Final Report

on
a project funded by
The Subject Centre for Languages, Linguistics and Area Studies in Higher Education,
entitled
Metalinguistic Knowledge of Undergraduate Students of English Language and Linguistics

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July, 2010

Executive Summary

The project reported on in this Final Report collated and analysed data collected in two studies. The first study, conducted jointly with Professor Hudson of University College London, surveyed UK university undergraduates, in order to see whether and to what extent Knowledge about Language (KaL) had declined over three decades, and how this might relate to studies and examinations at A Level. The second study was conducted at Lancaster University from 2005 to 2009, looking at possible gains in KaL as a result of courses in linguistics and language study.

Quantitative analyses of student weaknesses in a number of grammatical areas were undertaken and are presented in this Final Report. In addition, a somewhat more qualitative examination was made of the use of metalanguage in formulations of grammatical rules by undergraduate students, when describing the rules that had been violated in a series of sample sentences, based on the Lancaster longitudinal study.

Results of Study One show that there is no obvious overall downward trend in KaL from earlier studies in 1986, 1992 and 1994, but the data for UK students in 2009 is significantly lower than the data in 1986, 1992 and 1994. However, it would appear that UK students have a much weaker knowledge about language than do non-UK students. Whether this is due to different traditions in teaching language and about language needs further research, but it certainly appears to be the case that studying a foreign language leads to better levels of knowledge about language than does studying for English Language A Level in the UK. Results of both Study One and Study Two confirm that instruction can and does result in improved recognition of parts of speech and grammatical functions.

Considerable interest has already been shown in the result of the analyses, and one presentation was made at Liverpool Hope University. This Final Report will form the basis of further conference presentations and academic articles in peer-reviewed journals, as the results of the analyses are of considerable interest to teachers of linguistics, English language and modern foreign languages. The detailed analysis of strengths and weaknesses of student understanding in particular areas has the potential to form the basis of pedagogic materials intended to address misunderstandings, the misuse of grammatical terminology, a better understanding of grammatical patterning and the formulation of clear and accurate rules that explain linguistic phenomena.

In the time and with the resources available, we were unable to analyse fully the formulations of the rules in Study Two Section 2, Part b), and further analysis is clearly necessary. To facilitate further analysis of the students' rules, we will make the full dataset of rules publicly available on the Department of Linguistics and English Language website.

Introduction

It is a commonplace to remark that incoming undergraduate students in British universities have a declining knowledge about language, and in particular that their knowledge of metalinguistic terminology is very variable. The research reported in this report builds on work conducted by Bloor (1986a and b), and Alderson, Steel and Clapham (1997) and involves ongoing data collection from 2005-9. These projects have investigated the knowledge about language (KaL) of university undergraduates in the UK, in one (Alderson *et al* 1997) relating this to proficiency in French as a Foreign Language. The project running from 2005-9 additionally looks at gains in KaL as a result of courses in linguistics and language study.

The project which is the object of this report was divided into two studies: the aim of the first study was to see whether and to what extent KaL has declined over three decades, and how this might relate to university studies and examinations at A-Level. This first study analysed data collected in a survey of UK university undergraduates conducted jointly with Professor Dick Hudson of University College London.

The aim of the second study was to see whether and to what extent introductory courses in linguistics have enhanced students' KaL. It conducted a quantitative analysis of pre- and post-test data, gathered at Lancaster University between 2005 and 2009, on student weaknesses in a number of grammatical areas. In addition, a somewhat more qualitative examination was made of the use of metalanguage in formulations of grammatical rules by undergraduate students, when describing the rules that had been violated in a series of sample sentences.

Background

Bloor's 1986 study administered a brief test to undergraduate students who were either entering Modern Languages or Linguistics degree courses at two UK universities (Aston and London) or who were second year students in other departments taking the Foreign Language option of the Complementary Studies programme. Bloor labelled the former group "linguists" and the latter group he labeled "non-linguists". 15 test items explored whether students could identify particular parts of speech (verb, noun, adverb, etc.) in a sample sentence. Four additional items tested their ability to identify grammatical functions (subject, predicate and object). His findings showed that only *verb* and *noun* were correctly identified by all the linguists but some of the non-linguists failed to identify even these parts of speech. Most students failed to meet the Department of Education and Science target (in their 1984 document *English from 5 to 16*) that 16-year-olds should be able to identify not only *verb* and *noun*, but also *pronoun*, *adjective*, *adverb*, *article*, *preposition* and *conjunction*.

> Over a quarter of linguists failed to identify *usually* as an adverb...*Infinitive* was generally handled well by linguists, but not by non-linguists, whereas *auxiliary verb* fared quite badly with both groups....Well over half the non-linguists were unable to identify the conjunction *but*, which suggests minimal effective exposure to terminology of this type. (Bloor, 1986: 159)

Bloor concludes that there is a considerable lack of KaL (which he calls language awareness), even amongst this elite group of students studying at university, who are clearly not representative of all school-leavers, let alone 16-year-olds.

Alderson *et al* (1997) developed a battery of tests, including the 19 items from the Bloor test, and administered it to first-year students of French at seven UK universities. In addition, Lancaster first-year students were retested at the end of their first year, and second- and fourth-year students were also tested, to investigate any change in abilities or knowledge. The main findings were that students' knowledge of metalanguage was highly variable, and there are very few metalinguistic terms which students can confidently be assumed to know.

Study One

In 2009, Professor Dick Hudson and the present author, with the collaboration of members of the Linguistic Association of Great Britain (LAGB) and the British Association of Applied Linguistics (BAAL), replicated part of Bloor's study of the knowledge about language of first-year undergraduates at eleven collaborating institutions. This report presents the results of that study, named Study One.

Research questions

1. Has first-year undergraduate students' knowledge about language changed from 1986 to 2009?
2. Is there a relationship between the subject of the A-level examinations students have taken and their knowledge about language?
3. Is there a difference between the knowledge about language of UK-based students and Non-UK students who have not taken UK A-levels?

Method

A notice inviting participation in the project was posted on the LAGB and BAAL electronic listserves. A total of eleven institutions volunteered to take part. These were Aston University, Birmingham City University, Brighton University, Essex University, Gloucester University, Liverpool Hope University, Middlesex University, Newcastle University, Oxford Brookes University, Reading University, and University College London. Part of the Bloor test of parts of speech and grammatical functions was sent to the volunteers, who administered it in the autumn term of 2009 (see Section 1 of the Test of Metalinguistic Knowledge in Appendix 1). A total of 726 students took part. In addition, we included for comparison the results of Bloor's 1986 study (n=238 students) and the 1992 (n=202) and the 1994 (n=682) Lancaster studies (Alderson *et a*l, 1997).

Results

Since the number of students taking part varied greatly by institution and, especially, by A-Level taken, some of the results are expressed as percentages. However, for some analyses we report raw scores as being more meaningful for the particular analysis.

RQ 1 Has first year undergraduate students' knowledge about language changed from 1986 to 2009?

Table 1 presents the descriptive statistics of the five datasets, and Table 2 reports the results of an analysis of variance to establish whether any apparent differences among the datasets are statistically significant. Table 2 shows that the overall difference among groups was not significant (p=.054). However, post hoc tests showed that UK 2009 was always significantly lower than the other four groups, and that there were no other significant differences.

Table 1 Comparison of data from 1986 - 2009

	Minimum % correct	Maximum % correct	Mean % correct	Std. Deviation
BLOOR 1986	9.24	97.06	58.14	22.240
Lancaster 1992	4.46	97.52	59.96	24.259
Lancaster 1994	2.20	98.53	63.87	24.088
UK 2009	7.13	92.87	42.03	27.846
Non-UK 2009	21.88	93.75	60.28	19.739

Table 2 One-Way ANOVA: five datasets

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5490.947	4	1372.737	2.429	.054
Within Groups	49742.063	88	565.251		
Total	55233.010	92			

Results of post-hoc tests: Means for groups in homogeneous subsets are displayed.

			Subset for alpha = 0.05	
	Group	N	1	2
Duncan[a]	UK 2009	659	42.0254	
	Bloor All	238		58.1380
	Lancaster 1992	202		59.9560
	Non-UK 2009	64		60.2796
	Lancaster 1994	682		63.8726
	Sig.		1.000	.510

In summary, there is no obvious overall downward trend from 1986 to 1994, but the data for UK students in 2009 is significantly lower than the data in 1986, 1992 and 1994. However, it has to be said that this could be due to the difference between the universities taking part in the earlier Bloor and Alderson *et al* studies, and those taking part in this survey, which included six post-1992 universities.

RQ 2 Is there a relationship between the subject of the A-level examinations students have taken and their knowledge about language?

The A-level examinations taken by the UK students were categorised as English language; Foreign language; English language and Foreign language; English language and English literature; Other. However, as only 10 students total in one university only had taken English Language and Literature, this A-level is ignored in what follows.

