論文内容の要旨

Our dissertation is composed of six chapters. In the first chapter, we describe our research questions, purposes, and the organization of the dissertation. Before presenting our research questions and purposes, we discuss our professional experiences that have led us to these questions and purposes. We started teaching Italian as a secondary and optional subject at a Japanese university during the 2007-08 academic year, and a big difficulty that we encountered was how to motivate students. What we had already done successfully with adult students in other contexts seemed to not work with university students. The boredom students were experiencing also led them to fill class time with activities not related to the lessons.

After a period of permissiveness, due in part to our inexperience and in part to not knowing whether our job also consisted of solving discipline problems and managing the class, we switched to an authoritarian teaching style. Unfortunately, this change only made things worse. Then, we began to study how to deal with this kind of problem. Although we already had a language teaching background, we realized that no one had ever taught us how to manage classes like these. We began our personal research, and our lessons improved a little. However, our big turning point was when we attended a teacher training course at the prestigious Dilit International House in Rome, Italy. The course was very practical and innovative, with great attention to detail. We learned how to involve students actively and how to manage a class. This approach was just what we needed, and our lessons improved. Now, thanks to the research that we have carried out in order to write our dissertation, we also have a scientific explanation about why what worked with adult students did not work with university students. The problems we encountered were not just a matter of low levels motivation on the part of the students, but also because their low motivation

was combined with low self-control skills because of the education those students had received, as well as neurobiological factors which together led to their immature prefrontal cortexes.

Although what we learned at Dilit International House was very helpful, we did not eliminate all problems of motivation, and our students are not always fully engaged and making great progress. These problems may never be definitively resolved, due to differences among students and constant changes in society. However, we believe that a teacher should constantly look for new ways to get the best performance possible from their students, making appropriate adjustments based on the students that they have in class.

In order to achieve this goal, understanding both how learning takes place and who our students are is necessary, by analyzing not only the characteristics of the society in which they grew up and live, including their daily lives as university students, but also their neurobiological, behavioral, and cognitive peculiarities. Analyzing the theoretical assumptions on which our teaching method is based is also necessary in order to understand what is already working, as well as the results actually achieved by the students who studied with this method, and then to find ways to make our lessons even more effective than they already are.

In our dissertation, chapter 2 focuses on how students learn effectively. First, the role of executive functions (EFs) in learning is described. EFs are cognitive functions that involve skills like attention, self-control, planning, etc., and are thought to be situated primarily in the prefrontal cortex. If students cannot focus on a lesson, are late, are selfish, etc., such behavior could be because they lack in EFs. Researchers have determined that in order to learn properly, attention, active engagement, error feedback, and learning consolidation are fundamental. However, these factors could be negatively affected by poor EFs, and therefore teachers should take EFs into account, not only to improve student learning but also to train future citizens. Teachers cannot just focus on the subjects being taught; they also need to create suitable learning environments, mainly through proper class management, so that students can give their best performance. Without these kinds of environment, learning cannot take place.

In our opinion, the main characteristic of a good teacher is that they do what is good for students even though it may be not what students want. Many students prefer to remain in their comfort zones, and if a teacher asks them to go out from that comfort zone, the students may evaluate that teacher poorly. Therefore, teachers should use a teaching style that functions as a *prefrontal cortex trainer*. Among the four teaching styles described in our dissertation, the ideal way to achieve positive results comes from using an authoritative teaching style, which is the style used by Dilit International House. In order to further improve student engagement, and thus learning, we also suggest that teachers should focus on student interests, needs and feelings, in line with a humanistic approach. We discuss the potential benefits of matching lesson content and methodology to student learning styles and intelligence preferences. As current research does not find any solid evidence that matching teaching methodology with student learning styles and preferred intelligences is beneficial, we suggest doing so only if this does not contradict the beliefs of the teacher on how languages are learned, and therefore what kinds of activities should be done and how. Beyond this, widening one's own learning styles and intelligence preferences is what learning is about.

