

# **EFL Motivation and Japanese Engineering Students: A Survey of Relevant Research**

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## **日本のエンジニア系学生と EFL モチベーション： 関連研究の調査**

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**Abstract** : Language learning motivation has been the subject of growing interest and inquiry over the last several decades. As the field has expanded and grown, research into specific subpopulations of learners has contributed to the development of new models and approaches. This paper surveys motivational research findings, both within Japan and abroad, in order to ascertain possible directions for future motivational research into Japanese engineering students learning English as a foreign language.

**Keywords** : motivation, language learning, EFL/ESP

### **1. Introduction**

Despite being a somewhat elusive concept, motivation is an ongoing concern for teachers. A growing recognition of the significance of motivation in language learning and acquisition has elevated its importance in recent decades, and this interest has resulted in the evolution and expansion of language learning motivation approaches and models. A corollary of this interest has been research into language learning motivation in an expanding range of national settings. This paper will begin by examining the development of language learning motivation research, and then survey findings from motivational research conducted in one such national context, Japan. This discussion will culminate with an examination of a specific sub-population of Japanese language learners, higher education engineering students, and the particular factors and considerations that might inform future research into their specific motivational characteristics.

## **2. The Development of Language Learning Motivational Theory**

Language learning motivational theory has evolved significantly over the last several decades. However, as the field has expanded, it has jettisoned little in terms of prior research and findings, choosing not to discard, but rather subsume previous work. The likely reason for this is the complex nature of motivation, and the fact that no single approach has been able to adequately describe all facets of the subject. Due to the breadth of the subject matter, early approaches were narrower in focus, providing specific insights into discreet areas of the field, which viewed in tandem with other findings, helped provide a more complete view of motivation in language learning. Recently, more comprehensive models incorporating a broad range of previous approaches have emerged. The following is a brief overview of the development of L2 motivational research as it has expanded and evolved over the past several decades.

The works of Richard Gardner and associate Wallace Lambert (Gardner and Lambert, 1959, 1972; Gardner, 1985) established and inspired the first wave of second language (L2) motivational research through the introduction of approaches and research instruments that are still widely used today. Their research established a social-psychological approach to L2 motivation through which it was conceptualized largely in terms of attitudes towards the L2 community. Their studies identified integrative, “reflecting a sincere personal interest in the people and culture represented by the other group”, and instrumental, “reflecting the practical value and advantage of learning a new language”, motivational orientations (Gardner and Lambert, 1972 p. 132). This dichotomy has subsequently been widely examined in the literature. While this approach and its instruments (specifically, the Attitudes/Motivation Test Battery) long defined the field, the perceived narrowness of its scope impelled some to seek out more pragmatic approaches with greater classroom applicability.

As language learning motivational research expanded into new contexts, limitations of the social-psychological approach became apparent. Ely (1986), in his examination of freshman Spanish students in the US, discovered a third motivational cluster (“requirement”) beyond the Gardnerian integrative/instrumental dichotomy. Skehan (1990), in examining the role of motivation on Individual Differences (ID), found the instrumental/integrative distinction to be of limited value in describing pedagogical interventions that might influence motivation. Dornyei’s (1990) study of adult Hungarian English learners revealed the distinctness of Foreign Language Learning (FLL), as opposed to ESL, contexts. Specifically, he found that in FLL instrumentality can in fact be a stronger orientation than integrativeness for learners at particular proficiency levels. These perspectives set the tone for Crookes and Schmidt’s (1991) seminal article calling for a shift of the language learning motivational research paradigm towards approaches used in psychology and education. They particularly stressed the need to address the previously neglected distinction between cognition, motivation and affect. Oxford and Shearin (1994) similarly encouraged expansion of the integrative/instrumental construct through the integration

of general, industrial, educational, and cognitive developmental psychology. With the emergence of psychological approaches, the intrinsic/extrinsic motivational dichotomy central to Deci and Ryan's (1985) self-determination theory emerged as an important new construct in language learning motivational research. Dornyei's (1994) three-tiered motivational framework integrated many of these new ideas into a single model. The framework, consisting of Language Level (comprising integrative and instrumental subsystems), Learner Level (consisting of learner needs and self-confidence), and Learning Situation Level (consisting of course-, teacher-, and group-specific motivational components), presents a more pragmatic, eclectic, and comprehensive approach for bridging theory with practice.