Table 3 Descriptive statistics for the four A-level groups

	N	Minimum	Maximum	Mean	Std. Deviation
English Language	331	8.50	92.16	40.4197	29.41924
Foreign Language	46	15.22	100.00	59.1533	25.22300
English Language and Foreign Language	78	5.79	94.78	57.7277	24.81357
Other	197	3.18	91.44	37.4354	28.51607
Valid N (listwise)	652				

Table 4 One way Analysis of Variance across A-level groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7338.267	3	2446.089	3.339	.024
Within Groups	52750.274	72	732.643		
Total	60088.541	75			

		Subset for alpha = 0.05		
	Group	1	2	3
Duncan[a]	Other	37.4354		
	English Language	40.4197	40.4197	
	English and Foreign Language		57.7277	57.7277
	Foreign Language			59.1533
	Sig.	.735	.053	.871

The results of a one-way ANOVA show that there is a significant difference among the means of the four A-level groups. Post-hoc tests show that Foreign Language A-levels, whether alone or in combination with English Language, resulted in significantly higher mean scores.

Table 5 Differences between A-level groups by part of speech and grammatical function

Part of speech/ grammatical function	English language % correct	Foreign language % correct	English language and Foreign language % correct	English language and English literature % correct	Other % correct
Verb	91.18	97.83	94.63	90.00	89.86
Noun	92.16	100.00	94.63	100.00	91.44
Countable noun	54.90	69.57	64.56	50.00	47.11
Passive verb	14.38	34.78	46.43	20.00	13.35
Adjective	74.51	91.30	82.34	100.00	73.61
Adverb	40.52	76.09	54.79	40.00	38.27
Definite article	30.07	47.83	46.02	10.00	23.13
Indefinite article	26.47	39.13	45.41	20.00	17.66
Preposition	33.33	54.35	66.99	40.00	25.85
Relative pronoun	22.22	39.13	51.81	10.00	31.80

Auxiliary verb	13.40	32.61	37.37	0.00	10.37
Past participle	19.28	56.52	60.74	0.00	23.50
Conjunction	72.22	73.91	75.84	40.00	56.87
Finite verb	10.13	34.78	23.26	0.00	18.81
Infinitive	11.76	71.74	62.63	30.00	11.85
Subject	90.20	95.65	94.78	80.00	86.31
Predicate	8.50	15.22	5.79	0.00	3.18
Direct object	29.74	52.17	64.05	40.00	26.06
Indirect object			24.75		22.25

Table 5 shows the differences between A-level groups by part of speech and grammatical function. In most cases, the Foreign Language A-level group performs better than the other groups, notably in Adjective, Adverb, Infinitive.

Surprisingly weak performances are achieved by the English Language A-level group in Countable Noun, Passive Verb, Adjective, Adverb, Definite Article, Indefinite Article, Preposition, Relative Pronoun, Auxiliary Verb, Past Participle, Finite Verb, Infinitive and Direct Object. Generally weak performances across the A-level groups are seen in Definite and Indefinite Article, Auxiliary Verb, Finite Verb and Predicate.

In summary, the highest scores on the Knowledge about Language test were achieved by the Foreign language A-level group and the English language and Foreign language group. The English language A-level group's scores were, somewhat surprisingly, considerably lower and non-significantly only marginally higher than the Other A-level group's scores.

RQ 3 Non-UK students compared with UK A-level candidates

A total of 64 students were from overseas and had not taken a UK A-level. Their results were compared with the 659 students who had taken UK A-levels. Table 6 presents the percentage scores of the two groups, item by item.

The correlation between the two sets of scores was a significant .87, but the difference between the means for the two groups was highly significant ($t=5.515$, $p<.000$). Interestingly, the Non-UK group had a higher mean score for the 19 items than the UK group (60.28% compared with 42.03%)

Table 6 Comparison of item scores of UK and Non-UK students

Part of speech/ grammatical function	UK % correct N=659	Non-UK % correct N=64
Verb	91.20	85.94
Noun	92.87	93.75
Countable noun	55.24	82.81
Passive verb	18.51	54.69
Adjective	76.18	81.25
Adverb	42.94	53.13
Definite article	29.89	64.06
Indefinite article	26.40	62.50
Preposition	34.45	67.19
Relative pronoun	26.86	56.25
Auxiliary verb	15.02	37.50
Past participle	27.01	46.88
Conjunction	68.29	59.38
Finite verb	14.72	28.13
Infinitive	21.70	48.44
Subject	88.01	87.50
Predicate	7.13	21.88
Direct object	32.47	59.38
Indirect object	29.59	54.69

UK students seem to be notably weaker than Non-UK students in most areas, but most clearly in Passive Verb, Definite and Indefinite Article, Pronoun and Direct and Indirect Object. Nevertheless, although performing largely better than UK students, Non-UK students do have weaknesses in areas like Auxiliary Verb, Finite Verb, and Predicate. Surprisingly, Non-UK students perform somewhat weakly on Verb, which is one of the very few categories that over 90% of UK students can identify.

A replication in Spain

A colleague in Spain requested a copy of our partial replication of the Bloor test, and administered it to Spanish students at the University of Zaragoza (a public university ranked in 10th position nationally) in November 2009. The students were taking undergraduate courses in English as a second language and fell into two groups, those entering English degree courses (called "linguists", n=73) and those entering degrees course in either Engineering or Nursing (called "non-linguists", n=75). The questionnaire was administered entirely in English. Table 7 presents the results.

Table 7 Errors made by Linguists and Non-Linguists at the University of Zaragoza, Spain

	linguists		**non-linguists**		**TOTAL**	
Students	**73**		**75**		**148**	
Parts of speech	raw	(%)	raw	(%)	raw	(%)
verb	1	1.4	2	2.7	3	2.0
noun	1	1.4	0	0.0	1	0.7
countable noun	1	1.4	9	12.0	10	6.8
passive verb	5	6.8	5	6.7	10	6.8
adjective	0	0.0	8	10.7	8	5.4
adverb	11	15.1	15	20.0	26	17.6
definite article	8	11.0	22	29.3	30	20.3
indefinite article	8	11.0	24	32.0	32	21.6
preposition	9	12.3	6	8.0	15	10.1
relative pronoun	4	5.5	14	18.7	18	12.2
auxiliary verb	16	21.9	33	44.0	49	33.1
past participle	16	21.9	26	34.7	42	28.4
conjunction	21	28.8	26	34.7	78	31.8
finite verb	38	52.1	40	53.3	12	52.7
infinitive	6	8.2	6	8.0	12	8.1
Mean errors per person		**2**		**3.1**		**2.6**
Functions						
subject	5	6.8	5	6.7	10	6.8
predicate	4	5.5	10	13.3	14	9.5
direct object	9	12.3	19	25.3	28	18.9
indirect object	14	19.2	13	17.3	27	18.2

Mean errors per person	**0,4**	**0,6**	**0,5**
Total mean errors in Part of Speech and Function	**2,4**	**3,7**	**3,1**

Our correspondent explained that Spain was not affected by the opposition to grammar teaching which occurred in the UK. The notional-functional perspective in second language teaching is known but 'context' and 'function' are barely dealt with in textbooks. Spanish children are introduced to basic notions like subject and predicate at the age of 8 (Year 3 of Primary Education). At eleven or so (Year 6) they apparently already know the elements of the simple clause. Analysis of subordinate clauses and diagramming starts at age 12, at the begining of Secondary Education. Thus our correspondent asserts that

> "Spanish school-leavers have undergone formal language teaching for many years, and have been required to reflect on the formal properties of their L1, becoming aware of language properties and rules. They have both implicit and explicit knowledge of the mother tongue and find it 'natural' to transfer this explicit knowledge to the L2 learning process. That would explain, for instance, why many of them have failed to recognise 'finite verb' as such, as this grammatical term is not used in Spanish grammar. Furthermore, English second language teaching practices tend to follow the three-stage 'PPP' model (presentation, practice, performance), with more emphasis on the first two stages. In Spain, traditional English teaching methodology has focused on making students aware of grammatical rules or problems and then making them practise on them by doing specific exercises. Spanish students of English are able to apply rules in practice exercises after grammar inputs and do it consciously. However, they consistently make errors when confronted with free production, in writing and even more so in spontaneous speech."

Although the students taking the test were entering different faculties within the University of Zaragoza, in Spain all secondary schools follow the same syllabus for a foreign language: there is one compulsory L2 subject and nearly 90% of pupils take English. The national university entrance exam, known as "selectividad", includes a foreign language exam that has to be taken by all school-leavers taking the exam, regardless of their speciality.

Commenting on the figures for "finite verb", she said

> "Spanish does not make a specific grammatical distinction between finite and non-finite forms. So we haven't got any term to show that distinction. We have 'gerundio', 'infinitivo' and 'participio' as the terms to refer to non-finite forms, but no term to contrast them with the other 'conjugated' forms (the finite ones in English)."

In answer to RQ3, it would appear that UK students have a much weaker knowledge about language than do non-UK students. Whether this is due to different traditions in teaching language and about language needs further research, but it certainly appears to be the case

that studying a foreign language leads to better levels of knowledge about language than does studying for English Language A Level in the UK.

