Students of Different Subjects Have Different Levels of Extrinsic and Intrinsic Motivation to Learn English: Two Different Groups of EFL Students in Japan

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Abstract

Here is documented an investigation to assess the motivational drivers of a group of Japanese, first-year, dental-university students taking part in compulsory EFL classes and to compare those motivational drivers with an investigation into the motivational drivers of a group of Japanese IT students. There was a clear difference between extrinsic and intrinsic motivational drivers between the two groups. It was discovered that dental students valued English much less for work related reasons (intrinsic) and more for personal reasons (extrinsic), and that overall they had a more favourable attitude to their EFL studies. It was demonstrated that for this group of dental students the importance of English for dentists at work and in research needs to be emphasized in lessons and that students have a favourable attitude to using English and would be happy to have more communication-based exercises in class. This work is the first documented evidence of students of different subjects having different motivations. It is important to the wider teaching community as there are few comparisons of motivation in the literature, and the investigation presented here clearly demonstrates that what motivates one group of students does not necessarily motivate another group, and quite probably, the fingerprint of motivational drivers is quite different for students of different subjects.

Keywords: English as a foreign language, language learning, motivation, Japan

1. Introduction

Motivation is defined by the Oxford English Dictionary as 'a reason or reasons for acting or behaving in a particular way', or 'desire or willingness to do something; enthusiasm', and its study in relation to learning foreign languages has a long history (Deci & Ryan, 1985; Dörnyei, 1998; Gardner, 1985). The importance of motivation in learning a foreign language is widely appreciated, but conceptual frameworks have changed over time. Gardner (1985) split motivational drivers into *instrumental goals*—the practical values of speaking the target language—from *integrative goals*—the desire to learn the language in order to become integrated into the target language culture. In their Self-determination Theory, Deci and Ryan (1985) also saw motivation in a dichotomous scheme, dividing motivational drivers into *intrinsic* type—doing something because it is interesting or enjoyable—and *extrinsic* type—doing something because it leads to a non-language outcome. While these two conceptualisations of motivation to learn a foreign language are still useful, and are used in our investigation, motivation is now seen as a complex dynamic system that is constantly in flux and different for all individuals (Waninge et al., 2014).

Making comparisons enables researchers to gain more insight into how a system works, and it is therefore surprising how few comparison of motivational drivers are present in the literature. One study found that Danish university students were much more motivated to learn English than were Japanese university students (Amburgey, 2015), the blame for this being laid on Japanese students' school experiences. Another comparison of motivations between different groups of language learners found that Canadian school children had more motivation to learn French than did their Scottish counterparts (Diffey et al., 2001). The reason for Canadian school children being more motivated to learn French than Scottish school children was determined to be that Canada was officially a bilingual country, and that the French language was actively promoted, whereas in Scotland it was not. Examining the motivational drivers of a single group with similar expectations and norms

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enables the assessment of consensus or lack of it within the group, however differences within a group would only be detected as ambivalence and would not be possible to explain without intrusive interviews of individual students.

The investigation documented here examined the motivational drivers of students from the same country—therefore presumably having all had similar experiences and influences before university—but who were studying different subjects, thereby allowing us to be more certain that any difference found was not due to socio-cultural factors. We investigated the motivational drivers of our own students, who were first-year university students enrolled on a compulsory EFL course at Osaka Dental University, and compared them with students of a different subject from a different investigation. After comparing groups, it was possible to identify the differences in motivational drivers of the two groups.

2. Methods

Our students were compared with those assessed by Brown (2004), as his data was clear and could be used in our own analysis, and he published the questionnaire he used, allowing us to replicate exactly his investigation and to ensure our data were perfectly comparable. Brown (2004) surveyed 283 IT students, who were taken from mixed compulsory and elective courses, but who did not demonstrate any significant motivational differences between the two. The survey used was a five point Likert scale asking students how much they agreed or disagreed with possible answers to the question 'Why are you studying English?' Additionally, students were also asked how many hours per week they intended to study English outside class.

Brown (2004) used post-questionnaire factor analyses with principle component analysis to demonstrate the relationship between certain questions, splitting 20 of the 40 questions into four groups: personal development, job related, intrinsic interest and pop-culture related. We compared the data in these four categories from the IT students with our students, and we also split the questions into instrumental, interrogative, extrinsic, intrinsic and attitude indicators, thereby allowing us to also investigate these different types of categories. Please see Appendix I for the questions, and the motivational category they were placed in.