Accompanying the theoretical expansion of language learning motivational research came an increased appreciation of the dynamic nature of motivation. Particularly as earlier social-psychological studies had largely been cross-sectional in nature, and/or were focused on fixed goals, motivation had been depicted as a static phenomenon. Several authors (Crookes, 1991; Oxford, 1994; Skehan, 1990) identified this as a major shortcoming of existing social-psychological approaches. Gardner and MacIntyre (1992, 1993) responded with a revised version of the Gardnerian model which described an ongoing flux as motivation both stimulates, and is stimulated by, language learning achievement. Gardner and associates (2004) later added further insight into the changing state of motivation in their examination of the effects of language instruction on attitudes, motivation and anxiety over time. Ushioda's (1996) pioneering qualitative longitudinal research provided greater depth of insight into a more expansive range of patterns of motivational change derived from factors both within, and outside, the L2 context. Williams and Burden (1997) also helped expand temporal considerations in language learning motivation through their social constructivist framework. Their distinction between initiating motivation and sustaining motivation, as parts of a tripartite model interacting within the larger social context, provides a more realistic rendering of the dynamic, interactive, and ongoing nature of learner motivation. Dornyei and Otto's (1998) "Process Model of L2 Motivation" integrates many of these ideas into a single framework pragmatically focused on uncovering specific means for motivating learners. In this model the authors set out to provide a comprehensive (vs. reductionist) view of motivational behavior, illustrate motivational influences on action (execution of goal-directed behavior), and demonstrate the dynamic/temporal nature of motivation. Their model consists of two dimensions, an Action Sequence (preactional, actional, and postactionable phases) and Motivational Influences (consisting of five tables of motivational types). Due to its comprehensive nature, and particularly its recognition of temporal aspects of motivation, this model provides practitioners direction in applying interventions appropriate to learners' changing motivation.

### **3. Language Learning Motivation in Japanese Tertiary EFL Students**

Research into Japanese language learning motivation has produced varying results in terms of instrumental, integrative, intrinsic and extrinsic motivational orientations, and the effect these have on language learning. A dominant instrumental orientation has been demonstrated in a number of studies (Burden, 2002; LoCastro, 2001; Matsuda, 2004), whereas integrativeness has been found to be stronger in Japanese EAP (English for Academic Purposes) students (Brown, Robson and Rosenkjar, 2001). An integrative orientation was further found to correlate with both motivation and “Willingness to Communicate” in Japanese EFL learners (Yashima, 2002). Combined intrinsic-integrative, intrinsic-instrumental, and instrumental-integrative orientations have been observed by Chihara and Oller (1978), Kimura et al. (2001) and Warrington and Jeffery (2005) respectively. While Hayashi (2005) found internalized intrinsic motivation as critical to successful language learning, Berwick (1989) found little connection between motivation of any type and English proficiency (Berwick and Ross, 1989). Other studies have revealed a lack of both integrative (LoCastro, 2001) and instrumental orientations in Japanese learners (O'Donnell, 2003; Sawaki, 1997). While these varied findings appear inconsistent, their results reflect the complexity of examining motivation in language learning. None of the authors above claim their results apply to all tertiary Japanese learners, and as such, are best interpreted as they apply to the specific sample population examined.