Pre- and post-tests in Study One

In one case, Reading University, the test results were in effect a pre-test administered at the beginning of the first (Autumn) term to students who would only take a grammar course in the second term of the academic year 2009-2010. This grammar course dealt with a number of topics tested in the partial replication of the Bloor test. Students were given 6 one-hour lectures on parts of speech and parsing, and they also received two 1-hour seminars - the group sizes were between 10 and 16. The first seminar was on word classes and the second on clause structure, making a total amount of face-to-face tuition in the course of 8 hours. In addition, students were given weekly parsing exercises to do in their own time (it is unknown how many students completed these exercises.) The students were mainly studying for a BA English Language, but participants include a few studying English Literature, History, Philosophy and Politics.

The post-test administered at the end of the course was identical to the pre-test. No feedback was given to the students on either occasion. The aggregated results of the post-test are given in Table 8 below, together with the results of the pre-test. 64 students did the pre-test, 67 the post-test. However, it is unclear whether all 64 are included in the 67.

Table 8 Reading University Pre- and Post-test results (% correct)

Item	Pre-test Total **n = 64**	Pre-test %	Post-test Total **n = 67**	Post-test %
verb	61	95	66	99
noun	62	97	67	100
countable noun	36	56	49	73
passive verb*	12	19	14	21
adjective	55	86	55	82
adverb	33	52	44	66
definite article	26	41	32	48
indefinite article	20	31	28	42
preposition	23	36	47	70
relative pronoun	13	20	38	57
auxiliary verb	14	22	24	36

past participle	17	27	35	52
conjunction	47	73	54	81
finite verb	7	11	25	37
infinitive	17	27	26	39
subject	53	83	66	99
predicate*	2	3	0	0
direct object	18	28	34	51
indirect object	16	25	38	57

* these concepts / terms were not covered in the course

Table 9 presents the descriptive statistics for the 19 items:

Table 9 Descriptive statistics for pre-and post test, percentage scores

	Mean	N	Std. Deviation	Std. Error Mean
Pre test %	43.79	19	29.472	6.761
Post test %	58.42	19	27.001	6.194

A t-test of the significance of the difference between means showed a highly significant difference (t=5.226, df=18, p=.000), indicating a substantial improvement in scores of 15 percentage points. Unsurprisingly, those concepts that were not covered during the course (passive verb and predicate) did not improve, whereas those that had been covered did show notable increases, except for noun and verb, which showed a ceiling effect. Interestingly, whilst high scores for "subject" nevertheless increased (from 83% to 99%), similarly high scores for the pre-test of "adjective" showed a small decline (86% to 82%) on the post-test.

Nevertheless, these results confirm that instruction can and does result in improved recognition of parts of speech and grammatical functions.

Study Two

Introduction

In 2004-5, colleagues in the Department of Linguistics and English Language at Lancaster University noted, when marking student essays and exam scripts, how little the undergraduate students appeared to know about what were thought to be simple grammatical matters, and how ungrammatical their writing often was. This is, of course, an age-old lament, especially

from ageing professors. Yet it seems particularly unfortunate that students of English Language and Linguistics appear to be deficient in both their procedural and declarative knowledge of English grammar - this applies particularly to native speakers of English.

In staff meetings in 2005, similar issues of students' knowledge about language were discussed in the context of reforming and reformulating First Year undergraduate programmes in Linguistics, English Language and Sociolinguistics. It was believed by several colleagues that students do not have a sufficient foundation in linguistic terminology and analysis to cope with Second and Third Year courses, and so a revision of First Year courses was introduced in the academic year 2006-7.

It was agreed to devise a different way of teaching the grammar that was already in the programme syllabi. Course LING 101 (Language Description) was rearranged. Up to 2005/6, students on this course took four or five weeks to cover part of speech (POS) analysis and parsing, taught via computer, with one computer laboratory session per week. But by the time this material was being covered, students were already being exposed to other, more complex grammar material on other modules. Thus, the main change made to LING 101 was to compress the material, in that three lectures were developed to introduce the material in the computer-based course, and students were expected to cover (the same quantity of) computer-based work in their own time. These changes meant that the most basic material was covered in weeks 5 and 7 of Term 1. The material students were tested on remained the online course material on part of speech analysis and parsing. This change ensured that the necessary materials were taught before somewhat more advanced grammar content was introduced in LING 151 (Introduction to General Linguistics) and LING 130 (Introduction to English Language). Descriptions of the courses students can take are available at http://www.ling.lancs.ac.uk/study/undergrad/courses.htm.

This curriculum revision, albeit rather minimal, offered a unique opportunity to research this area and so it was decided to set up a baseline study in the academic year 2005-6, to test colleagues' intuitions, and to explore methodologies for researching the matter. Subject to satisfactory conduct of the baseline study, the study would be repeated in subsequent academic years, once the curricular reform had been introduced, to see whether students' knowledge had improved.

Research questions

RQ1 Is there any improvement in test performance between Time 1 and Time 2 (pre-test and post-test?)

RQ2 Is there any difference in performance between the baseline study on the one hand, and the post-baseline period (2006-09) on the other hand?

Method

Initially we experimented with a test based on the syllabus and units of LING 101 and 151. However, the design of the test was unsatisfactory, and so it was decided to use an already existing metalinguistic test, which had been piloted and administered in an ESRC-funded research project in 1992 and 1994 (see Study One above and Alderson and Steel, 1995, Alderson et al, 1997). This test (shown in Appendix 1) consisted of three sections, the first of which contained the 19 items of the Bloor test described in Study One and Alderson *et al* (1997).

Section One (Grammatical Categories and Functions), tested students' ability to identify particular parts of speech and grammatical functions in given sentences, and was identical to the test used in Study One. Section Two required students to correct an error in each of 15 sentences (Part a), and to articulate the rule that had been broken in each sentence (Part b). Part a) is considered to test students' procedural or implicit knowledge of language, whereas Part b) is believed to test students' declarative or explicit knowledge of grammar. Section Three was taken from the Words in Sentences part of the Modern Language Aptitude Test (MLAT - Carroll and Sapon, 1959, 2002) and tested students' ability to identify in a target sentence the word(s) that performed the same grammatical function as an underlined word in an example sentence,

The test battery was administered as early as possible in the academic year 2005-6, and then repeated towards the end of the same academic year as a form of post-test. It was then repeated in the following academic years, the pre-test always taking place before the innovative material in LING 101 was taught, and the post-test being administered in the early weeks of Term 3, after students had been exposed to a range of grammatical analyses in different courses.

In 2005-06, 96 First Year students took the metalinguistic test at Time 1 (early November, 2005) - five weeks after the beginning of the academic year but before any formal courses in grammar had been taught. The test was repeated in May, 2006 (Time 2) after all students had taken a course in basic grammatical terminology and usage. 107 students took the post-test at Time 2. However, when identifying students who had taken the test at both Time 1 and Time 2, we were able to match library card numbers for 40 students only. At Time 2 67 students either did not give their library card number, or their library card number did not match any library card numbers recorded at Time 1. Whilst we were able to analyse the test results for Time 1 separately from Time 2, in subsequent years we only analysed the tests of those who had taken tests at both Time 1 and Time 2.

Given the possible bias that may have resulted, with only the better or more committed students taking the test at both times, we compared the pre- and post-test results in 2005-6 of all students with the pre- and post-test results of those who had taken the test on both occasions. The results showed the hypothesis of slight bias to be sustained, with the larger group always averaging lower means than the smaller matched group. We must therefore regard the results of matched groups for the years 2006-7 to 2008-9 to be at least potentially somewhat better than the results of unmatched groups.

For comparison purposes with students in later years, we only present here results for those students who had taken the test at both times, since we wish to see whether there was any improvement in performance over time.

Results of pre- and post-tests

Table 10 shows the descriptive statistics (means and standard deviations) for the pre- and post-tests

Table 10 Descriptive statistics of the pre and post tests (Time 1 above, Time 2 below).

Year	Section 1 (k=20)	Section 2 (k=30)	Section 3 (k=45)	Total (k=95)
2005-6 (n=40)	10.83 (4.175)	19.38 (2.984)	18.23 (4.041)	48.43 (8.685)
Baseline study	12.88 (2.839)	21.68 (4.022)	21.300 (4.473)	55.85 (8.816)
2006-7 (n=21)	10.33 (3.6380	20.14 (4.464)	17.81 (6.455)	48.29 (12.215)
	14.29 (3.165)	22.48 (3.203)	20.29 (5.649)	57.05 (9.856)
2007-8 (n=54)	9.74 (2.909)	18.46 (3.745)	16.37 (3.852)	44.57 (7.849)
	11.94 (4.114)	21.67 (3.661)	20.57 (4.487)	54.19 (8.711)
2008-9 (n= 23)	12.22 (3.630)	18.09 (3.617)	19.65 (4.978)	49.96 (9.378)
	13. 48 (3.930)	22.22 (3.741)	20.87 (5.311)	56.565 (9.935)

Paired sample t-tests on the three test sections and the total scores for the pre- and post-tests were conducted with the following results (Table 11)

Table 11 Significance of the difference between Time 1 and Time 2 in Table 10

Year	Section 1	Section 2	Section 3	Total
2005-6 (n=40)	p=.001	p<.000	p<.000	p<.000
2006-7 (n=21)	p<.000	p=.005	p=.009	p<.000
2007-8 (n=54)	p<.000	p<.000	p<.000	p<.000
2008-9 (n=23)	NS	p<.000	NS	P=.001

When years were combined to arrive at a larger n size, the following results were obtained. The results of paired sample t-tests are shown for the three test sections and the total scores for the pre- and post-tests.

