regulation (.06)</td>
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</tr>
<tr>
<td>Gymnasium (17-18 years old)</td>
<td>.499</td>
<td>50%</td>
<td>English Self-concept (.687)</td>
<td>Self-regulation (.09)</td>
<td>Intrinsic interest (.461)</td>
</tr>
</tbody>
</table>
CONCLUSIONS

- It was possible to construct meaningful and reliable sub-scales for motivation and related constructs.
- Constructs such as self-concept, self-regulation and intrinsic interest that are rarely use in motivation research worked well.
- No significant or meaningful differences between 8th Grade and Gymnasium students.
  - Same constructs also emerged in the 4th graders’ responses.
CONCLUSIONS

- Several aspects of motivation correlated significantly with different aspects of proficiency in English (reading, writing, listening, vocabulary)
  - English Self-concept
  - (lack of) Anxiety
  - Intrinsic Interest, (Motivational Intensity)

- However, only English Self-concept consistently explained significant amounts of variance on reading, writing, etc
  - Self-Regulation and Intrinsic Interest often contributed some unique variance
NEXT STEPS & IMPLICATIONS FOR STUDY 2 AND 3

- We are able to shorten the questionnaires, deleting those items that factor analysis showed were not part of the constructs, or that lowered the reliability of the scales.
- We will continue to measure Anxiety, but it will not be included as part of Motivation.
  - Self-Regulation?
- Direction of causality?
  - Motivation → Achievement?
  - Achievement → Motivation?
  - Both ways?
Recent research (Kormos et al, forthcoming) has shown that Ideal L2 Self, Self-Efficacy, Knowledge Orientation, International Posture, L2 Learning Attitude and Motivated Learning Behaviour might be worth exploring.

We will be analysing the results more thoroughly (e.g. Structural Equation Modeling) to find out how different aspects of motivation relate to language and cognitive / psycholinguistic measures and to learners’ background.

- Why? ONLY other language tasks directly predict e.g. Reading or Writing in L2 when Motivation, Cognitive tasks and Language tasks are all used together as predictors in regression analyses.
Thank you!

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