Motivational factors offering more unified insight into the motivational profile of Japanese tertiary English learners are those that emerge from past language learning experience. Anxiety resulting from past language learning trauma, specifically that occurring in junior and senior high school, is a recurring theme throughout the literature. Falout and Maruyama (2004) identify grammar and vocabulary-based washback pedagogies endured in prior studies as a source of university student demotivation. In their study, students claimed they “learned more about autocracy, sarcasm, and nitpicking” (p. 8) than English in the language classroom. This “pedagogy of humiliation” was cited as an ongoing source of student demotivation. These past experiences appear to be carried forward into tertiary studies where low self-esteem, and negative self-appraisal of English proficiency and aptitude are frequently cited characteristics of Japanese tertiary English learners (Warrington and Jeffery, 2005; Burden, 2002; Matsuda, 2004; O'Donnell, 2003; Yamashiro, 2001).

Anxiety and demotivation in English language learning have also been attributed to socio-cultural factors. Brown (2004) observed that Japanese modesty norms inhibited learners from exhibiting proficiency in English. Additionally, Brown and others (O'Donnell, 2003) have observed that the fear of making mistakes, particularly in front of others, also inhibits Japanese students from actively engaging in English learning. McVeigh's (2001) examination of Japanese university student apathy lays blame at the system level. According to his observations, Japan's “educatio-examination system” results in excessive self-monitoring, debilitating inhibition, and

eventual apathy towards a system students perceive as being without value. Burden (2002), in examining Japanese students' attitudes towards learning English, similarly noted that a contributing factor to university students' "fossilized learned helplessness" was their perception that the education system had little value.

While the majority of research into Japanese students' English language learning motivation has been cross-sectional in nature, longitudinal studies have provided important insights into the dynamic and changing nature of motivation in this particular set of learners. These longitudinal studies correlate in many ways with the attributional findings related to past language learning experiences discussed above. Berwick and Ross (1989) observed a motivational peak in the third year of high school (due to the instrumental necessity for English in passing university entrance tests), followed by low overall English learning motivational intensity in university. Matsuda (2004) tracked longitudinal motivational change in Japanese university students over their first year of study by means of learner diaries. Like Burden (2001), Matsuda found that students enter into university with a low self-estimation of their English ability. The diaries revealed an elevation in motivational orientation prior to tests, or when students had the opportunity to interact with foreigners. Hayashi (2005) examined longer-term fluctuations in Japanese students' English learning motivation through the administration of a retrospective questionnaire. The study revealed four motivational patterns that occur in learners over time (high-high, low-low, high-low, low-high). Analyzing the results from a self-determination theory perspective, Hayashi concludes that language learning success can only be achieved if the learner acknowledges the need to make "purposeful efforts" towards learning, and when intrinsic motivation becomes internalized. In a recent investigation, Sawyer (2007) administered a locally-developed instrument, "My English Learning Motivational History" (consisting of both Likert Scale and open-ended questions), to examine motivational fluctuations in high proficiency English learners over time. Examining the period from junior high school through university, Sawyer found motivation fluctuates over time, with the lowest levels of motivation exhibited in university students. He also found that negative motivational fluctuations can lead to permanent demotivation, as suggested in Falout and Maruyama (2004) and Warrington and Jeffery (2005).

#### **4. Motivational Characteristics of Japanese Engineering EFL Students**

There has been little published which directly examines the motivational profile of Japanese engineering students learning English. Of the Japanese studies examined above, only two explicitly discuss motivation in engineering majors. One is Kimura and associates' (2001) comparative study of motivational components of Japanese EFL learners across various learning milieu (junior high school, high school, university, and language schools). Results of their study indicated that engineering students were one of only two groups exhibiting an