Table 12 Significance of the difference between Time 1 and Time 2 – Post-baseline

(Time 1 above, Time 2 below).

N size	Section 1 (k=20)	Section 2 (k=30)	Section 3 (k=45)	Total (k=95)
98	10.45 (3.371	18.735 (3.913)	17.45 (4.914)	46.63 (9.484)
	12.81 (3.976)	21.97 (3.568)	20.58 (4.901)	55.36 (9.253
Difference T2>T1	p<.000	p<.000	p<.000	p<.000

If we add to this the matched baseline data for 2005-6, we get the following figures

Table 13 Significance of the difference between Time 1 and Time 2 – All years combined

N size	Section 1 (k=20)	Section 2 (k=30)	Section 3 (k=45)	Total (k=95)
138	10.56 (3.611)	18.92 (3.669)	17.67 (4.677)	47.15 (9.264)
	12.83 (3.673)	21.88 (3.693)	20.79 (4.776)	55.50 (9.099)

For the larger data set for four cohorts the means for Time 2 were always significantly higher than the means for Time 1 ($p<.000$) in Table 13. When the total scores at Time 1 and at Time 2 are compared across all four cohorts, there are no significant differences by cohort, although post hoc tests show that the 2007-8 cohort was significantly lower than the other three cohorts at Time 1. At Time 2, however, there were no significant differences across cohorts.

Table 14 ANOVA and post hoc tests, all four years combined

		Sum of Squares	df	Mean Square	F	Sig.
Total T1	Between Groups	631.583	3	210.528	2.536	.059
	Within Groups	11126.221	134	83.031		
	Total	11757.804	137			
Total T2	Between Groups	174.647	3	58.216	.699	.555
	Within Groups	11167.853	134	83.342		
	Total	11342.500	137			

Post-hoc tests Time 1

Duncan

Cohort	N	Subset for alpha = 0.05	
		1	2
2007-8	54	44.5741	
2006-7	21	48.2857	48.2857
2005-6	40	48.4250	48.4250
2008-9	23		49.9565
Sig.		.127	.510

Post-hoc tests Time 2

Duncan

Cohort	N	Subset for alpha = 0.05
		1
2007-8	54	54.1852
2005-6	40	55.8500
2008-9	23	56.5652
2006-7	21	57.0476
Sig.		.277

Interestingly, however, a One-Way ANOVA with the gain score (Total 2 – Total 1) as the dependent variable and Year of Cohort as the independent variable showed no significant difference among the four cohorts in terms of the gains made. It would thus appear that the curricular reform itself has made no significant impact on gain scores over time.

Table 15 ANOVA of gain scores by cohort year

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	193.408	3	64.469	1.248	.295
Within Groups	6919.896	134	51.641		
Total	7113.304	137			

Results of item analysis, by Year and Time 1 and 2

Appendix 2 contains the details of the item analyses. The main findings show that the majority of items were easier at Time 2 than at Time 1, in other words that students had improved, and this was as true for the baseline study as it was for the years after the curriculum reform. The exceptions in Section 1 Parts 1 and 2 (Identify parts of speech or functions in sentences) were those items that had already been very easy at Time 1 (eg. Verb, Noun, Adjective), which showed minor declines but were still very easy. A notable increase in performance was seen for Predicate, which had a facility value of 10% at Time 1 but a facility value of 39% at Time 2.

Conclusions

The results of pre- and post-tests showed that students' knowledge about language did increase after taking a course in grammar. This answers Research Question 1 and confirms the findings of the Reading University study reported in Study One. However, the changes to the curriculum introduced in 2006-7 did not result in significant improvement in subsequent years over the performance of students in the baseline study of 2005-6. This is a negative answer to Research Question 2.

It has to be said, however, that the changes to LING101 were fairly minimal, and certainly not radical. It remains to be shown whether more far-reaching changes would have a greater impact. Moreover, it is unclear at present whether colleagues feel that the improvement made by students represents a meaningful and acceptable increase in knowledge about language.

One possible limitation of Study Two is that the tests used to measure knowledge about language were not direct achievement tests related to the specific curriculum (since the curriculum changed somewhat in 2006). Had it been possible to devise acceptable tests of the curriculum in the time available, greater improvement might have been shown, and there might even have been an improvement in post-reform cohorts' knowledge about language compared with that of the baseline study cohort.

An analysis of the metalinguistic terminology used by first year students of linguistics.

Despite the possible weaknesses of the measures used in Study Two, it was nevertheless felt interesting and possibly useful to examine Section Two of the pre- and post-tests, in order to compare students' procedural and declarative knowledge about language, and particularly to examine the students' formulations of the rules that described the errors in the target sentences.

Study Rationale

Section 2 of the metalinguistic test consists of 15 items, each with two parts. Part a) of each item requires students to correct a sentence which displays poor grammar. In Part b) they are asked to give a rule to account for this correction. The complete instructions and an example are given below:

This section has 15 English sentences, each of which has a mistake.

For each sentence:

1. *Rewrite the faulty part of the sentence correctly. (There will only be one part that is wrong.) Do **NOT** rewrite the whole sentence.*
2. *Underneath each sentence explain the grammatical rule which you think has been broken.*

Example:

1. I often goes to the cinema.

Correct version: _____go_____

Rule: The verb must agree with the subject_____

(Do not write: "Change 'goes' to 'go')

(See Section 2 of Appendix 1 for the full set of items.)

The purpose of this part of Study Two was to examine the short responses from students in Part b) in order to explore what the students appeared to have mastered and what they appeared to have difficulty with, with a view to making further adjustments to the input which students receive in the first year of their studies. By looking at their actual responses as well as the item analysis statistics it was hoped we would gain a clearer picture of the nature of their ability to use metalinguistic terminology appropriately.

The following specific research questions were formulated:

RQ1) Which items did the students find easiest and most difficult in Section 2?

RQ2) Which terms constitute the students' metalinguistic terminology?

RQ3) Which terms are used acceptably and unacceptably?

RQ4) Was there a change in the students' use of metalinguistic terms between the baseline study (2005/06) and the later cohorts (2006 - 9), i.e. after changes to the first year grammar course LING 101?

RQ5) In the post-baseline period (2006 - 9), was there a change in students' use of metalinguistic terms between the Time 1 results (November) and the Time 2 results (May), i.e. after they had taken first year courses?

In what follows, we first describe the methodology and results for RQ1, and then we describe the methodology for RQs 2 – 5, followed by the results of RQs 2 – 5.

RQ1) Which items did the students find easiest and most difficult in Section 2?

To answer RQ1, the 5 items with the highest facility values in Part a) and again in Part b) were identified as the easiest items over the four years of the whole study. This was repeated with the lowest facility values to identify the most difficult items.

Part a) responses.

First we look at the responses made to Part a) of each item where students are required to correct an ungrammatical sentence. This part draws on their implicit or procedural grammatical knowledge, requiring students only to recognise and correct an error, but not necessarily to know the underlying rules for such changes. Table 16 shows the facility values of each item, for the baseline study and for the post-baseline period 2006-9, in each case for both Time and Time 2.

Table 16 FV values – Section 2 Part a) (sentence correction) only

Item	Baseline Time 1	Baseline Time 2	Total Time 1 Years 06-9	Total Time 2 Years 06-9
	N=40	N=40	N = 98	N=98
1	1.00	1.00	0.99	1.00
2	0.93	1.00	0.98	0.99
3	0.88	0.98	0.86	0.92
4	0.88	0.98	0.86	0.91
5	0.95	0.95	0.93	0.97
6	0.93	0.83	0.81	0.84
7	0.98	0.98	0.95	0.97
8	0.93	0.90	0.92	0.88
9	0.98	0.98	0.94	0.98
10	0.98	0.98	0.87	0.98

11	0.93	0.95	0.85	0.96
12	0.93	0.93	0.82	0.93
13	0.88	0.95	0.78	0.88
14	0.85	0.98	0.73	0.88
15	0.73	0.88	0.59	0.81

It can be seen that most items were very easy at both points in time, both in the baseline study and the post-baseline period. Table 17 shows the 5 easiest items at various points in time.

