Exploring the relationship between language learning motivation and proficiency

Karen Dunn

British Council

Janina Iwaniec

University of Bath

BAAL TEASIG: Mar 2019

Talk overview

- Literature review and aims

- Data collection and instruments

- Questionnaire

- Analysis: Latent Variable Mixture Modelling

- Results

- Discussion and future directions

Motivation and proficiency

- Early studies: lack of rigorous measures of proficiency

- L2MSS (Dörnyei, 2005): ideal L2 self – ought-to L2 self – language learning experience

- Lamb (2012), Moskovsky, Racheva, Assulaimani, & Harkins (2016), Saito, Dewaele, Abe, & In'nami (2019)

- Contradictory results:
  - Data analysis
  - Contexts
  - Measures of proficiency

Aims and overview

- This paper uses an innovative approach to exploring the relationship between language achievement and motivation

- Latent Variable Mixture Modelling
  - Family of models include: Latent Class Analysis and Latent Profile Analysis
  - A person-centred analysis divides participants into groups according to shared attitudes and performances (Muthén & Muthén, 2010)

- Both motivation and proficiency indicators are used to profile 15-year old Spanish learners of English.

Motivational profiling

- Examples from L2 motivation of profiling using latent categories:
  - Kangasvieri (2017), Papi and Teimouri (2014) , Csizér and Dörnyei (2005)

- Only Kangasvieri used Latent Variable Mixture Modelling approach (LPM)
  - The others used cluster analysis which is purely descriptive, rather than model-based

- None include a language proficiency measure within the profiles, classifications focused on motivational traits

DATA COLLECTION AND INSTRUMENTS

English Impact project sample design [ACER]

| Stratified two-stage cluster sample design	Final Sample
Gov't funded schools in Madrid identified and stratified by region, type and bilingualism 170 schools selected	169 schools participated
Target group pupils: grade 4; 15.5 years old; studying at least 90 mins English per week. Target 12 students from each sampled school	2,028 students sampled overall 255 students withdrawn, excluded, eligible, and absent on the day of the assessment Final student sample: 1,773

Assessment tools

51-question survey - delivered in Spanish

- school and language learning background, socio-economic information, and language learning motivations

English language test - Aptis for Teens

- Reading, writing, speaking and listening, plus grammar and vocabulary
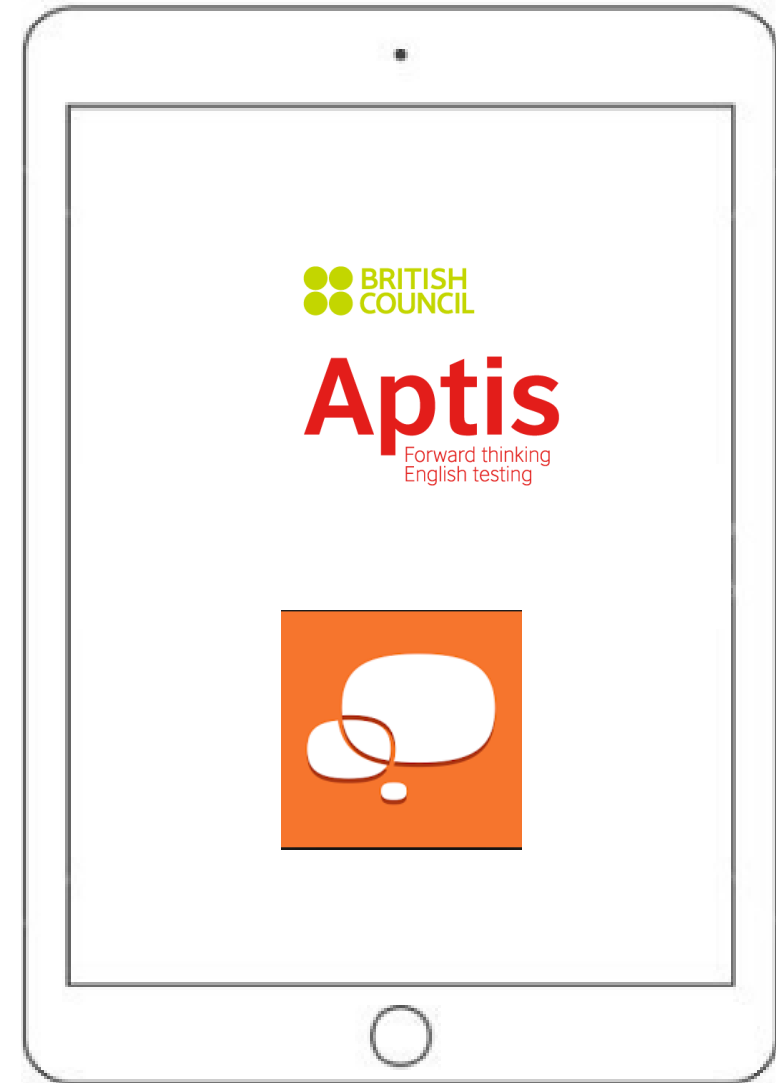
THE MOTIVATION QUESTIONNAIRE

Motivation Scales

Scale 1 – Ideal L2 self

Scale 2 – English self-concept

Scale 3 – Ought-to L2 self

Scale 4 – Parental encouragement

Scale 5 – International orientation

Scale 6 – Instrumentality

Scale 7 – Language learning experience

Scale 8 – Motivated behaviour

Questions presented in candidates' first language (Spanish)

Each scale has 4 items with 6-point Likert response

Items randomized

Questionnaire delivered immediately prior to proficiency test

Dörnyei (2005); Iwaniec (2014);
Taguchi et al. (2009); Ryan (2009)

