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## **POTENTIAL STAGNATION AND DECLINE IN RETURN ON INVESTMENT ~IDENTIFYING MEDIUM-TERM ISSUES IN AN INTENSIVE ENGLISH PROGRAM IN A JAPANESE UNIVERSITY~**

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### **Abstract**

*This research reports on five years of results of IELTS (International English Language Testing System) testing taken by first year university students in a Japanese university. The data analyzed in previous papers was from economics majors taking higher level English classes in the academic years of 2013 and 2014, and then in 2016 and 2017 by liberal arts (culture/tourism/English) majors in a new department whose initial focus was English. Lynch (2017) reported that “return on investment (ROI) in education increases when students are given choices in their education”, confirming earlier results found by Lynch & McKeurtan (2011), and Spokes (1989). Furthermore, teaching in a more intensive way (using a quarter system rather than a semester system) was found to give greater ROI. This study goes further and examines a further year of results, finding that stagnation and some decline in results began. This may indicate that the initial high results may have been partly due to special circumstances present in the new department, or that new circumstances have appeared which limited academic gains. Results are reported and discussed. Data and a discussion including class student-teacher ratio is added, giving a new direction to the research. Overall, despite decline in results, it was found that the continuing the intensive program is still worth it in terms of ROI for some years.*

*Findings also included how changing university entrance examination requirements, teacher experience and burnout, and temporary dips in shown ability can all be important points of research.*

## **Keywords**

IELTS, Intensive Program, Return on Investment, Stagnation/Decline in Results, Four-Skills Evaluation

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## **1. Introduction: Stagnation and Decline Noticed in Results over Time**

Lynch (2015a) (2015b) compared groups of students and investigated their performance in IELTS examinations in two academic years (2013 and 2014) for economic majors in a university in Japan. The paper looked at results in terms of return on investment (ROI), with investment being teaching hours (and hired staff/teacher ability), and return being the IELTS examination scores students obtained, which is an international English skills test (IELTS, 2018).

A further paper (Lynch, 2017) included new data with more years of students' IELTS performance, allowing greater insights. A limitation was that the new data was taken from a different department (as the program in the first department was closed). Despite this, some comparisons were able to be made as students were all in their first year in the same university, with both groups not yet fully embarking on their major subject studies until their second or third years. Other characteristics of students were observed to be, or partly assumed to be, similar.

This paper adds an additional data set, that of the 2018 academic year. The 2018 data showed a fall in some scores compared to previous years, and this warranted investigation and research. This decline had been partly part predicted/anticipated and lower student-teacher ratios were put in place in advance to avoid such academic decline. However, this strategy was not successful in all cases, and it was not shown that lower student-teacher numbers resulted in higher academic achievement across the board in terms of English skills in the IELTS examination.

## **2. Background**

The IELTS scores reported in this paper are from the academic years of 2013, 2014, 2016, 2017, and 2018. The students are separated into the "Economics Group", (the former two years) and the "Liberal Arts Group" (the latter three years). The Economics Group decided (self-selected) to enter what was regarded and explained as being a challenging class (referred to as

the Super Class) and have a goal of gaining a high score in IELTS of 5.5 points. The reward (for those few who succeeded) was to be allowed to study abroad as part of the university subsidised international educational program. The students in this group tended to be high performers when compared with their peers in the same department. The Liberal Arts Group were students in a new university department opened in 2016, and were from the 2016, 2017 and 2018 academic years. This department was also advertised/regarded as being challenging (and was more difficult to enter than the other departments). Study abroad was included in the curriculum for all students, but they were told that a high IELTS score would give them an advantage/priority when choosing their destination/country from a list, as each destination offered only a limited number of places. They were told to aim for (but not strictly required to) a score of 6.0 points, a department recommendation/expectation.

Details about these groups, teaching time and frequency etc., are given in Lynch (2017). In brief, the Economics Group had 60 English education classes before IELTS 1 (their first IELTS), and then the same again (another 60), making a total of 120 classes prior to IELTS 2 (their second IELTS examination). On the other hand, the Liberal Arts Group experienced 75 classes of English education before IELTS 1, and 150 classes before IELTS 2, a 25% increase when compared to the Economics Group. The Economics Group took the IELTS at the end of each semester, in August and then again in January of each year. The Liberal Arts Group took the IELTS at the end of each quarter (the first in June, and the second in August). One class is 90 minutes in duration. The Japanese academic year begins in April.