125 first-year dental students were asked to complete the questionnaire in lessons on the same day. The Likert scale data was then collated and compared with the data from Brown's (2004) IT students using chi squared tests, and the number of hours spent studying English outside class were compared using a two-way t-test. We tested the null hypotheses that the answers from the two groups were not different for both Brown's (2004) four categories and our own instrumental, interrogative, extrinsic, intrinsic and attitude categories of motivational drivers. We also assessed skew in the answers, looking for consent or ambivalence across each group and differences between groups.

3. Results

As with the results of Brown's (2004) investigation, in our investigation all possible answers to the question 'Why are you studying English?' were endorsed by at least a few students at the highest level, i.e. 'absolutely for this reason', or rejected at the strongest level, i.e. 'not at all for this reason'. The following table presents those possible answers that were most emphatically endorsed and those most vehemently rejected by our dental students.

Table 1. Answers made by dental students with the highest levels of consensus across the group

Most emphatically endorsed by dental students	%	Most vehemently rejected by dental students	%
I admire Japanese like me who can speak English well.	66	The benefits of English are not worth the effort it takes to learn it.	63
A little English is better than no English.	57	If you can't speak fluently and understand everything, then it's better not to try to learn at all.	59
Because it is a required course.	49	If the teacher is excellent, I would not need to make an effort to learn English.	58
I want to be fluent in English.	47	Because English will let me express my unique personality.	52

Summary table of those Likert scale choices most emphatically endorsed and most vehemently rejected by dental students at Osaka Dental University.

Initially we took Brown's (2004) four factors and tested them for a difference between dental students and IT students using chi squared (χ^2) tests, yielding the results presented below. Indicated are the questions for which we could reject with confidence the null hypothesis of there being no difference, and those for which a non-significant (NS) χ^2 was obtained, meaning we could not confidently reject the null hypothesis. Confidence levels were set at P<0.05, meaning that there was a 95% chance of rejecting the null hypothesis again if the investigation was repeated.

Table 2. The results of comparing the original personal development category of questions of Brown (2004)

Personal Development answers	Two way χ²	χ² reject	χ^2 endorse	Interpretation from the data
Degrees of freedom	24	8	8	
Because I want to expand my view.	NS	NS	NS	More dentists endorsed this option, but it was not significant alone.
Because I want to travel to foreign countries.	NS	NS	NS	More dentists endorsed this option, but it was not significant alone.
Because English will let me express my unique personality.	NS	NS	NS	Fewer in both agreed.
Because I want to be bilingual.	NS	NS	NS	Fewer in both agreed.
Because I would like to have a job where I use English.	NS	NS	NS	Fewer in both agreed.
Because I want to be a cultured person.	NS	NS	NS	Fewer in both agreed.
Because I want to have foreign friends.	NS	NS	NS	Fewer in both agreed.
Because I want to be a "global person".	NS	NS	NS	Fewer in both agreed.
Because of internationalization.	NS	NS	NS	Fewer in both agreed.
Test for all questions together	NS	NS	P<0.05	All in all, dental students were more ready to endorse answers than reject them compared to IT students.

It can be seen that there is no significant difference for any single question alone, but that when all data are compared together the results were significantly different for one of the one-way χ^2 , with dentists being more inclined to endorse the given reason for studying English.

Table 3. The results of comparing the original work related category of questions of Brown (2004)

Work Related answers	Two way χ ²	χ² reject	χ^2 endorse	Interpretation from the data
Degrees of freedom	12	4	4	
Because it will be difficult to find a good job in the future without a good knowledge of English.	P<0.05	P<0.05	P<0.05	IT students reached a very pronounced consensus in agreeing, but dental students were much more ambivalent, with slightly more disagreeing.
Because it's useful for finding a job.	P<0.05	P<0.05	P<0.05	IT students reached a very pronounced consensus in agreeing, but dental students were much more ambivalent, with slightly more disagreeing.
Because English will be advantageous in job hunting.	P<0.05	P<0.05	NS	IT students agreed, but dental students did not, and the difference was great.
For IT (computers, and internet etc).	P<0.05	P<0.05	NS	IT students did not reach a consensus, but dental students rejected the reason.
Because it's necessary.	NS	NS	NS	A very strong consensus in the direction of agreeing was met by both groups.
Test for all questions together	P<0.05	P<0.05	P<0.05	English was regarded as very important for work by IT students, whereas dental students were rather ambiguous about the importance of English for work.