Table 17 Target grammatical points of the <u>easiest</u> Part a) items

Items	Target grammatical point	T1 BL	T1 PBL total	T2 BL	T2 PBL total
1) I walk to work very quick.	(adverb)	✓	✓	✓	✓
2) When her said that, Jack hit her.	(subject pronoun)		✓	✓	✓
5) I live in a flat at a top of an old house.	(articles)	✓	✓		
7) The children put on their coat.	(plural/ singular)	✓	✓		✓
9) I don't like people which are always apologising.	(relative pronoun)	✓	✓	✓	✓
10) I opened the door, but I couldn't see nobody.	(double negative)	✓		✓	✓
14) Give the spanner to I.	(subject pronoun)			✓	

Key: T1 BL – in baseline only. T1 PBL total – across cohorts 06/07 to 08/09 combined

It can be seen that there is a range of grammatical points found amongst the easiest items, showing no clear pattern.

Table 18 shows the most difficult grammatical points in Part a) of Section 2

Table 18 Target grammatical points of the <u>hardest</u> Part a) items

Items	Target grammatical point	T1 BL	T1 PBL total	T2 BL	T2 PBL total
3) Every day I am making good resolutions.	(tense)	✓			
4) She's the taller of the four sisters	(comparative/ superlative)	✓			
5) I live in a flat at a top of an old house.	(articles)			✓	
6) Do you know anyone having lost a cat?	(verb form)		✓	✓	✓
8) He tried and ate something but he couldn't.	(verb form)			✓	✓
12) I'll tell you as soon as I'll know.	(tense)		✓	✓	
13) I heard him went downstairs.	(verb form)	✓	✓		✓
14) Give the spanner to I.	(subject pronoun)	✓	✓		✓
15) She has phoned a few minutes ago.	(tense)	✓	✓	✓	✓

In summary, the 6 *easies*t items on Part a), which relates to sentence correction only, required recognition of a variety of grammatical points, namely:

Item 1) Adverb

Item 2) Subject pronoun

Item 5) Articles

Item 7) Plural/ singular

Item 9) Relative pronoun

Item 10) Double negative

Five of the six *most difficult* items (6, 8, 12, 13, 15) involved verb patterns, either form or tense. The other item (14) deals with subject pronouns.

Part b) responses.

Part b) involves students supplying the relevant grammar rule to account for the error identified in Part a), presumably thereby testing their explicit or declarative knowledge of grammar. Table 19 presents the facility values of all items, which vary considerably in difficulty. Tables 20 and 21 show the easiest and most difficult items respectively.

Table 19 FV values – Section 2 Part b) (supplying the rule)

Item	Baseline Time 1	Baseline Time 2	Total Time 1 Years 06-9	Total Time 2 Years 06-9
	N=40	N=40	N = 98	N=98
1.b	0.53	0.60	0.54	0.69
2.b	0.30	0.35	0.48	0.65
3.b	0.18	0.33	0.32	0.49
4.b	0.45	0.48	0.51	0.73
5.b	0.60	0.75	0.44	0.72
6.b	0.08	0.25	0.15	0.18
7.b	0.85	0.80	0.84	0.93
8.b	0.23	0.38	0.30	0.33
9.b	0.40	0.45	0.36	0.43
10.b	0.48	0.60	0.45	0.59
11.b	0.83	0.85	0.72	0.83
12.b	0.15	0.38	0.22	0.44
13.b	0.10	0.45	0.18	0.31
14.b	0.28	0.40	0.20	0.40
15.b	0.25	0.40	0.16	0.37

Table 20 Target grammatical points of the <u>easiest</u> Part b) items

Items	Target grammatical point	T1 BL	T1 PBL total	T2 BL	T2 PBL total
1) I walk to work very quick.	(adverb)		✓	✓	✓
2) When her said that, Jack hit her.	(subject pronoun)		✓		
4) She's the taller of the four sisters	(comparative/ superlative)		✓		✓
5) I live in a flat at a top of an old house.	(articles)	✓		✓	✓
7) The children put on their coat.	(plural/ singular)	✓	✓	✓	✓
10) I opened the door, but I couldn't see nobody.	(double negative)			✓	
11) When I was a small baby I have colic.	(tense)	✓	✓	✓	✓

Table 21 Target grammatical points of the <u>most difficult</u> Part b) items

Items	Target grammatical point	T1 BL	T1 PBL total	T2 BL	T2 PBL total
2) When her said that, Jack hit her.	(subject pronoun)			✓	
3) Every day I am making good resolutions.	(tense)	✓		✓	
6) Do you know anyone having lost a cat?	(verb form)	✓	✓	✓	✓
8) He tried and ate something but he couldn't.	(verb form)	✓		✓	✓
12) I'll tell you as soon as I'll know.	(tense)	✓	✓	✓	
13) I heard him went downstairs.	(verb form)	✓	✓		✓
14) Give the spanner to I.	(subject pronoun)		✓		✓
15) She has phoned a few minutes ago.	(tense)		✓		✓

In summary, the consistently *easiest* items concerned knowledge of singular/ plural and tense, and also adverb and comparative/ superlative if we consider the post-baseline data only. However, the *most difficult* items also included tense, as well as several verb forms.

Overall summary of RQ1

In both Parts a) and b) across all cohorts, item 7 was amongst the easiest items, requiring knowledge of singular/plural.

The items found most difficult across Parts a) and b) were items 6, 8, 12, 13, 14, 15 and all but 14 are a matter of verb forms or tenses. This suggests that students had neither implicit nor explicit grammatical knowledge in these areas. It therefore seems that verbs in general cause the most problems to students in terms of correct usage, and ability to explain usage.

Methodology of RQs 2 – 5

To examine RQs 2 to 5, the same basic methodology was used, which we describe first, before giving the results for each Research Question.

The students' responses to Section 2 Part b) were analysed using Wordsmith Version 5, a software package which can produce wordlists, key word lists and concordances from the texts entered.

Wordlists were drawn up for metalinguistic terms only. This involved manually eliminating all but metalinguistic terms from the wordlists which were produced with Wordsmith. The basis for deciding what counted as a metalinguistic term was whether it was found in relevant grammatical reference books and two were selected for this purpose: 1) The Dictionary of Language Teaching & Applied Linguistics by Richards, Platt & Platt and 2) An A-Z of English Grammar and Usage by Leech.

The fifty most frequently used metalinguistic terms were identified, but it should be noted that only individual words are listed. Therefore words are included which may actually form part of a multi-word term (e.g. *indefinite*, as part of the phrase *indefinite article*).

For comparison of students' responses against a set of 'expected' or appropriate terminology, a list of metalinguistic terms relevant to the 15 items was drawn up. Referring to the answer key was insufficient because this was composed of a short set of students' responses from the first cohort which had been found acceptable by the markers, rather than a single 'ideal' response.

The 'expected' terms were derived from our own analysis of the items, by reference to the marking scheme, as well as from 'ideal' responses to each item supplied by Dr. Andrew Hardie and Prof. Geoffrey Leech, two experts in grammar from the Department of Linguistics and English Language at Lancaster University. This provided a list of possible appropriate terms which might be found in correct responses for each item. See Appendices 3 and 4 for a list of these terms. They are henceforth referred to as 'expected' terms.

Comparisons of wordlists then took place on the following bases:

- Acceptable/ Unacceptable (RQ3)
- Baseline/ Post-baseline (RQ4)

- Time 1/ Time 2 (RQ5)

Results of RQ2) "Which terms constitute the students' metalinguistic terminology?"

Table 22 below lists the fifty metalinguistic terms used most frequently by the students in their responses to the items in Section 2 of the test. Due to changes in the curriculum after the baseline study, only the post-baseline cohorts (2006- 09) have been examined. The wordlist is drawn from the sets of acceptable as well as unacceptable responses as well as from both Time 1 and Time 2.

Table 22 The fifty most frequently used metalinguistic terms used by 2006 – 2009 cohorts in Section 2 of the test.

Rank	Word	Frequency
1	TENSE	469
2	PAST	349
3	VERB	312
4	PRONOUN	261
5	PRESENT	223
6	PLURAL	198
7	SUBJECT	162
8	AGREE	161
9	ADVERB	128
10	ARTICLE	116
11	FORM	113
12	OBJECT	110
13	SUPERLATIVE	102
14	DEFINITE	84
15	SENTENCE	79
16	ADJECTIVE	77
17	PERSON	76
18	NEGATIVE	68
19	NOUN	63
20	SIMPLE	54

Rank	Word	Frequency
21	RELATIVE	51
22	PROGRESSIVE	49
23	COMPARATIVE	47
24	INFINITIVE	43
25	PARTICIPLE	42
26	SINGULAR	42
27	FUTURE	40
28	PERSONAL	33
29	CONJUNCTION	32
30	INDEFINITE	31
31	VERBS	31
32	ASPECT	29
33	CONTINUOUS	27
34	PREPOSITION	27
35	DETERMINER	24
36	SUFFIX	23
37	PERFECT	22
38	AUXILIARY	21
39	NEGATION	21
40	TENSES	21
41	NEGATIVES	19
42	CASE	17
43	DEFINATE*	17
44	OBJECTS	17
45	ADVERBS	16
46	DIRECT	16
47	POSSESSIVE	16

Rank	Word	Frequency
48	ACCUSATIVE	14
49	AGREEMENT	14
50	INDIRECT	14

* = mis-spellings from students' original responses left in

This list includes the 'basic' terms such as *noun, verb, adjective*, which we would expect of many students as part of their general knowledge of English language and also more advanced terms such as *aspect* or *determiner*, which we would expect of linguistics students.