This paper adds data for the 2018 year to the previous research. A big change was that more new teachers were hired, and class numbers (i.e., the number of students per teacher) were reduced due to this. This situation is one of the items of core interest to this and future studies.

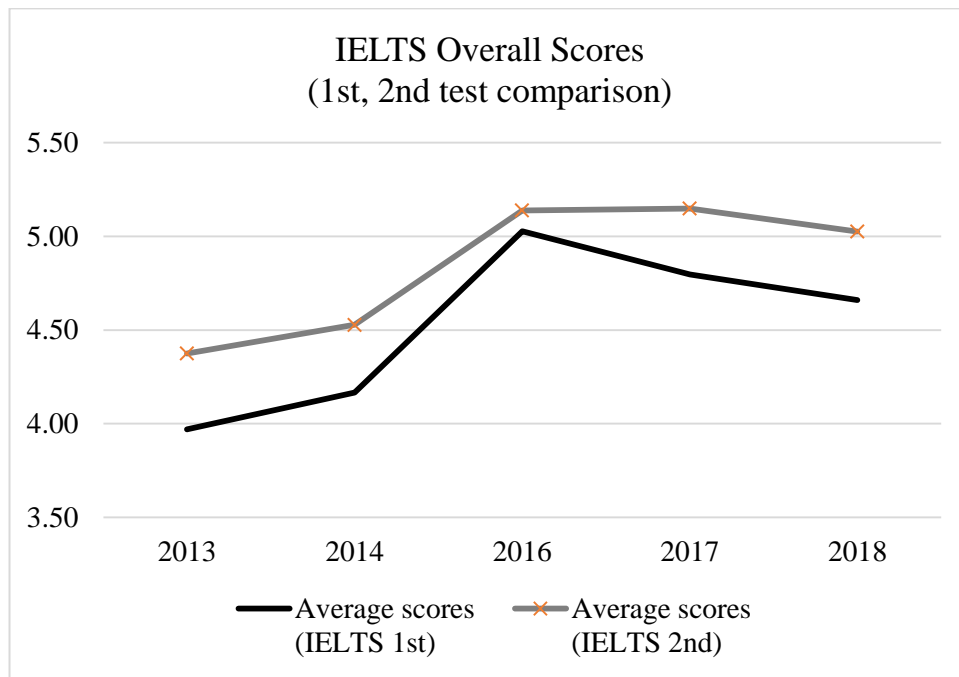
It can be estimated that the Economics Group began their studies at an approximate average level of at least 3.5 points, while the Liberal Arts Group began at an average level of approximately 4.0 IELTS points, although individual students varied and the above figures are estimates by the educators in charge/the department.

### **3. Data Collection, Analysis and Results**

#### **3.1 Data Collection: IELTS Scores**

This is a continuation and expansion of the Lynch (2017) paper. The official IELTS scores were collected, and the data is presented below as graphs/figures (of the mean overall