Motivation Scales

Present and Future Self

External Influence/Pressure

Perceived Value of English

Engagement with Language Learning

Questions presented in candidates' first language

Each scale has 4 items with 6-point Likert response

Items randomized

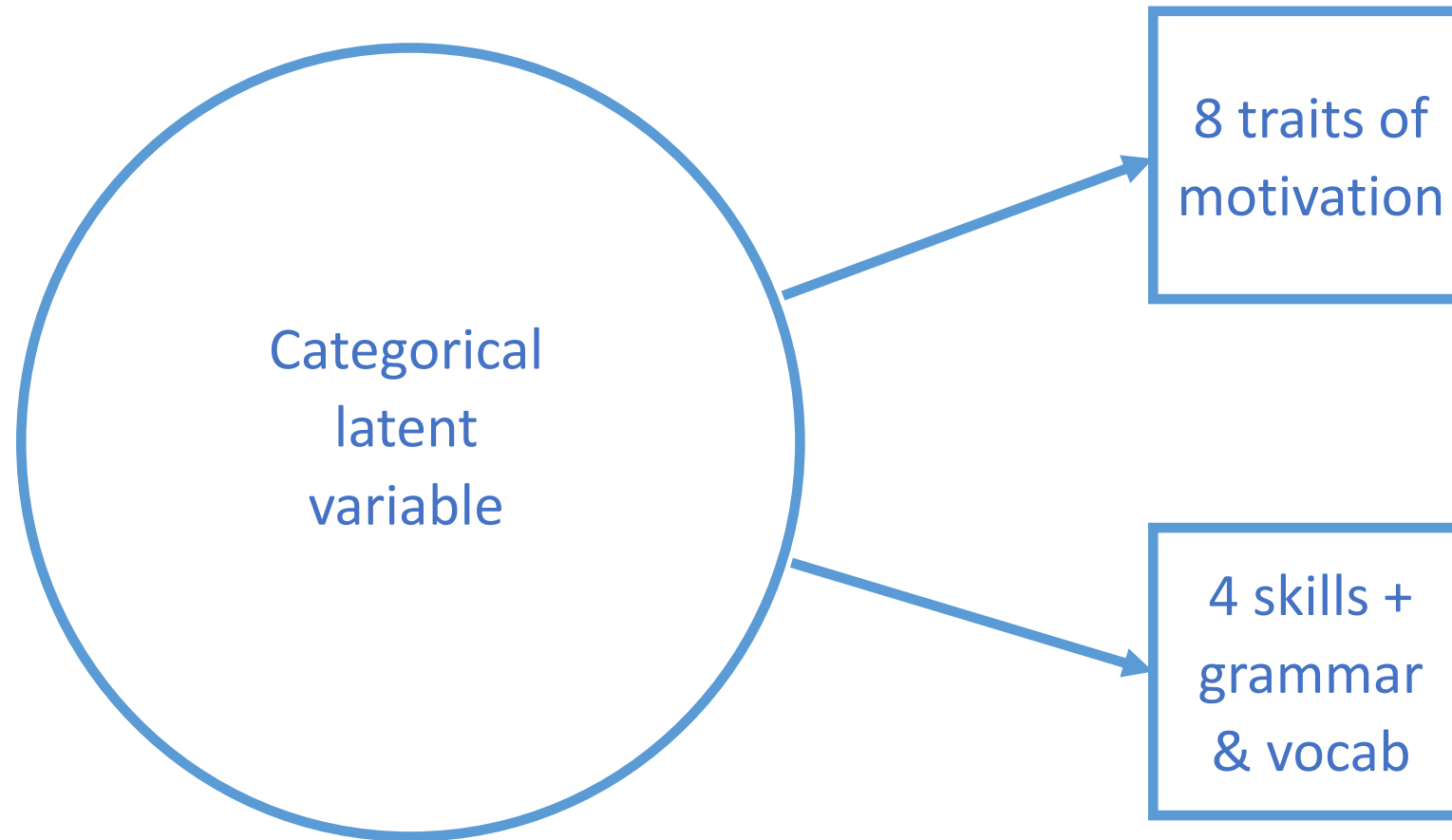Questionnaire delivered immediately prior to proficiency test

Dörnyei (2005); Iwaniec (2014);

Taguchi et al. (2009); Ryan (2009)

ANALYSIS:
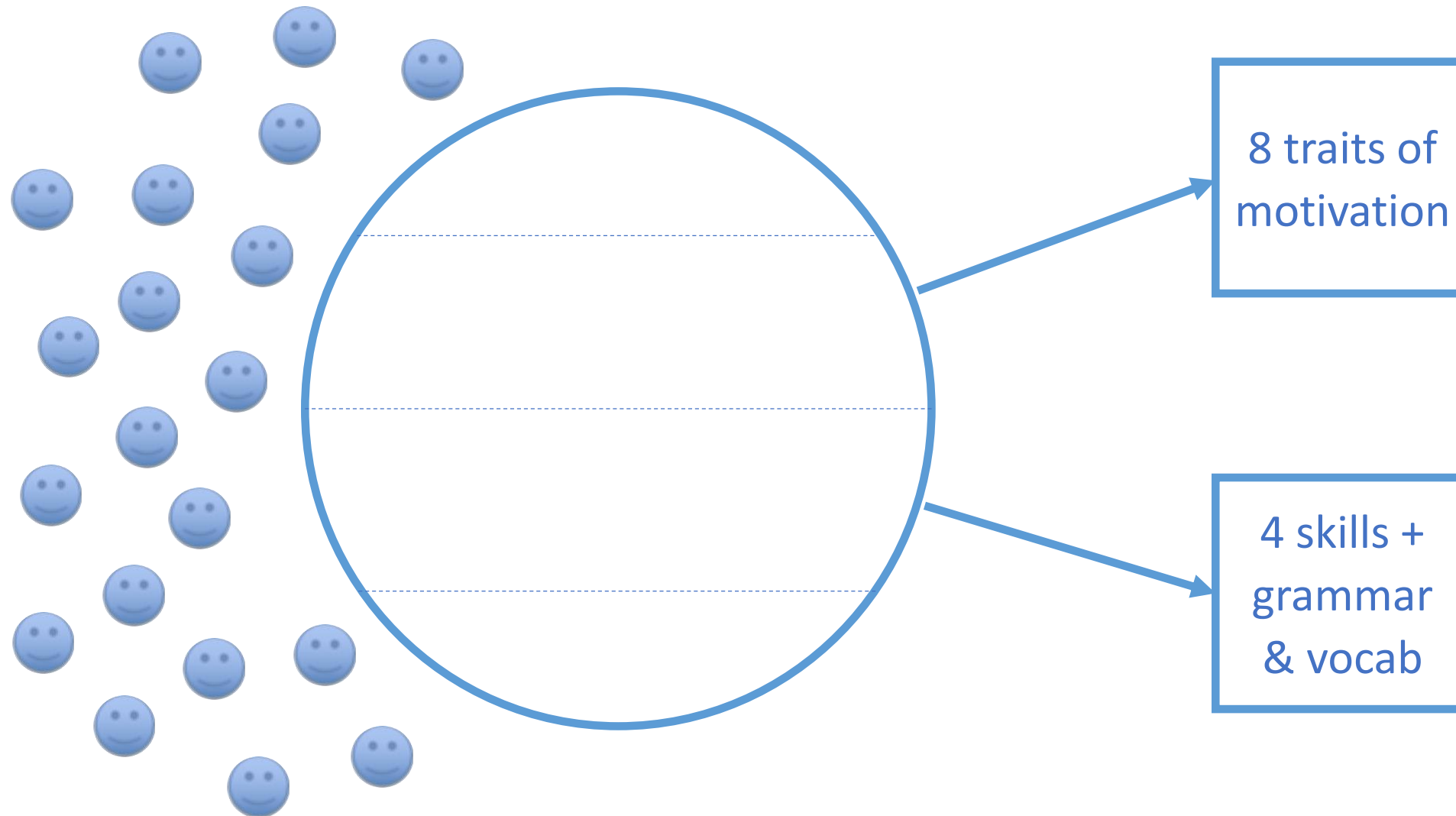# LATENT VARIABLE MIXTURE MODELLING (LVMM)