It is interesting to compare these results with the results for RQ1 because four of the five most frequently used words in Table 7 are related to verbs (namely: *tense, verb, past, present*) which were identified in answer to RQ1 as the area which caused most problems for students.

Results of RQ3) "**Which terms are used acceptably and unacceptably?"**

The fifty most frequently used metalinguistic terms found in acceptable and unacceptable responses were compared and combined for comparison. These were also compared with the 'expected' terms for Part b) of all 15 items.

Table 23 A comparison of terms used by students considered acceptable and unacceptable, and 'expected' terms.

	Found in acceptable list only	Found in unacceptable list only	Found in both lists	Found in list of 'expected' terminology
ADJECTIVE			✓	✓
ACCUSATIVE		✓		✓
ACTIVE		✓		×
ADVERB/S			✓	✓
AGREE			✓	×
AGREEMENT			✓	✓
ARTICLE			✓	✓
ASPECT			✓	×
AUXILIARY			✓	×
CLAUSE		✓		✓
CASE	✓		✓	✓
COLLECTIVE		✓		×
CONDITIONAL		✓		✓
COMPARATIVE	✓		✓	✓
CONJUNCTION			✓	✓
CONTINUOUS			✓	✓
DEFINATE [sic]			✓	n/a
DEFINITE			✓	✓
DETERMINER			✓	✓
DIRECT		✓		✓
ENDING			✓	×
FUTURE			✓	✓

	Found in acceptable list only	Found in unacceptable list only	Found in both lists	Found in list of 'expected' terminology
INDEFINATE [sic]			✓	n/a
INDEFINITE			✓	✓
INDIRECT		✓		✓
INFINITIVE			✓	✓
INFLECTION		✓		×
MODAL	✓		✓	×
NEGATION	✓		✓	×
NEGATIVE/S			✓	✓
NOMINATIVE	✓		✓	✓
NOUN			✓	✓
NUMBER	✓		✓	✓
OBJECT/S			✓	✓
PARTICIPLE			✓	✓
PASSIVE		✓		✓
PAST			✓	✓
PERSON			✓	×
PERFECT		✓		✓
PERSONAL			✓	✓
PLURAL			✓	✓
POSSESSIVE	✓		✓	✓
PREPOSITION		✓		✓
PRESENT			✓	✓
PROGRESSIVE			✓	✓

	Found in acceptable list only	Found in unacceptable list only	Found in both lists	Found in list of 'expected' terminology
PRONOUN/S			✓	✓
RELATIVE			✓	✓
SENTENCE	✓		✓	×
SIMPLE			✓	✓
SINGULAR			✓	✓
SUBJECT/S			✓	✓
SUFFIX			✓	✓
SUPERLATIVE	✓		✓	✓
TENSE/S			✓	✓
VERB/S			✓	✓

It is interesting to note that most metalinguistic terms occur in both acceptable and unacceptable rules. This suggests that students are in general rather unsure in their use of these terms. There were also metalinguistic terms which some students used (within both acceptable and unacceptable responses) which were either irrelevant to the items in Section 2 or which did not appear in the 'expected' list. This may indicate that these term cause confusion and should perhaps be the focus of study to clarify their meaning. These terms are *active, agree, aspect, auxiliary, collective, ending, inflection, modal, negation, person, sentence.* However, *sentence* is a general term which could be applied to any of the 15 responses. It is unlikely that students do not understand what a sentence is. It is perhaps more likely that in providing precise responses the experts did not need to use the word *sentence,* whereas those students with an inadequate range of terminology and knowledge needed to use it frequently.

A mere six terms occurred only in acceptable rules, namely *case, comparative, negation, nominative, number, possessive, superlative*

In the cases where the 'expected' terms occur in the 'unacceptable' list but do not occur in the 'acceptable' list, this would appear to indicate a gap in students' knowledge. Such terms include *accusative, clause, conditional, direct, indirect, passive, perfect* and *preposition*.

Results of RQ4) "**Was there a change in the students' use of metalinguistic terms between the baseline study (2005/06) and the later cohorts (2006 - 9)?"**

The fifty most frequently used metalinguistic terms resulting from those responses which were deemed to be acceptable in the baseline study (05/06) were compared with those

deemed to be acceptable which were used by all cohorts after the baseline study (i.e. 06/07 to 08/09). Time 1 and Time 2 data were combined in both cases.

The following words did not appear in the top fifty list of terms used in the baseline study acceptable responses but do appear in the post-baseline results, suggesting that these are terms students can handle more confidently in these later cohorts. However, not all these words are necessarily used accurately: *agree, aspect, case, ending, modal, nominative, singular.*

Conversely, the following words did not appear in the top fifty list of words used in the post-baseline period acceptable responses but do appear in the baseline study results, i.e. prior to changes in the LING 101 course: *clause, comparisons, countable, definite, direct, gradable, marker, pluralised, pronouns.*

There does not appear to be any notable qualitative difference in these two sets of terms to explain this difference and all except possibly *gradable* are appropriate terms for responses to Section 2 items.

Some words appear in both lists but a notable rise in usage is seen in the Post–baseline data. These include: *continuous, determiner, infinitive, simple, tense, verb.*

All these terms would be appropriate in acceptable formulations of the rules. Changes in metalinguistic terms' rankings from the baseline to the post-baseline period were examined, and any words which had changed rank more than 5 places are listed in Table 24.

Table 24 Changes in ranking of terms in acceptable responses in baseline and post-baseline data

Baseline Rank	Metalinguistic Term	Post-baseline Rank	Difference Baseline: Post-baseline Rank
17	AGREEMENT	48	+33
12	DEFINITE	38	+26
29	POSSESSIVE	44	+15
30	DETERMINER	43	+13
28	SUFFIX	39	+11
40	NUMBER	47	+7
11	SENTENCE	18	+7
36	CONJUNCTION	42	+6
22	PERSONAL	28	+6
24	COMPARATIVE	17	-7
43	AUXILIARY	35	-8

Baseline Rank	Metalinguistic Term	Post-baseline Rank	Difference Baseline: Post-baseline Rank
39	NEGATION	27	-12
33	SIMPLE	19	-14
38	DEFINITIVE	13	-25

The use of the terms *agreement* and *definite* changed radically between the baseline data and the post-baseline. Both are relevant to the expected responses for the rules but in only one item each.

Results of RQ5) "In the post-baseline period (2006 - 9), was there a change in students' use of metalinguistic terms between the Time 1 results and the Time 2 results?"

The following terms do not appear in the top fifty terms used in Time 1 acceptable responses but do appear in Time 2, suggesting words which entered students' metalinguistic terminology by the end of the first year of their studies.

Accusative, action, agreement, aspect, direct, form, marked, modal, nominative, number, participle, perfect, progressive

The addition of words used for description of tenses (*participle, perfect, progressive*) is noteworthy, since verbs and verb forms were noted in Section 2 above in answer to RQ1 as an area of difficulty for students. The use of the terms *tense* and *verb* increased from Time 1 to Time 2. The use of other words which can be associated with the description of tense and verb forms also increased (*future*, *past*, *present*, *simple*), although use of *infinitive* remained roughly the same.

Conversely, terms which were found in Time 1 and not in Time 2, consist mostly of mis-spellings, suggesting that words and their spellings became more familiar. Other words appearing in Time 1 but not Time 2 include: *clause, contraction, indirect, pluralised , singular.* It is not clear why the last two were not used at Time 2.

When examining terms used in unacceptable rules, the following words are used less at Time 2 than Time 1, suggesting that these terms have been mastered to some degree: *adverb, adjective, agree, continuous, definite, future, grammatical, indefinite, phrase, plural, present, sentence, subject, suffix, tense, verb.*

The following are used at the same level at Time 1 and Time 2: *auxiliary, conditional, noun, personal, singular.* These could be considered to constitute a stable core of students' metalinguistic terminology.

Other terms were used more often in T2 than T1, which may suggest an increase in the core terminology: *past, pronoun, perfect, progressive,* albeit used incorrectly. Moreover, the following words did not appear at all in the top fifty wordlist used in Time 1 unacceptable responses but do appear in Time 2, suggesting a change in students' familiarity with this

terminology, although, it must be remembered, used within responses marked wrong: *aspect, perfect*

Summary

RQ1: It appears that students have difficulty with items where the target grammar was verbs, but it must be borne in mind that in Section 2 of the test there was a bias towards such items.

RQ2: A wordlist (Table 22) shows which words are used most frequently. Some are 'common knowledge' but more technical, specialist terms expected of linguistics students are also included.

RQ3: It is hard to make any generalisation about which terms have been mastered or not mastered because most terms appear in both acceptable and unacceptable formulations of rules.

RQ4: Changes to the LING 101 first year course do not appear to have had a notable effect on students' metalinguistic knowledge.

RQ5: The students' metalinguistic terminology does develop over the five to six months of their first year of university study.