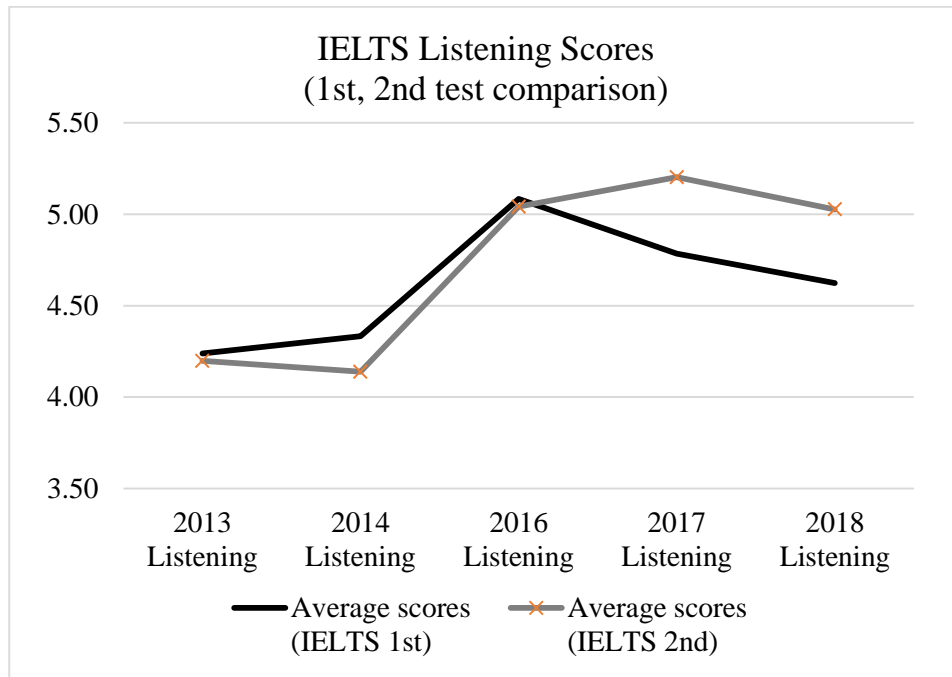
scores as well as those for each skill) and tables are shown below, with other data (variations in ability, SD, and p-values) included. An overall, general pattern can be observed, part of which is predictable based on the number of hours and intensity of tuition. Average scores for 2013 and 2014 were lower than for years 2016, 2017 and 2018, forming two “groups” of data, one from the former dates, and the other from the latter. This in itself shows that changing the method and amount of education provided to students produced clear benefits. Looking at the latter years (2016, 2017 and 2018), the beginning of score stagnation and decline can be observed.



**Figure 1:** Averaged Overall IELTS Scores, 2013, 2014, 2016, 2017, 2018

**Table 1:** Averaged Overall IELTS Scores, 2013, 2014, 2016, 2017, 2018

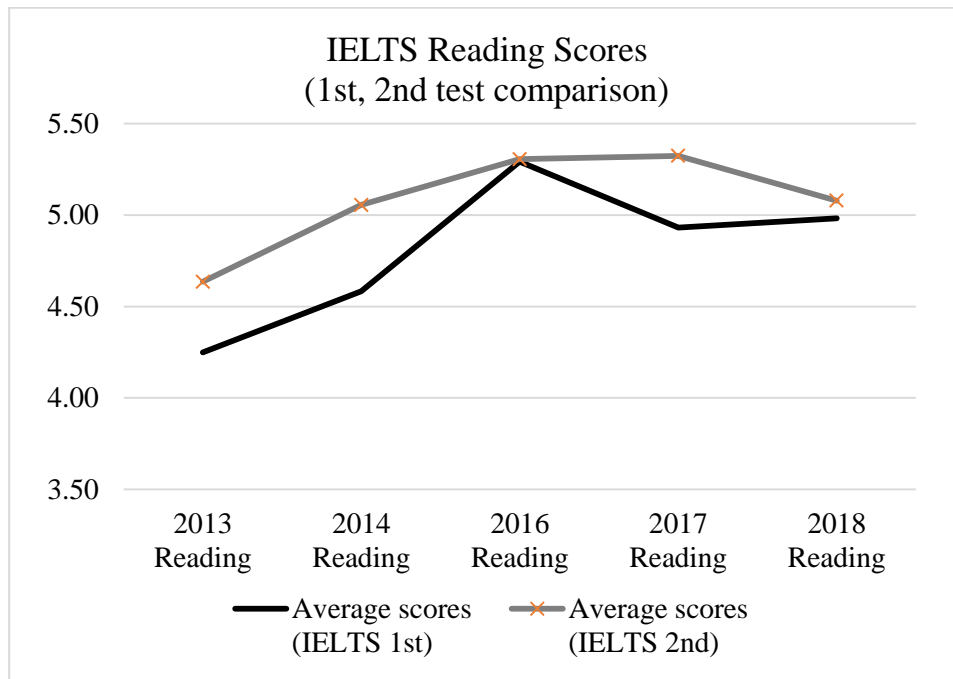
	2013 Overall	2014 Overall	2016 Overall	2017 Overall	2018 Overall
<b>n</b>	48	18	36	37	57
<b>Average scores (IELTS 1st)</b>	3.97	4.17	5.03	4.80	4.65
<b>Stdev (1st)</b>	0.559	0.42	0.366	0.376	0.37
<b>Average scores (IELTS 2nd)</b>	4.38	4.53	5.14	5.15	5.03
<b>Stdev (2nd)</b>	0.467	0.436	0.355	0.349	0.360
<b>p-value</b>	p=0.0002	p=0.0165	p=0.1998	p<0.0001	p<0.0001
<b>Increase</b>	0.41	0.36	0.11	0.35	0.38