What is LVMM?

- A statistical modelling approach based on the premise that observable classifications may not necessarily be the most informative means of grouping and comparing students:

  - directly addressing: **inconsistencies in the results obtained from analyses that incorrectly assume population homogeneity rather than heterogeneity that may be present (**Marcoulides and Heck, 2013, p.347)

- LVMM [*in contrast to Factor Analysis*] provides classification of **individuals** (Muthén & Muthén, 2010, p141).

Hypothesised model

Categorical latent variable

8 traits of motivation

CFA validation of the motivational scales already conducted

4 skills + grammar & vocab

Latent Variable Mixture Model

8 traits of motivation

CFA validation of the motivational scales already conducted

4 skills + grammar & vocab
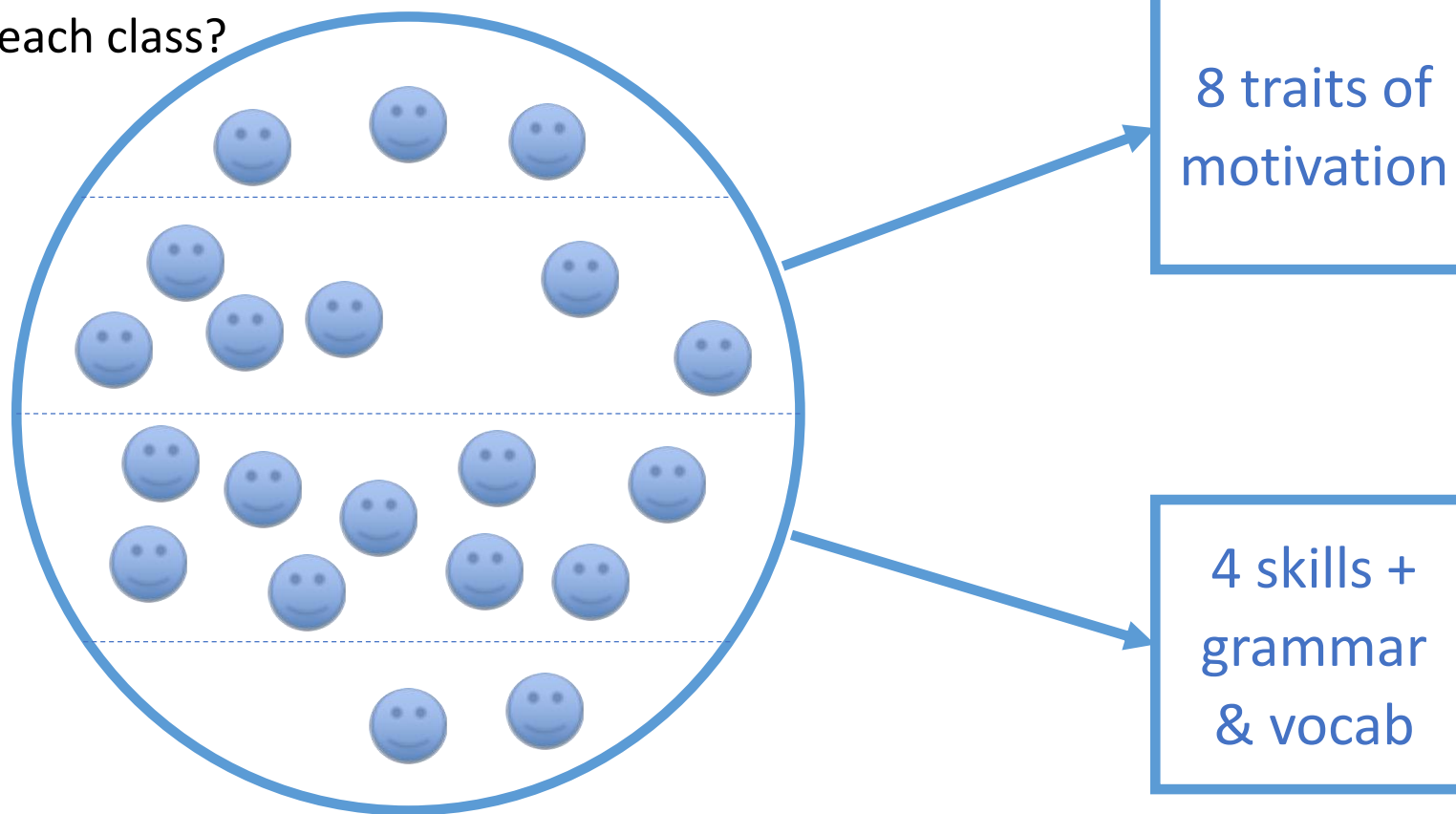
THE FINDINGS

How many latent classes?