extrinsic-instrumental motive (the other group was junior high school students). They stated that “engineering majors apparently tend to study English for more extrinsic and pragmatic reasons than those who feel they need English for their future careers” (p.55). The study also shed light on engineering students’ perception of the teacher’s role in language learning. According to the study, engineering students perceived teachers as not having a positive influence on their language learning. This perception stood in contrast to other groups which viewed language teachers’ influence positively, particularly those interested in English or requiring it for future careers. Additionally, Falout and Maruyama (2004) contribute important insights into the motivational characteristics of this group of learners with their examination of English language learning demotivation in Japanese engineering students. Their findings indicated that both high proficiency (HP) and low proficiency (LP) students experienced demotivation in regard to English learning, although the factors leading to these attitudes, and their manifestation in learners, varied. LP students indicated demotivation in five areas: self-confidence, attitude toward the L2 itself, courses, teachers, and attitudes of group members. LP learner demotivation was linked to past learning experiences in junior high school, and was characterized by an ongoing and increasing dislike for studying the language. LP learners displayed more internalized attribution for demotivation, whereas HP learners exhibited externalized attribution. Crossover factors for both groups include negative appraisal of the “humiliating” pedagogies and entrance test-based content endured in prior language study. One positive factor identified by both groups was their attitude toward the L2 community.

## **5. Directions for Future Research**

Motivation is a complex construct, and the ongoing development and evolution of language learning motivational models illustrates the complexity inherent in conducting research within this area. The move towards more comprehensive models which combine social-psychological, psychological, and educational approaches seemingly provides the most promising avenue for thorough investigation of specific learning populations. Due to the dearth of research findings concerning motivation in Japanese engineering EFL students, researchers would be advised to first construct a motivational profile utilizing a comprehensive approach. This would be valuable in corroborating the findings of Kimura et al. (2001) and Falout and Maruyama (2004), and in informing other areas which require examination. Published self-report instruments such as those created by Clement and Kruidenier (1983) Gardner (1986), Horwitz, Horwitz and Cope (1991), Dornyei (1990), and Wen (1997) could be adapted for this purpose and administered longitudinally to assess changes in EFL learning motivation over the duration of engineering programs. Qualitative studies with small groups of learners, such as those pioneered by Ushioda (1996, 2001), would provide further depth and perspectives that might not be provided in large-scale quantitative samples. As Japanese learners appear to enter university

with affective issues resulting in inhibition, demotivation, and apathy, it is important to assess whether these characteristics are permanent, or transitory. This knowledge would be valuable for curriculum designers and teachers in terms of planning programs and instruction aligned with students' motivational orientations.

This brings up the issue of how particular curricular or pedagogical interventions might impact the motivational orientation of this particular group of learners. The extrinsic-instrumental EFL orientation identified in engineering students by Kimura, Nakamura and Okumura (2001) provides a possible starting perspective from which experimental research could be conducted. As this group of learners appears to place little intrinsic or integrative value on English, information on the effects of variations in curricular content and pedagogy on motivational intensity would be extremely valuable to educators. Given the students' pragmatic motivational orientations towards English, manipulation of curricular content, between, for example, general English and technical English, represents a potentially fruitful avenue for exploration in terms of maximizing extrinsic and instrumental tendencies. Further, as English teachers have been viewed negatively by Japanese engineering students (Kimura et al., 2001; Falout and Maruyama 2004), the effects of changes in methodology or pedagogical approach on these negative attitudes, and their influence on motivation, presents another promising area for research.

## **6. Conclusion**

Language learning motivational theory has developed to the point where researchers have at their disposal a wide range of models and instruments, as well as an extensive collection of published research, to draw upon in examining motivational issues. Despite the vast amount of work done, a multitude of contexts remain yet unexplored. As motivational findings do not necessarily transfer across contexts, each of these contexts, and the sub-groups of learners therein, require explicit examination. This paper identified Japanese engineering EFL students as one such group. While past language learning trauma, and ongoing demotivation, have been identified in this set of learners, more comprehensive and corroborative research needs to be done to establish their motivational profile. This profile is best attained through a combination of qualitative, quantitative, and longitudinal instruments. Further, experimental studies examining the effects of curricular and pedagogical interventions are required to provide pragmatic guidance to educators looking for specific ways to motivate their students.

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