**Figure 2:** Averaged Listening IELTS Scores, 2013, 2014, 2016, 2017, 2018

**Table 2:** Averaged Listening IELTS Scores, 2013, 2014, 2016, 2017, 2018

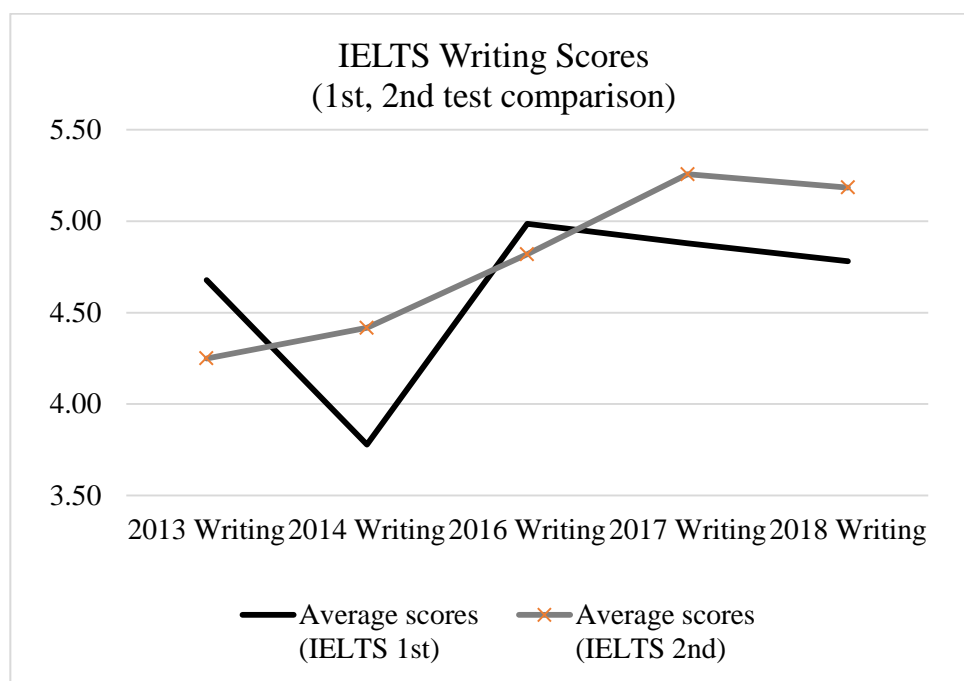
	2013 Listening	2014 Listening	2016 Listening	2017 Listening	2018 Listening
<b>n</b>	48	18	36	37	57
<b>Average scores (IELTS 1st)</b>	4.24	4.33	5.08	4.78	4.62
<b>Stdev (1st)</b>	0.357	0.569	0.500	0.400	0.607
<b>Average scores (IELTS 2nd)</b>	4.20	4.14	5.04	5.20	5.03
<b>Stdev (2nd)</b>	0.572	0.614	0.498	0.492	0.530
<b>p-value</b>	p=0.620	p=0.3424	p=0.7348	p<0.0001	p=0.0001
<b>Increase</b>	-0.04	-0.19	-0.04	0.42	0.40