SSBIC: model fit criteria

Number of latent classes	SSBIC	LMR	p-value	Entropy
2	215538.8	14449	<.0001	0.935
3	210871.7	4683	<.0001	0.932
4	208160.2	2746	<.0001	0.932
5	206554.8	1650	.0018	0.930
6	205349.5	1254	.6998	0.917
7	204657.3	745	.2987	0.911
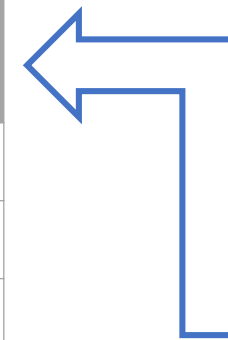
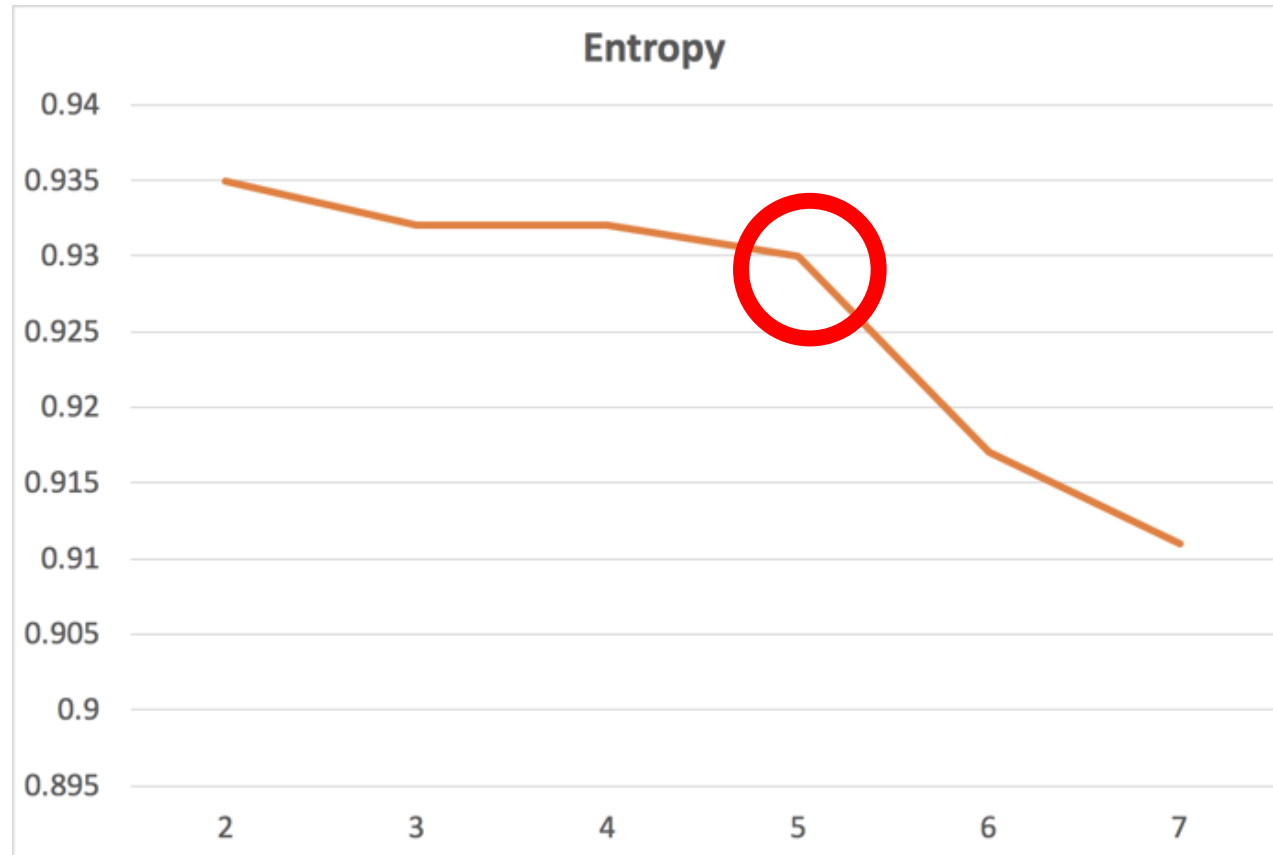**Entropy: classification accuracy**

Lo-Mendel-Rubin: improvement in fit on adjoining model

How many latent classes?

Entropy
0.935
0.932
0.932
0.930
0.917
0.911

Entropy: classification accuracy

5-class model: Class counts and proportions

- Number of students allocated to each of the five classes in the latent variable:

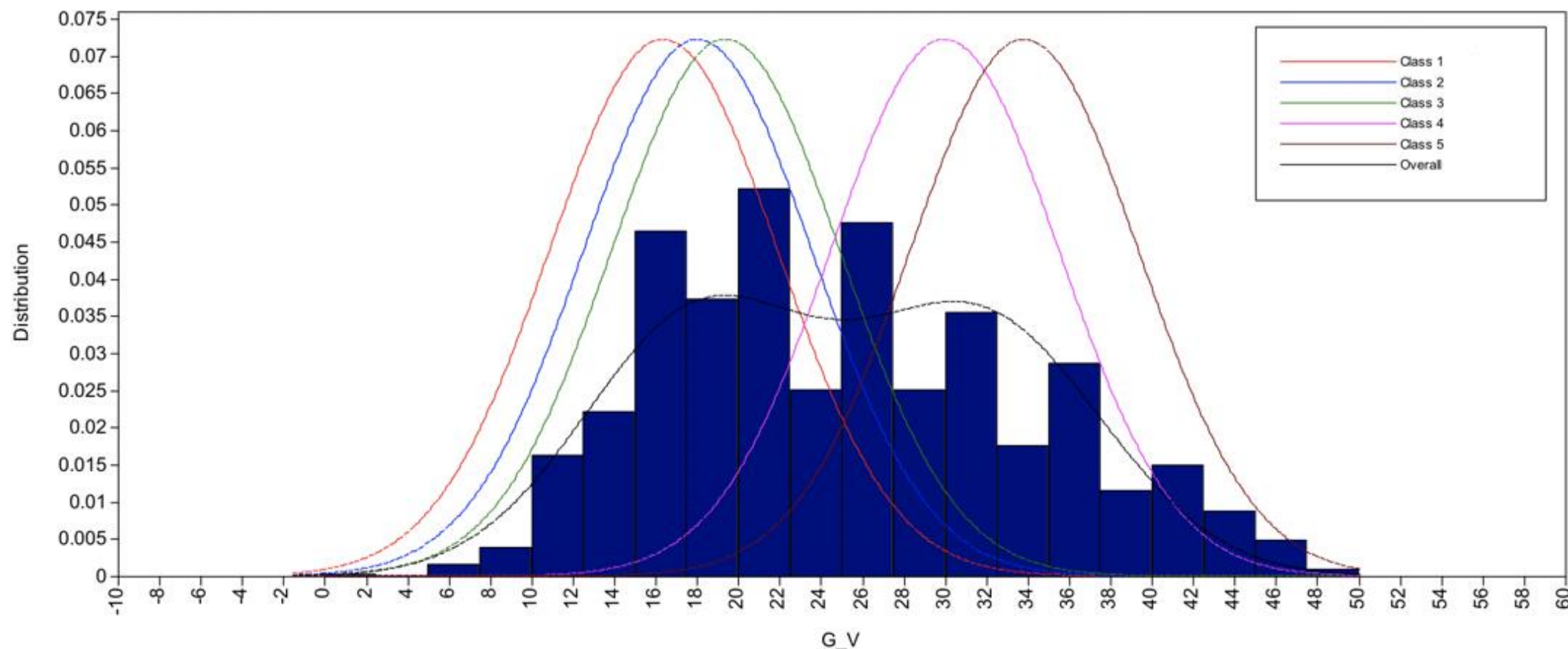| Latent class	Number of students	Percentage
1	177	10.0%
2	432	24.4.%
3	258	14.6%
4	493	27.8%
5	413	23.2%
TOTAL	1773	100.0%