As can be seen, there was a great deal of difference in the answers of IT students and dental students, with IT students feeling that English was very important for work; whereas dental students were ambiguous about its importance.

Table 4. The results of comparing the original intrinsic interest category of questions of Brown (2004)

Intrinsic Interest answers	Two way χ ²	χ² reject	χ^2 endorse	Interpretation from the data
Degrees of freedom	6	2	2	
Because I like English.	P<0.05	P<0.05	NS	The proportion of IT students who rejected the answer was much higher than the proportion of dental students who rejected the answer.
Because English is interesting.	P<0.05	NS	P<0.05	The proportion of dental students who endorsed the answer was much higher than the proportion of IT students who endorsed the answer.
Because English is fun.	NS	NS	P<0.05	The number of students rejecting the proposition was much higher for IT students than for dental students.
Test for all questions together	P<0.05	P<0.05	P<0.05	Overall, dental students were much more ready to endorse the possible answers than were IT students.

As can be seen, intrinsic interest in English language is much higher for dental students.

Table 5. The results of comparing the original Popular-culture related category of questions of Brown (2004)

Pop-culture Related	Two way χ ²	χ² reject	χ^2 endorse	Interpretation from the data
Degrees of freedom	6	2	2	
Because it's cool to be able to speak English.	P<0.05	NS	P<0.05	More dentists thought English was cool; IT students however had the opposite opinion.
Because I want to understand English song lyrics.	NS	P<0.05	NS	Dental students rejected this reason, but IT students were ambivalent.
Because I want to watch American movies without subtitles.	NS	NS	NS	Fewer in both agreed.
Test for all questions	NS	NS	P<0.05	Both groups were quite ambivalent for all questions except the two groups meeting opposite consensuses with regard to a single question, 'It's cool to be able to speak English,' which was endorsed by dental students and rejected by IT students.

As can be seen, neither group felt particularly strongly about this category of answers.

Table 6. The results of comparing dental and IT students for possible answers assigned into groups by the authors for this investigation

Type of motivational driver	Two way χ ²	χ² reject	χ^2 endorse	Interpretation from the data
Integrative	P<0.01	P<0.01	P<0.01	Both groups rejected these answers
	(DF=27)	(DF=9)	(DF=9)	on average, but dental students had a more favourable attitude towards English speaking cultures.
Instrumental	P<0.01	P<0.01	P<0.01	IT students valued English skills
	(DF=18)	(DF=6)	(DF=6)	much more for work related reasons; whereas dental students were quite ambiguous.
Extrinsic	P<0.01	P<0.01	P<0.01	IT students valued English skills
	(DF=12)	(DF=4)	(DF=4)	much more for work related reasons; whereas dental students were quite ambiguous
Intrinsic	P< 0.01	P<0.01	P<0.01	Dental students were much more
	(DF=12)	(DF=4)	(DF=4)	likely to find using English language fun and interesting.
Attitude	P<0.01	P<0.01	P<0.01	Dental students had a much more
	(DF=48)	(DF=14)	(DF=14)	favourable attitude towards studying English language.

A comparison of dental and IT students after grouping Brown's (2004) questions into those assessing instrumental, interrogative, extrinsic and intrinsic indicators (see Appendix I for the particular questions) with the P value set at 0.01. Dental students were 3.8 times more favourable about intrinsic motivational drivers and 2.8 times more ready to agree with factors associated with attitude.

To test for skew in the responses for a single reason why students were studying English, i.e. to detect a consensus amongst students, responses were converted to percentages, and the percentage rejecting a particular

answer was subtracted from the percentage endorsing the same answer: a negative result therefore indicated a consensus to reject, and vice versa.