Limitations of the study

While the study offered the opportunity to examine the ability of several cohorts of students some difficulties arose in the analysis of the data.

The marking scheme was generous, in that a student's response which consisted of a correct phrase, together with another phrase which was not entirely accurate, earned a student a mark. Thus the whole response (both incorrect and correct aspects) was included in the batch of responses deemed correct. This will have contaminated the data to a certain degree. A more demanding marking system would have eliminated this and is recommended for any replication of this study.

Section 2 of the test covered only a limited range of grammatical structures. Since the test contained only fifteen items the possible range is necessarily limited, but some areas were repeated. A longer test without such repetitions could have given a fuller picture of the students' knowledge.

In the time and with the resources available, we were unable to analyse the formulations of the rules in Part b) fully, and further analysis is clearly necessary. To facilitate further analysis of the students' rules, we will make the full dataset of rules available on the Department of Linguistics and English Language website.

Implications

The outcome of this study seems to suggest that the areas students had most difficulty with were, in general, verbs and tenses. However, this can only be a tentative conclusion due to the bias towards verbs in Section 2 of the test.

The changes to the course LING 101 did not seem to have much effect in improving students' ability to understand, and thus accurately use a wider range of metalinguistic terminology.

An examination of how changes to the course correspond to the areas identified in this study may be useful.

Students' metalinguistic terminology seems to increase but they are not necessarily able to use the terms they acquire accurately. An increased focus on teaching the use of the terms rather than simply presenting them to students might ensure that they are able to fully understand them, rather than just being familiar with them.

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Appendix 1 The Test of Metalinguistic Knowledge

Library card number: _____

ENGLISH GRAMMAR

ABOUT YOU

Did you take English Language at 'A'Level? Y / N

If your answer is 'Y', which board did you take the exam with?

_____

Which courses are you taking in Part I within the Department of Linguistics? Tick those that apply

☐ LING 101 ☐ LING 132 ☐ LING 152

☐ LING 130 ☐ LING 133 ☐ LING 153

☐ LING 131 ☐ LING 151

SECTION ONE: GRAMMATICAL CATEGORIES AND FUNCTIONS (5 minutes)

You are advised to take no more than **5 minutes** on this section.

1. *From the sentence below select one example of the grammatical item requested and write it in the space provided. NOTE: You may select the same word (s) more than once if appropriate*:

Materials are delivered to the factory by a supplier, who usually has no technical knowledge, but who happens to have the right contacts

1. verb .....……..
2. noun .....……
3. countable noun .....……..
4. passive verb .....……
5. adjective .....……
6. adverb .....……..
7. definite article .....…….
8. indefinite article.....……
9. preposition .....……
10. relative pronoun .....…….
11. auxiliary verb .....……
12. past participle .....……
13. conjunction .....……
14. finite verb .....……
15. infinitive verb .....……..

2. *In the following sentences, underline the item requested in brackets:*

1. Poor little Joe stood out in the snow (SUBJECT)

2. Joe had nowhere to shelter (PREDICATE)

3. The policeman chased Joe down the street (DIRECT OBJECT)

4. The woman gave him some money (INDIRECT OBJECT)

SECTION TWO: ENGLISH ERROR IDENTIFICATION (10 minutes)

You are advised to take no more than **10 minutes** on this section.

This section has 15 English sentences, each of which has a mistake.

For each sentence:

1. *Rewrite the faulty part of the sentence correctly. (There will only be one part that is wrong.) Do **NOT** rewrite the whole sentence.*
2. *Underneath each sentence explain the grammatical rule which you think has been broken.*

Example:

I often goes to the cinema.

Correct version: _____go_____

Rule: The verb must agree with the subject_____

Do not write: "Change 'goes' to 'go')

1. I walk to work very quick.

Correct version:

_____

Rule:

_____

_____

2. When her said that, Jack hit her.

Correct version:

_____

Rule:

_____

_____

3. Every day I am making good resolutions.

Correct version:

_____

Rule:

_____

_____

4. She's the taller of the four sisters.

Correct version:

_____

Rule:

_____

_____

5. I live in a flat at a top of an old house.

Correct version:

_____

Rule:

_____

_____

6. Do you know anyone having lost a cat?

Correct version:

_____

Rule:

_____

_____

7. The children put on their coat.

Correct version:

_____

Rule:

_____

_____

8. He tried and ate something but he couldn't.

Correct version:

_____

Rule:

_____

_____

9. I don't like people which are always apologizing.

Correct version:

_____

Rule:

_____

_____

10. I opened the door, but I couldn't see nobody.

Correct version:

_____

Rule:

_____

_____

11. When I was a small baby I have colic.

Correct version:

_____

Rule:

_____

_____

12. I'll tell you as soon as I'll know.

Correct version:

_____

Rule:

_____

_____

13. I heard him went downstairs.

Correct version:

_____

Rule:

_____

_____

14. Give the spanner to I.

Correct version:

_____

Rule:

_____

_____

15. She has phoned a few minutes ago.

Correct version:

_____

Rule:

_____

_____

SECTION THREE: WORDS IN SENTENCES (15 minutes)

This is a test of your ability to understand the function of words and phrases in sentences.

Look at the following sample item:

A

LONDON is the capital of England.

He liked to go fishing in Maine.

A B C D E

In the first sentence, which we will call the *key* sentence, LONDON is printed in capital letters. Which word in the second sentence does the same thing in *that* sentence as LONDON does in the *key* sentence? The right answer is the word "he", because the key sentence is about "London", and the second sentence is about "he". Therefore the letter A has been written in the left margin as the correct answer.

Here is another sample item:

D

Mary is cutting the APPLE.

My brother John is beating his dog with a big stick.

A B C D E

In the key sentence, APPLE is the name of the thing which is being cut; in the second sentence, dog is the thing which is being beaten. Therefore, the letter D has been written in the left margin of this sheet.

Look at the next example, and write the letter of the correct answer in the left margin of this sheet.

MONEY is his only object.

Not so many years ago, most farming was done by hand.

A B C D E

The right answer is farming; it performs the same function in the second sentence as MONEY does in the key sentence. Therefore, you should have written the letter D in the left margin.

When you are ready, turn over the page and begin the test. Remember, always look over all the choices to find the one which functions most nearly like the word or phrase in the key sentence.

Try to answer every item; if you are not certain of the answer, give your best guess.

1. Jill fell down AND Jack came tumbling after.
   Now, you may wait out there or you may come back on Friday if you wish.
   A B C D E
2. I expect him to do good WORK.
   On his trip across the United States and up to Alaska, Fred expected to see many
   A B C D
   interesting things.
   E
3. John sold DICK his bicycle.
   If their work is up to standard, I will guarantee them a bonus at the end of the week.
   A B C D E
4. The school CLOSED for the summer.
   Despite the efforts we had made to reinforce the material, it tore easily under the
   A B C D
   slightest strain.
   E
5. HE was here.
   Because of the great demand for this product, the committee should ask for it now.
   A B C D E
6. Bill has gone TO make a telephone call.
   Two people are needed to carry this box to the car because it is too heavy for one.
   A B C D E
7. At midnight, the SCREAMING of sirens awakened me.
   Painting in oils is a comforting hobby for busy executives who need relaxation.
   A B C D E
8. The door OPENED quickly.
   Because she had tied the package securely, it arrived without any damage from its
   A B C D
   careless handling.
   E
9. The lake was dotted with SPEEDING boats.
   Sometimes the very best method for good learning is constant practice.
   A B C D E
10. The most influential WRITER of his day, he had but a modest pride of authorship.
    Gockel, a Swiss physicist, sent an electroscope up to a height of 13,000 feet in a
    A B C D
    balloon.
    E

11. They named him BILL.
    Because of his military success during the Civil War, the people made Grant
                                A   B   C   D
    president of the United States.
      E
12. The company owns every substantial PIECE of property in the town.
    Before the dawn of history, men were raising corn very much like what we grow
                A   B   C   D
    today.
    E
13. It is not TO be passed over lightly.
    She talked to me about how I should try to make the horse work instead of letting her
              A   B   C   D
    graze at will.
          E
14. SEVERAL were absent from the meeting.
    In spite of the many proposals which were made, only one could be adopted.
      A   B   C   D E
15. I told him to come BUT he refused.
    If tests are made, even when there seems to be no change this system will show an
    A   B C   D
    advantage, and our customers will be convinced.
              E
16. My finger became SWOLLEN from the infection.
    The child grew strong from the healing sunshine.
                    A   B
    The high wall was nearly hidden from view by the foliage.
        C   D   E
17. My FRIEND went home.
    Behind the house but near the forest stood a barn.
      A   B   C   D   E
18. That is the OLDEST house.
    It is farther from your hotel than the one we saw before, but it is the best example of
          A   B
    earlier dwellings constructed by our former inhabitants.
      C   D E
19. FEW come back.
    In the middle of the lake will be found a small island crowned with a single tree.
            A   B   C D   E
20. He saw several fish SWIMMING slowly by.
    As he was walking down the lane, he found himself wondering who had been there
              A   B   C   D
    before he arrived.
          E

21. THIS is my first trip.
Even though these letters arrived before those, that has not been answered yet.
A B C D E

22. The corn grew TALL during the summer.
She raised yellow tulips in her small garden.
A B C
The storm proved worse as the wind became stronger.
D E

23. TO TELL THE TRUTH, it's hard to say.
To sum up, this product is as efficient as any.
A B
To be or not to be, that is the question.
C D
To start the engine, push this button.
E

24. He drove FROM Boston to New York.
To be safe, he decided to buy spare parts for any emergency.
A B C D E

25. He nailed the board TIGHT against the house.
He always did the job well.
A B C
He poured the pail full.
D E

26. Do AS I say.
Although the weather report predicted clear skies for today, it rained all day.
A B C D E

27. Is THAT your hat?
This looks better on you even though those suits are better bargains than the ones
A B C D
on this rack.
E

28. The weekly meeting, usually held on Friday night, is a fixed ACTIVITY of the Scout program.
Washington was the first president of the United States; he refused the crown that
A B C D
some of his admirers wanted him to have.
E

29. Put it WHERE it will do the most good.
At the signal, proceed to mark it as you were instructed in your last lesson.
A B C D E

30. NONE was more curious to solve the riddle than I.

The government's first task was to check the prescriptions written by the doctors.