5-class model: Individual class probabilities

- Probability of membership of all class estimated for each student:
  - Provides a degree of certainty
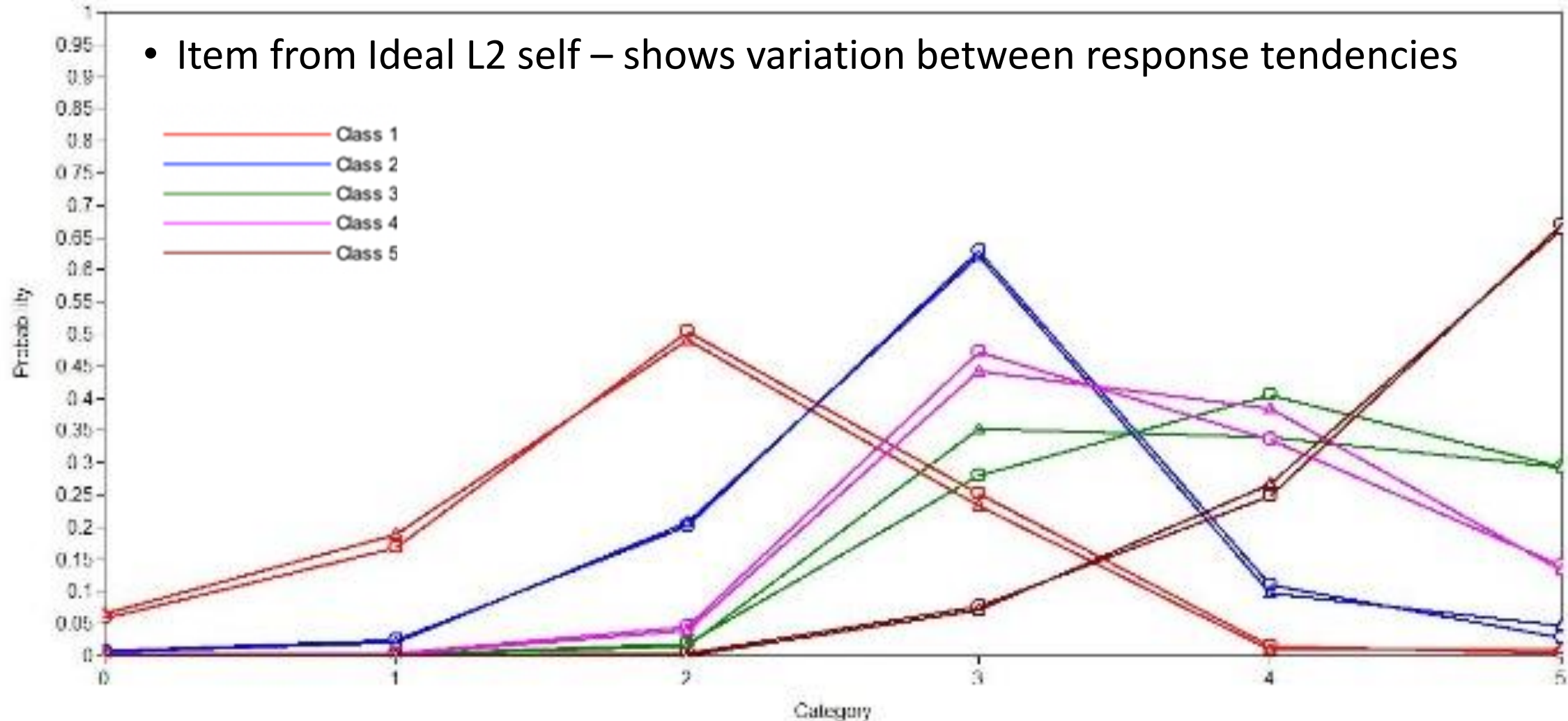 - Some students fit a class profile more clearly than others