**Figure 3:** Averaged Reading IELTS Scores, 2013, 2014, 2016, 2017, 2018

**Table 3:** Averaged Reading IELTS Scores, 2013, 2014, 2016, 2017, 2018

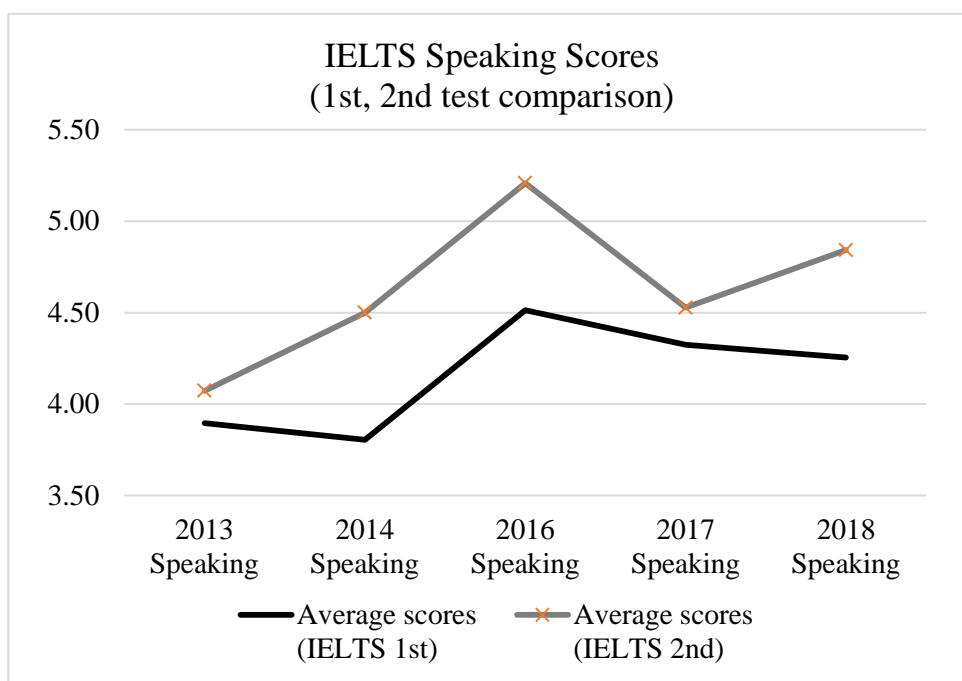
	2013 Reading	2014 Reading	2016 Reading	2017 Reading	2018 Reading
<b>n</b>	48	18	36	37	57
<b>Average scores (IELTS 1st)</b>	4.25	4.58	5.29	4.93	4.98
<b>Stdev (1st)</b>	0.450	0.600	0.498	0.699	0.582
<b>Average scores (IELTS 2nd)</b>	4.64	5.06	5.31	5.32	5.08
<b>Stdev (2nd)</b>	0.434	0.684	0.636	0.543	0.653
<b>p-value</b>	p<0.0001	p=0.0319	p=0.8823	p=0.091	p=0.0009
<b>Increase</b>	0.39	0.47	0.01	0.39	0.10



**Figure 4:** Averaged Writing IELTS Scores, 2013, 2014, 2016, 2017, 2018

**Table 4:** Averaged Writing IELTS Scores, 2013, 2014, 2016, 2017, 2018

	2013 Writing	2014 Writing	2016 Writing	2017 Writing	2018 Writing
<b>n</b>	48	18	36	37	57
<b>Average scores (IELTS 1st)</b>	4.68	3.78	4.99	4.88	4.78
<b>Stdev (1st)</b>	0.455	0.691	0.528	0.477	0.535
<b>Average scores (IELTS 2nd)</b>	4.25	4.42	4.82	5.26	5.18
<b>Stdev (2nd)</b>	0.676	0.575	0.55	0.466	0.361
<b>p-value</b>	p=0.0004	p=0.0048	p=0.1853	p=0.0009	p=0.7074
<b>Increase</b>	-0.43	0.64	-0.17	0.38	0.40