A B C D E

31. Which one do YOU think it is?

That one may belong to me.

A B

Please pay me before going on your trip.

C D E

32. A CALCULATING machine is useful to mathematicians.

Skiing is a fine sport during the winter months.

A B C

Seeing is believing.

D E

33. As he sat down to rest, a FEELING of weariness came over him.

Swimming is relaxing exercise for growing boys in training for wrestling.

A B C D E

34. I will buy a car WHEN I get the money.

After you left last night, most of the students remained until the end.

A B C D E

35. She played the piano EXTREMELY well.

Promptly on the dot of five, he came up the stairs, quite flushed with excitement and

A B C

breathing very heavily.

D E

36. A NUMBER of people applied for the position.

I find many candidates who cannot offer more than two years' experience.

A B C D E

37. His wife bought HERSELF a new hat.

Why won't you tell me more about yourself than you did yesterday?

A B C D E

38. WHAT is this?

I do not know what book you want.

A

To whom do these belong?

B

Which fellow is your brother?

C

Those are mine.

D E

39. Let's make this campaign a SUCCESS.
Some people believe that the world is wholly a figment of the imagination;
A B
philosophers call this theory a variety of solipsism.
C D E

40. Which colour do YOU like best?
This one suits me better than the other.
A B C
It makes no difference to me.
D E

41. We plan to take IT today.
On the chance that he would see us, we took steps to put up a beacon.
A B C D E

42. They observed several artists PAINTING landscapes there.
While attempting to catch the ball, he found himself so blinded by the sun that he
A B C
failed to notice the overhanging limb.
D E

43. Some people enjoy EATING clams on the half-shell.
Hacking his way through the teeming jungle, he found abundant evidence of the
A B C D
vanished civilization.
E

44. There is no POINT in going ahead.
When the light changed, he stopped the car.
A B
A river flows down to the sea.
C D E

45. The child hurt HIMSELF.
Although I myself would do that by myself, Mary gained herself the help of some of
A B C D
her classmates.
E

CHECK OVER YOUR WORK IF YOU HAVE TIME

Appendix 2

Item analyses of Section One of the Metalinguistic Test, by Year and Times 1 and 2

Item	2005-6 N=40	2005-6 N=40	2006-07 N = 21	2006-07 N = 21	2007-08 N = 54	2007-08 N = 54	2008-09 N = 23	2008-09 N = 23	Years 2006-9 N = 98	Years 2006-9 N=98
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Verb	0.85	1.00	1.00	1.00	1.00	0.83	0.96	0.96	0.99	0.90
Noun	0.85	1.00	1.00	1.00	1.00	0.83	0.96	0.96	0.99	0.90
Countable noun	0.80	0.98	0.67	0.95	0.61	0.83	0.83	0.87	0.67	0.87
Passive verb	0.30	0.13	0.10	0.24	0.07	0.13	0.26	0.22	0.12	0.17
Adjective	0.83	0.98	0.90	0.95	0.93	0.83	0.91	0.91	0.92	0.88
Adverb	0.50	0.73	0.43	0.71	0.54	0.57	0.57	0.78	0.52	0.65
Definite article	0.60	0.75	0.62	0.76	0.44	0.80	0.57	0.74	0.51	0.78
Indefinite article	0.50	0.68	0.43	0.67	0.43	0.70	0.57	0.70	0.46	0.69
Preposition	0.58	0.75	0.62	0.95	0.48	0.83	0.61	0.78	0.54	0.85
Relative pronoun	0.75	0.75	0.52	0.86	0.39	0.80	0.83	0.78	0.52	0.81
Auxiliary verb	0.33	0.38	0.19	0.29	0.19	0.24	0.35	0.57	0.22	0.33
Past participle	0.55	0.70	0.52	0.67	0.54	0.57	0.52	0.52	0.53	0.58
Conjunction	0.70	0.90	0.71	0.90	0.83	0.81	0.83	0.83	0.81	0.84
Finite verb	0.28	0.55	0.38	0.76	0.17	0.46	0.43	0.48	0.28	0.53
Infinitive	0.38	0.50	0.38	0.62	0.31	0.33	0.48	0.52	0.37	0.44
Subject	0.95	0.98	0.90	1.00	1.00	0.98	0.96	1.00	0.97	0.99

Predicate	0.03	0.13	0.10	0.67	0.02	0.26	0.30	0.43	0.10	0.39
Direct object	0.68	0.68	0.43	0.86	0.44	0.74	0.83	0.91	0.53	0.81
Indirect object	0.40	0.35	0.43	0.43	0.35	0.37	0.48	0.52	0.40	0.42

Appendix 3 - Section 2 items and the target grammar terminology

(The terms linked by / were provided as alternatives for the same concept.

Terms in **bold** identify the main intended target grammar as referred to in the analysis**)**

Item#	Item	Relevant grammatical terminology
1	I walk to work very quickly	**adverb** adjective -ly suffix -ly ending verb modified
2	When her said that, Jack hit her.	**subject pronoun** pronoun personal pronoun object pronoun subject nominative case subject case subjective case clause
3	Every day I am making good resolutions.	**tense** verb present simple present continuous/ present progressive frequency adverbial
4	She's the taller of the four sisters.	**comparative**

		superlative
		adjective
		-er suffix
5	I live in a flat at a top of an old house.	**articles**
		definite
		indefinite
		determiner
		definite article + noun + of
6	Do you know anyone having lost a cat?	**verb form**
		-ing suffix
		present participle clause
		subject
		main clause
		finite relative clause
		non-finite –ing clause
		subordinate clause
		perfect
		object
7	The children put on their coat.	**plural**
		noun
		singular
		agreement
		possessive pronoun
		number
		subject
		object
8	He tried and ate something but he couldn’t	**verb form**
		infinitive

		conjunction
		past tense
		past tense participle
		base form
9	I don't like people which are always apologising.	**relative pronoun**
		pronoun
		antecedent
		human reference
		animacy / animate
10	I opened the door, but I couldn't see nobody.	**double negative**
		indefinite pronoun
		negative pronoun
		negative particle
		negative adverb
		standard English
		dialect
11	When I was a small baby I have colic.	**tense**
		past tense
		present tense
		verb
		present simple
		past simple
		main clause
		subordinate clause
		agreement
12	I'll tell you as soon as I'll know.	**tense**
		verb
		future

		future time
		present tense
		conditional
		conditional subordinate clause
		main clause
		sub clause
		conjunction
13	I heard him went downstairs.	**verb form**
		infinitive/
		bare infinitive/
		basic form
		past simple
		N+V+N+V(basic) pattern
		complement
		object
14	Give the spanner to I.	**subject pronoun**
		pronoun
		personal pronoun
		object pronoun
		preposition
		nominative case
		accusative case
		oblique case
		objective case
		Standard English
15	She has phoned a few minutes ago.	**tense**
		verb
		perfect aspect

present perfect

past simple/

simple past

adverbial(s)/

adverbial phrase

Appendix 4 – Collated alphabetical list of all 'expected' terminology

accusative case
adjective
adverb
adverbial phrase
adverbials
agreement
animacy
animate
antecedent
articles
bare infinitive
basic form
comparative
complement
conditional subordinate clause
conjunction
definite
determiner
double negative
-er suffix
finite relative clause
future
indefinite
indefinite pronoun
infinitive
-ing suffix
negative pronoun
nominative case
noun
number
object
object pronoun
past simple
past simple
past tense
personal pronoun
plural
possessive pronoun
preposition
present continuous
present participle clause
present perfect
present progressive
present simple
present tense
pronoun
relative
simple past
singular
subject
subject pronoun
subordinate clause

-ly suffix

main clause

modify

N+V+N+V(basic) pattern

negative particle

suffix

superlative

tense

verb

verb form