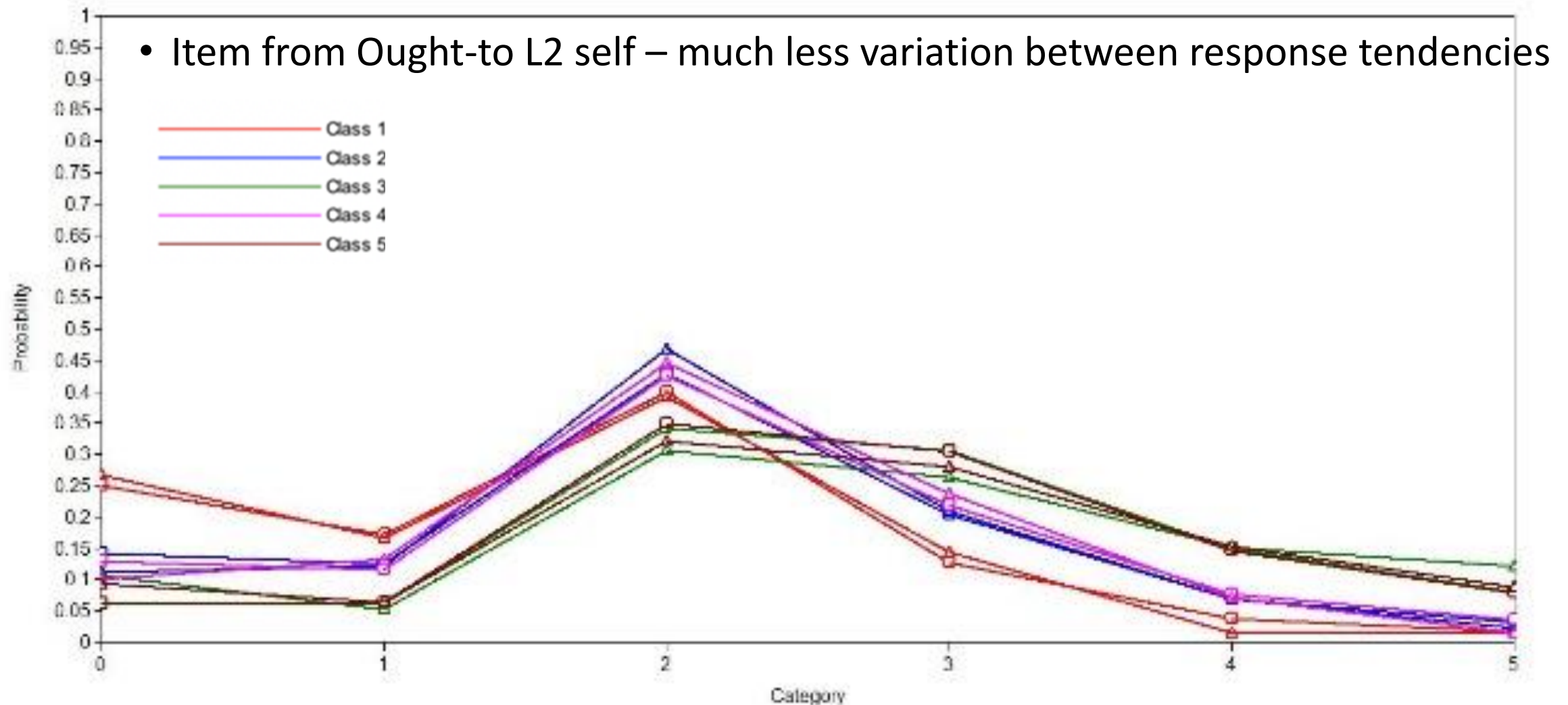| Participant id	Probability Class 1	Probability Class 2	Probability Class 3	Probability Class 4	Probability Class 5	Allocated category
Student1	.000	.954	.046	.000	.000	2
Student2	.000	.216	.000	.784	.000	4
Student3	.000	1.000	.000	.000	.000	2
Student4	.000	.000	.000	.000	1.000	5
Student5	.000	.307	.429	.264	.000	3

5-class model: Class score distributions (G&V)

- Grammar and Vocabulary test component – with class distributions superimposed

5-class model: Class questionnaire response (e.g.1)

- Item from Ideal L2 self – shows variation between response tendencies

5-class model: Class questionnaire response (e.g.2)

- Item from Ought-to L2 self – much less variation between response tendencies

5-class model: Observed means

Measure	Class 1	Class 2	Class 3	Class 4	Class 5
Grammar and Vocabulary	16.375	18.031	19.388	29.986	33.826
Listening	26.400	29.200	31.678	41.429	43.789
Reading	18.386	20.310	21.909	38.286	41.612
Speaking	14.339	20.453	25.258	36.254	38.802
Writing	16.786	22.574	25.257	38.365	40.426
F1 – International orientation	-2.952	-1.674	-0.378	-1.561	0.000[1]
F2 – Parental encouragement	-1.215	-0.756	0.055	-0.617	0.000[1]
F3 – English self-concept	-6.217	-4.377	-2.284	-2.243	0.000[1]
F4 – Ought-to L2 self	-1.131	-0.648	0.030	-0.563	0.000[1]
F5 – Language learning experience	-5.828	-3.385	-0.789	-2.788	0.000[1]
F6 – Motivated behaviour	-4.211	-2.315	-0.476	-2.116	0.000[1]
F7 – Instrumentality	-2.900	-1.891	-0.695	-1.061	0.000[1]
F8 – Ideal L2 self	-6.440	-4.257	-1.588	-2.524	0.000[1]

5-class model: Observed means

[1]Reference category

Measure	Class 1	Class 2	Class 3	Class 4	Class 5
Grammar and Vocabulary	16.375	18.031	19.388	29.986	33.826
Listening	26.400	29.200	31.678	41.429	43.789
Reading	18.386	20.310	21.909	38.286	41.612
Speaking	14.339	20.453	25.258	36.254	38.802
Writing	16.786	22.574	25.257	38.365	40.426
F1 – International orientation					
F2 – Parental encouragement					
F3 – English self-concept					
F4 – Ought-to L2 self					
F5 – Language learning experience					
F6 – Motivated behaviour					
F7 – Instrumentality					
F8 – Ideal L2 self					

Mean scores out of 50

NB: CEFR cut-scores differ across the papers so no direct comparison should be made

5-class model: Observed means

Measure	Class 1	Class 2	Class 3	Class 4	Class 5
Grammar and Vocabulary					
Listening					
Reading					
Speaking					
Writing					
F1 – International orientation	-2.952	-1.674	-0.378	-1.561	0.000[1]
F2 – Parental encouragement	-1.215	-0.756	0.055	-0.617	0.000[1]
F3 – English self-concept	-6.217	-4.377	-2.284	-2.243	0.000[1]
F4 – Ought-to L2 self	-1.131	-0.648	0.030	-0.563	0.000[1]
F5 – Language learning experience	-5.828	-3.385	-0.789	-2.788	0.000[1]
F6 – Motivated behaviour	-4.211	-2.315	-0.476	-2.116	0.000[1]
F7 – Instrumentality	-2.900	-1.891	-0.695	-1.061	0.000[1]
F8 – Ideal L2 self	-6.440	-4.257	-1.588	-2.524	0.000[1]