**Figure 5:** Averaged Speaking IELTS Scores, 2013, 2014, 2016, 2017, 2018



**Table 5: Averaged Speaking IELTS Scores, 2013, 2014, 2016, 2017, 2018**

	<b>2013 Speaking</b>	<b>2014 Speaking</b>	<b>2016 Speaking</b>	<b>2017 Speaking</b>	<b>2018 Speaking</b>
<b>n</b>	48	18	36	37	57
<b>Average scores (IELTS 1st)</b>	3.90	3.81	4.51	4.32	4.25
<b>Stdev (1st)</b>	0.765	0.689	0.541	0.615	0.560
<b>Average scores (IELTS 2nd)</b>	4.07	4.50	5.21	4.53	4.84
<b>Stdev (2nd)</b>	0.737	0.728	0.625	0.471	0.649
<b>p-value</b>	p=0.2704	p=0.0062	p<0.0001	p=0.1035	p=0.0362
<b>Increase</b>	0.18	0.69	0.69	0.20	0.59

### 3.2 Data Collection: Student-Teacher Ratios and Results

The number of students assigned per teacher is given in this section, along with related data including the students' estimated beginning ability along with their end results for easier cross-reference. It should be added here that students in the Liberal Arts Group were assigned to different classes using entrance examination data and other information, which was then used to estimate the ability (beginning level) of the students. There are four possible starting classes each with an associated approximate starting ability in terms of IELTS. Those classes are as in Table 6, below:

**Table 6: Liberal Arts Group Placement Classes (2016, 2017, 2018)**

<b>Class</b>	<b>G1</b>	<b>G2</b>	<b>G3</b>	<b>G4</b>
<b>(Est.) Beginning Ability (IELTS)</b>	4	4.5	5	5.5

Further data obtained was collated, and included the number of students in each class, teacher numbers, student-teacher ratios, and student scores for each ability for the 2016, 2017,

and 2018 academic years. This data is presented below in Tables 7, 8 and 9, with the following information:

- There are five taught skill classes (listening, reading, writing, speaking, phrases & expressions)
- S-T means Student-Teacher
- P&E means Phrase and Expression (vocabulary) classes
- G4 numbers are initially 0, as no students were deemed skilled enough to start in those classes.

**Table 7: Liberal Arts Group 2016 Data**

<b>2016</b>	<b>G1</b>	<b>G1 S-T ratio</b>	<b>G2</b>	<b>G2 S-T ratio</b>	<b>G3</b>	<b>G3 S-T ratio</b>	<b>G4</b>
<b>Students 2016 (n=36)</b>	13		21		2		0
<b>Listening Teachers</b>	1	13	1	21	1	2	0
<b>Final Ability (Listening IELTS)</b>	4.7		5.2		5.8		
<b>Reading Teachers</b>	1	13	1	21	1	2	0
<b>Final Ability (Reading IELTS)</b>	4.9		5.5		6.3		
<b>Writing Teachers</b>	1	13	1	21	1	2	0
<b>Final Ability (Writing IELTS)</b>	4.7		4.9		4.8		
<b>Speaking Teachers</b>	1	13	1	21	1	2	0
<b>Final Ability (Speaking IELTS)</b>	4.9		5.3		5.8		
<b>P&amp;E** Teachers</b>	1	13	1	21	1	2	0
<b>Final Ability (Overall IELTS)</b>	4.8		5.23		5.63		

**Table 8: Liberal Arts Group 2017 Data**

<b>2017</b>	<b>G1</b>	<b>G1 S-T ratio</b>	<b>G2</b>	<b>G2 S-T ratio</b>	<b>G3</b>	<b>G3 S-T ratio</b>	<b>G4</b>
<b>Students 2017 (n=37)</b>	23		7		7		0
<b>Listening Teachers</b>	1	23	1	7	1	7	0
<b>Final Ability (Listening IELTS)</b>	5		5.5		5.6		
<b>Reading Teachers</b>	1	23	1	7	1	7	0
<b>Final Ability (Reading IELTS)</b>	5		5.7		5.9		
<b>Writing Teachers</b>	2	11.5	1	7	1	7	0
<b>Final Ability (Writing IELTS)</b>	5.1		5.5		5.5		
<b>Speaking Teachers</b>	1	23	1	7	1	7	0
<b>Final Ability (Speaking IELTS)</b>	4.4		4.5		5.1		
<b>P&amp;E** Teachers</b>	1	23	1	7	1	7	0
<b>Final Ability (Overall IELTS)</b>	4.88		5.3		5.5		