Table 7. Reasons for studying English most strongly endorsed and most strongly rejected for both groups

	Steepest skew:	Steepest skew:	
	Most strongly endorsed	Most strongly rejected	
Integrative	Because I want to be fluent in English. (IT students = 43%; dental students = 32%)	Because I would like to have a job where I use English. (IT students = 41%; dental students = 32%)	
Instrumental	Because it is necessary. (IT students = 25%; dental students = 29%)	Because I would like to have a job where I use English. (IT students = 41%; dental students = 37%)	
Extrinsic	Because it is necessary. (IT students = 25%; dental students = 29%)	For IT (computers, and internet etc) (IT students = 13%; dental students = 33%)	
Intrinsic	Because it's cool to be able to speak English. (IT students = 7%; dental students = 20%)	I want to be bilingual. (IT students = 33%; dental students = 26%)	
Attitude English doesn't interest me. (dental students = 12%)		If you can't speak fluently and understar everything, then it's better not to try to learn at a	
	Speaking English in public embarrass me. (IT	(dental students = 41%)	
	students = 26%)	If the teacher is excellent, I would not need to make an effort to learn English. (IT students = 40%)	

This table highlights some of the major similarities and differences between dental and IT students in their reasons for studying English, as quite often the two groups reached the same consensus on some individual questions. Presumably, 'because it's necessary' is considered by students to mean that they are studying English because it is compulsory.

To detect a difference in the direction of skew between groups, i.e. opposing consensuses between groups, the former figure (skew) for dental students was subtracted from the corresponding figure for IT students, squared, then square-rooted to remove any negative or plus identity, and the largest number indicated the greatest disagreement. Ambivalence was detected as the answers that had the least amount of skew.

Table 8. Reasons for studying English with the greatest degree of polarity between the two groups, and those reasons with the least amount of consensus in each group

	Most extreme disagreement between groups	Most ambivalent answers from IT students	Most ambivalent answers from Dental students
Integrative	Because I like English. (dental students are ambivalent, whereas IT students reject this proposition very strongly)	Because I want to understand English song lyrics.	Because I like English.
Instrumental	For IT (computers, and internet etc) (dental students disagree strongly, IT students are ambivalent)	For IT (computers, and internet etc)	Because English will be advantageous in job hunting.
Extrinsic	For IT (computers, and internet etc) (dental students disagree strongly, IT students are ambivalent)	For IT (computers, and internet etc)	Because it will be difficult to find a good job in the future without a good knowledge of English.
Intrinsic	Because I like English. (dental	Because it's cool to be able	Because I like English.

	students are ambivalent, whereas IT students reject this proposition very strongly)	to speak English.		
Attitude	Speaking English in public embarrass me. = English is too difficult for me to learn. (dental students disagree strongly, IT students agreed strongly)		is	N/A Dental students were not ambivalent about any of the answers.

The answers given presented in the above table are very revealing concerning the attitudes attached to studying English by both groups. There are however, a great many conundrums: all in all, dental students had a better overall attitude, but as a group reached no consensus on whether they liked English or not; IT students reached no consensus as to whether or not English was useful for IT related matters. Similarly, dental students were ambivalent about whether or not they liked English, but would however study it even if it was not compulsory.

Table 9. Number of hours per week students intended to spend studying English out of lessons

	IT students	Dental students
Mean (hours)	Three hours, 30 minutes	Two hours, 10 minutes
SD (hours)	3.61	0.35
Two tailed t value (df 406)	3.83 P<0.0001	

The results presented in Table 9 also reveal much about the attitudes of both groups when combined with the results presented in Tables 7 & 8, with the number of hours on average members of each group intend to spend studying English outside class are very different. Furthermore, IT students, who do not particularly like English but deem it to be of great importance for their future careers, intend to spend almost half as much time again out of class studying English than dental students, who do not think it will be valuable for their future careers, but do not reject the proposition that they like English.

4. Discussion

This investigation sought to compare the motivational drivers of two different groups of university students in Japan: a group of IT students and a group of dental students. The results were interesting because the motivational drivers of the two groups were very different, although there were also some interesting similarities. The dental students assessed in this investigation, as a group, valued English language skills much less than IT students for work related reasons, but enjoyed learning English for its own sake more than IT students: dental students had higher levels of intrinsic motivational drivers; whereas IT students had greater levels of extrinsic motivational drivers.