Factor scores for each trait

NB: Interpret as relative to reference class

[1]Reference class

5-class model: Comparative motivation scores
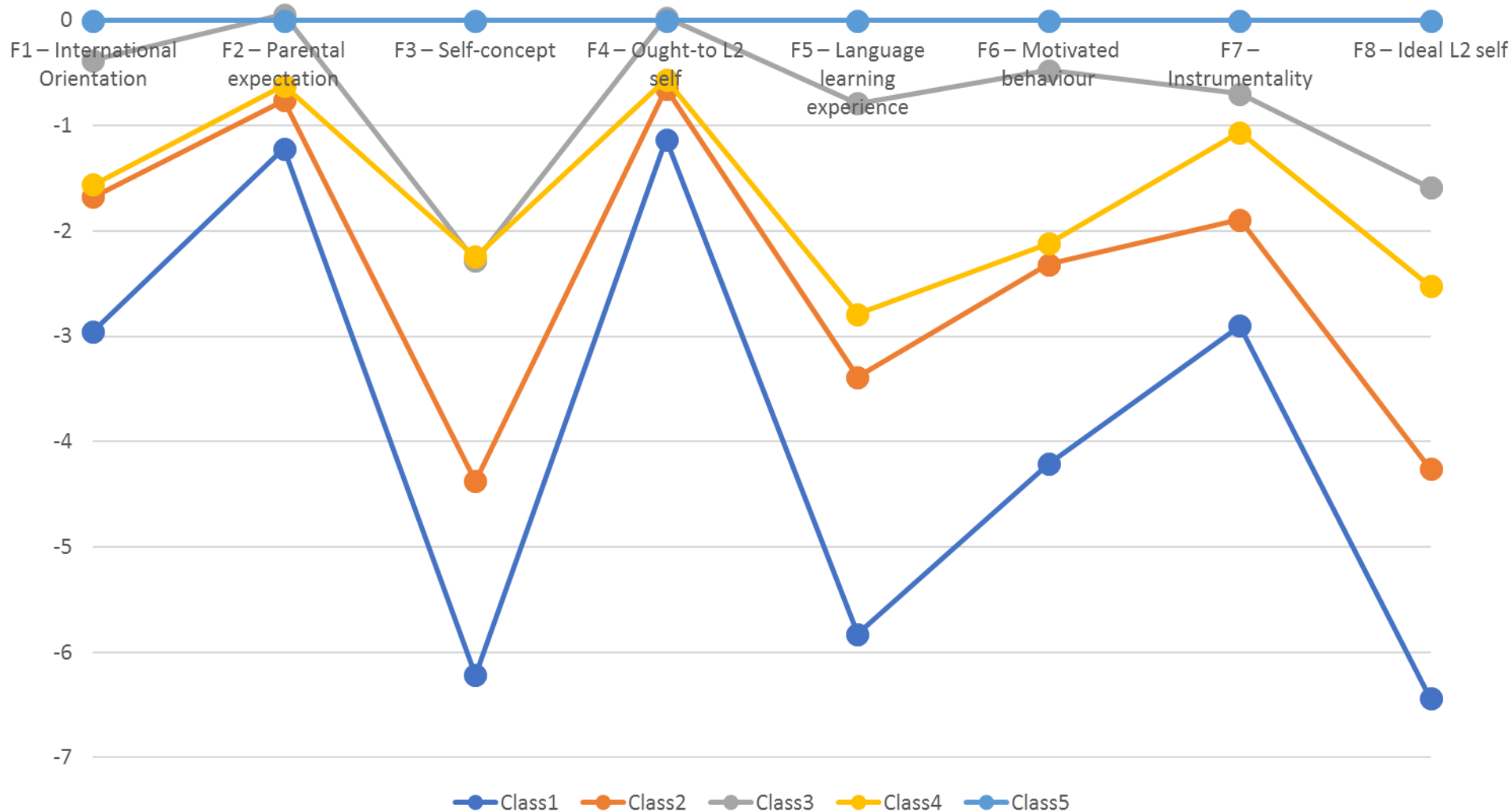
5-class model: Comparative L2 skill scores
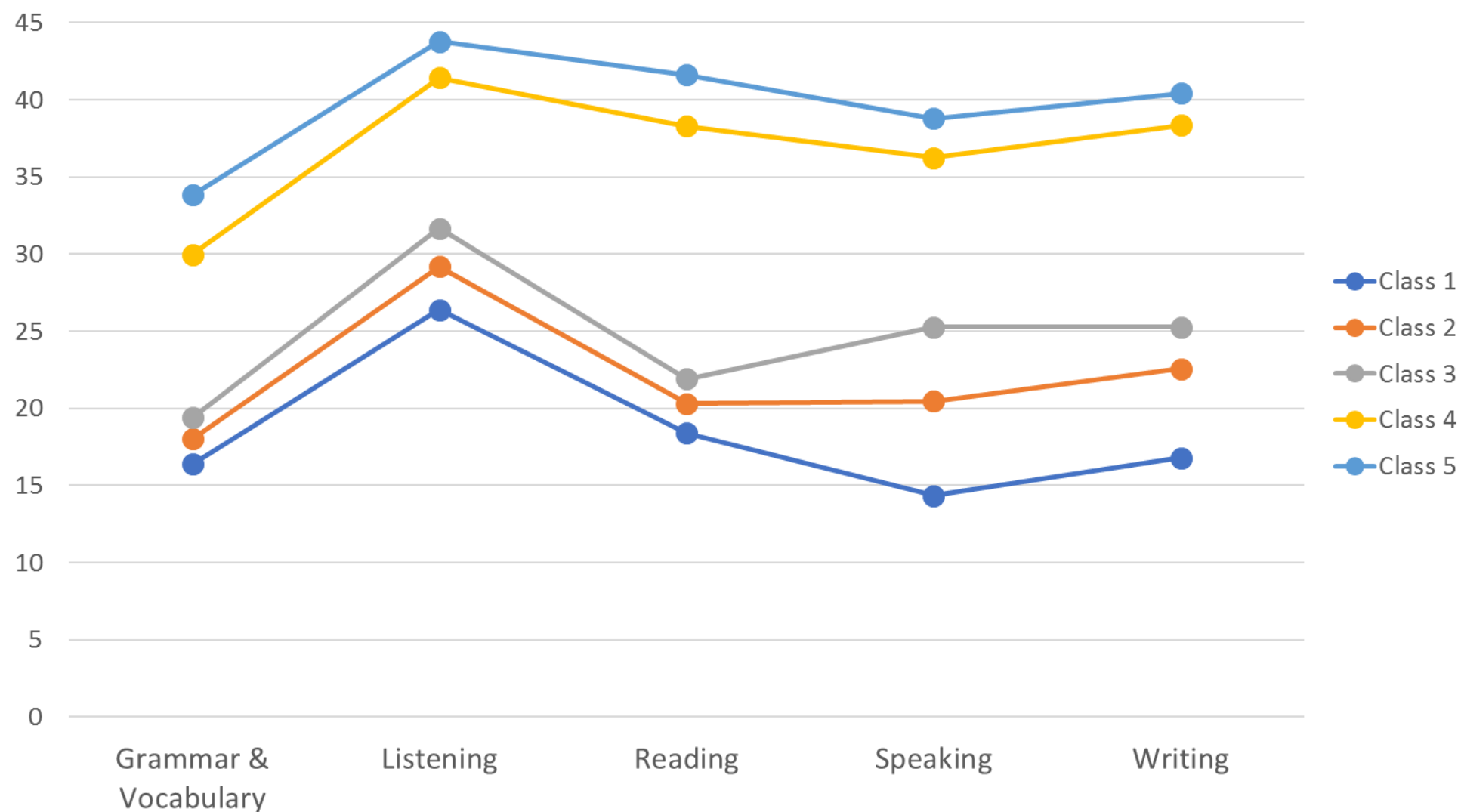
Comparison:

classes 3, 4, and 5
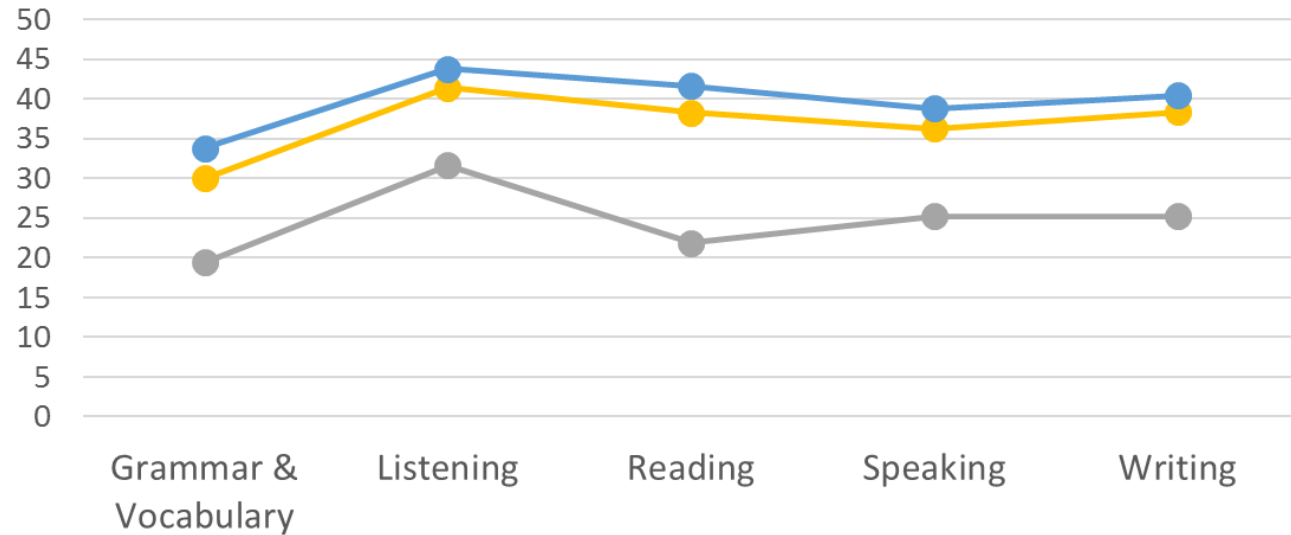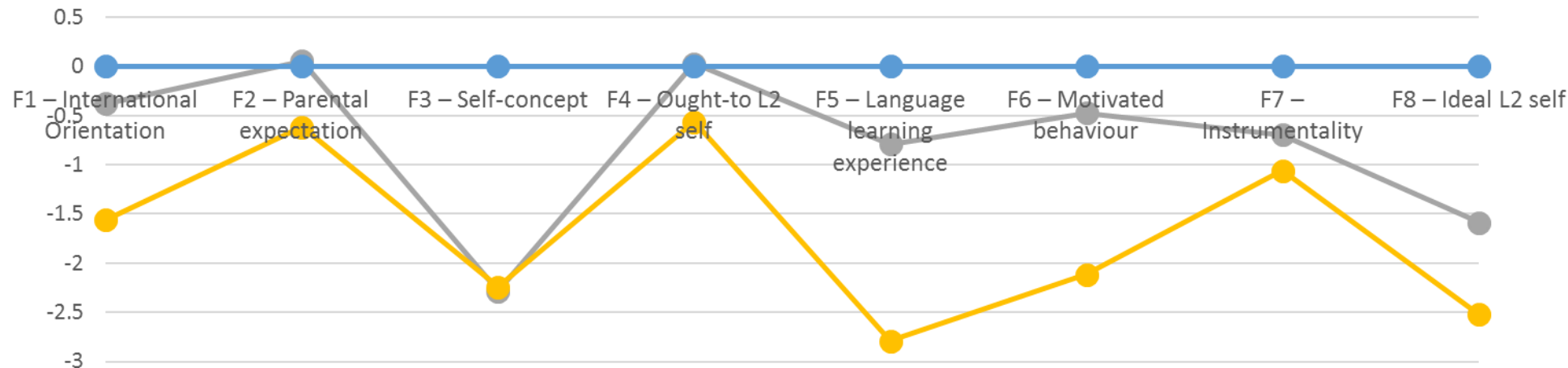
DISCUSSION AND CONCLUSIONS

5-class model: Describing class membership

We can characterise the "types" of student

- **Class 1** – low proficiency, low motivation **<<Uninvested>>**
- **Class 2** – low proficiency, better experience and appreciation **<<Ambivalent>>**
- **Class 3** – lowish proficiency, stronger motivation and investment **<<Aspirant>>**
- **Class 4** – higher proficiency, average motivation **<<Unambitious>>**
- **Class 5** – high motivation, high proficiency **<<High flyers>>**

Conclusions and implications

- Methodology
  - The link between motivation and proficiency cannot be assumed to be linear.

- L2 Motivational Self-System
  - The ought-to L2 self as having limited motivational force.

- Future studies to look at how motivate different groups of learners

ENGLISH IMPACT

AN EVALUATION OF ENGLISH
LANGUAGE CAPABILITY

MADRID, SPAIN

OCTOBER 2017

ELIZABETH SHEPHERD AND
VICTORIA AINSWORTH

Thank you!

Any questions?

karen.dunn@britishcouncil.org
j.iwaniec@bath.ac.uk
https://www.britishcouncil.org/exam/aptis/research/english-impact