**Table 9: Liberal Arts Group 2018 Data**

<b>2018</b>	<b>G1</b>	<b>G1 S-T ratio</b>	<b>G2</b>	<b>G2 S-T ratio</b>	<b>G3</b>	<b>G3 S-T ratio</b>	<b>G4</b>
<b>Students 2018 (n=57)</b>	24		20		13		0
<b>Listening Teachers</b>	2	12	2	10	1	13	0
<b>Final Ability (Listening IELTS)</b>	4.6		5.1		5.6		
<b>Reading Teachers</b>	2	12	2	10	1	13	0
<b>Final Ability (Reading IELTS)</b>	4.7		5.2		5.7		
<b>Writing Teachers</b>	3	8	3	6.67	1	13	0
<b>Final Ability (Writing IELTS)</b>	5.1		5.3		5.2		
<b>Speaking Teachers</b>	2	12	2	10	1	13	0
<b>Final Ability (Speaking IELTS)</b>	4.5		5.1		5.2		
<b>P&amp;E** Teachers</b>	2	12	2	10	1	13	0
<b>Final Ability (Overall IELTS)</b>	4.75		5.14		5.38		

#### 4. Results and Discussion

Lynch (2017) has already reported on comparisons up to 2017. It was shown that, for the 2013 to 2017 data set, that an increase in teaching hours in an intensive program produces good ROI, and should be continued. It was also seen that, for the 2017 students overall results, their first IELTS examination was lower than the previous year, but they could catch up over the next couple of months when taking part in the same program with the same goals.

What is interesting is the inclusion of the 2018 set of data showing that the above is not always true. It can be seen (from the overall scores) that both the IELTS 1 and IELTS 2 were lower than previous years. In other words, these students performed relatively poorly in both the first and the second IELTS examination, compared to the years before them. Looking at each of the skills, it was noticed that this was true for each skill, except for speaking.

There are some possible reasons for this:

1. This group of students included some who were accepted at a lower entrance level than previous years. (This is a fact, as a handful of students were accepted to the department, with lower scores).
2. (Partly to counter the above) The number of teachers were increased to decrease the teacher to student number ratio. However, it was possible that those teachers were not as highly skilled or experienced as the ones who were there from the beginning. The improved student-teacher ratio did not have a clear impact, meaning that simply throwing resources at the problem did not result in a suitable solution.
3. It could be that some of the teachers who were in the new department from the beginning may showing signs of burnout, lower motivation, or a lack of urgency. On the other hand, it may be that the new teachers added were not skilled or experienced enough to offset the increased number of students. This needs further investigation, and can be done by reporting the results of each teacher's class, rather than the entire group or subgroups.
4. The speaking results increasing in 2018 from 2017 (while the other skills declined) could be explained by students having performed particularly poorly in 2017. Therefore, when comparing 2017 and 2018, it was relatively easy for 2018 students to score more highly than students had done one year previously.

Overall, the scores have been decreasing from 2016 for the first IELTS examination, and from 2017 for the second. The data suggests that changing the numbers of students in a class, i.e., student-teacher ratios, is not an effective way of improving student performance across the

board. In other words, this method results in a poor ROI (return on investment), and deeper investigation is warranted.

## **5. Conclusions and Further Study**

Consideration of the results led to the following conclusions:

1. The highs in terms of students' IELTS test performance were seen in 2016 and 2017, with a decreasing trend noticed to 2018.
2. Improving (decreasing) the student-teacher ratio does not appear to show a good return in investment, and the return can even be a negative one. This (reasons for the poor ROI) needs more investigation.
3. The data seems to give a warning to the university department as it indicates a stagnation and even a decline in results, with no apparent solution being suggested.
4. The background of the students was put forward as a point of further study. However, as this is a comparative study, and the students (students in both groups) are all from the same area, with similar backgrounds, this is not deemed to be a potential productive line of inquiry.

Further study will expand the data set, and look into the performance of individual teachers (in the cases where classes were split with teachers assigned to each), investigate if a decline is common after the initial euphoria and excitement of a new project (department) is launched, and to see if solutions to the results stagnation have been offered elsewhere.

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