Of great interest to educators is the fact that IT students had higher extrinsic motivation, but less interest, less confidence and a poorer attitude to the study of English. Where 'attitude' lies in the intrinsic-extrinsic scale of motivational drivers is quite hard to determine (Liu, 2014, Oroujlou & Vahedi, 2011, Ushida, 2005). A positive attitude might be part of integrative goals, but when Gardner (1985) was working on this topic he was teaching French in Canada. In the early decades of the 21st Century, since the pervasion of IT and the internet into every aspect of daily life, English is now a global language unconnected with its native speakers and cultures (Wadell & Shandor, 2012), so has little explanatory value in this situation. Furthermore, the actual existence of integrative motivation has been called into question since Gardner (1985) hypothesised about it (Chen et al., 2005, Pae, 2008, Warden & Lin, 2000, Wong, 2012). It is therefore highly unlikely that the positive attitude of dental students is due to their desire to integrate with English speaking peoples and their cultures. In fact, both groups showed an ambivalence towards integrative reasons for learning English.

It is very difficult to explain why dental students had a positive attitude to studying English, but did not have an objective basis for doing so, while the converse is true for IT students, who do have an objective basis for studying English but a much less positive attitude. This discovery highlights the importance of comparing two groups of students, and the inverse relationship between a positive attitude and feeling pressure from extrinsic motivational factors warrants further research.

Many researchers have failed to impact significantly on the proficiency progression after attempts to increasing the motivation of foreign language students (McEowna & Takeuchib, 2010, 2014, Thurman, 2013). Additionally, it has been shown that extrinsic motivational drivers are much more effective than intrinsic motivational drivers at increasing student participation (Chen et al., 2005, Pae 2008, Warden & Lin, 2000, Wong, 2012), which is needed in lessons to acquire any benefit from being present. One is therefore forced to ask oneself: is there any point studying further the role of motivation in acquiring a foreign language in a classroom environment? It might well be possible that language teachers would be better spending time developing engaging materials for lessons that help students to increase their communication proficiency than worry about their motivation levels. In fact, it is entirely possible that explicitly stating reasons why students should be motivated about something, rather than allowing them to find their own reasons, has the opposite effect to that which is desired.

Studies of motivation are very important for teachers because they enable teachers to both shape students' motivational drivers and to tune lesson contents to appeal to students. This investigation has demonstrated that for this group of dental students the importance of English for dentists at work and in research needs to be emphasized in lessons, and that students have a favourable attitude to using English, meaning students would be happy to have more communication-based exercises in class. Furthermore, this work demonstrates that what motivates one group of students does not necessarily motivate another group, and quite probably, the fingerprint of motivational drivers is quite different for students of different subjects.

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Appendix I

Answers to the question, 'Why are you studying English?'

Integrative

Because it's cool to be able to speak English.

Because I like English.

Because I would like to have a job where I use English.

Because English is fun.

Because English is interesting.

Because I want to watch American movies without subtitles.

Because I want to have foreign friends.

Because I want to understand English song lyrics.

It is very important to me to be able to speak and understand English well.

I want to be fluent in English.

Instrumental

Because it will be difficult to find a good job in the future without a good knowledge of English.

Because I would like to have a job where I use English.

Because English will be advantageous in job hunting.

Because it's necessary.

Because it's useful for finding a job.

For IT(computers, and internet etc)

Because of internationalization.

Extrinsic

Because it will be difficult to find a good job in the future without a good knowledge of English.

Because English will be advantageous in job hunting.

Because it's necessary.

Because it's useful for finding a job.

For IT(computers, and internet etc)

Intrinsic

Because it's cool to be able to speak English.

Because I like English.

Because English is fun.

Because English is interesting.

Because I want to be bilingual.

Attitude

English doesn't interest me.

If English weren't a required course I wouldn't study it.

If English weren't necessary for job hunting, I wouldn't study it.

If English weren't a required course I wouldn't study it.

English is too difficult for me to learn.

If English weren't necessary for job hunting, I wouldn't study it.

English doesn't interest me.

English is too difficult for me to learn.

The benefits of English are not worth the effort it takes to learn it.

Japanese who speak English well were probably born with genes that gave them a gift for learning languages easily.

If you can't speak fluently and understand everything, then it's better not to try to learn at all.

If the teacher is excellent, I would not need to make an effort to learn English.

Speaking with other Japanese people in English won't help me get better at English.

Speaking English in public embarrasses me.

Learning English is painful.

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