In chapter 3, we discuss our teaching context. First, we describe Japanese society based on some statistics. We suspect that young people today are less mature than young people were in the past, as they have fewer chances to use their prefrontal cortex because of the reduced time they spend with their parents, as well as inadequate support from teachers who may be

unwilling to change their methodologies, which are often anchored in tradition. In addition, this lack of maturity is also due to a change in the educational style of parents. Use of a permissive parenting style is widespread, and schools and universities are not considered to be places where someone can learn something useful, as one can easily find any information on the Internet. Schools and universities are instead seen as places that issue degrees, which are important to get good jobs (that are often unrelated to one's university's major) and high wages. Teachers are not considered valuable anymore, and authoritative teachers are seen as obstacles between students and their future jobs. We believe that these views on the uselessness of education in a world where information is within easy reach is widespread. These views can be shared as, to our knowledge, lessons are often based on the transmission of notions. Instead, students should learn to think critically in order to be able to face challenges that they will meet in the future but that they cannot imagine in the present. This means that teachers should aim to give students the opportunity to use their prefrontal cortexes, where critical thinking is thought to occur, through active engagement and an authoritative style.

In chapter 3, we also describe the Italian curriculum at our university and how our Italian conversation courses are positioned within the curriculum. Then, we describe the teaching method we use in the conversation courses and the main four activities we use: *authentic listening*, *language puzzle*, *oral free production,* and *conversation rebuilding*. In particular, we highlight the active role of students within this method. Students are seen as researchers, which is in line with the definition of active engagement presented in chapter 2. We explain the main principles of the method also by referring to the two main scholars on which it is based: interlanguage theory from Corder (1967/1981; 1976/1981; 1978), and the importance of using authentic materials from Wilkins (1974; 1976). In the methodology of Dilit International House, pair work is the most used modality of interaction, and we highlight what we think are the main advantages of this modality, as well as the reasons we think that random pairing is preferred in most cases.

Based on the view of Corder (1967/1981; 1976/1981; 1978), we also point out that a syllabus should be flexible in order to meet student needs and interests, in line with the discussion in chapter 2. A syllabus created *a priori*, before meeting the students and with no possibility of being adapted, is doomed to failure.

Finally in chapter 3, we summarize how we apply in the principles of the authoritative style described in chapter 2 in our classes. We also describe the evaluation system and the oral final exam that we use, highlighting some of the critical issues we have encountered over the years.

In chapter 4, we describe our research based on the oral final exams of eleven students, recorded over two years (four recordings for each student, one for each semester). This was our first attempt to test the effects of the method we have been using on our students through longitudinal quantitative research. However, as the aims of the oral final exam and the aims of our research were difficult to match, we ended up having a small sample of data that are difficult to compare. Unfortunately, we could not ask students to be interviewed four times exclusively for research purposes, as this would have involved an additional commitment outside of the lessons. Most of the students were busy with other commitments, as explained using the statistics in chapter 3.

The results of our research showed a progressive increase in student fluency, which would indicate the effectiveness of our method at least for this parameter. Regarding morphology, student scores decreased on the third exam, followed by an increase on the fourth exam. More than a just problem related to the effectiveness of our method, this result seems to be in line

with what researchers who support the theory of developmental sequences believe: what looks like a decrease is actually an improvement. Students are restructuring the language they have acquired in order to improve it qualitatively. For example, if in developmental stage 1 students use some expressions as formulaic chunks, they may not make errors regarding the words contained in the chunks, but in stage 2, if they try to use the words from those chunks in an original way, doing so can lead to errors.

The results for vocabulary extension were similar to those of morphology, although in a less marked way. We hypothesize that after students had accumulated a large number of words, at a certain point they forgot those words that were not useful for their purposes in order to make room in their brains for new information.

The results for response time were doubtful, because response time can be affected by several factors, including an improvement of working memory through continuous practice, which is what we aimed to measure. One of these factors is an improvement in pragmatic expectancy grammar, meaning that students were able to predict the content of a question before it had been completely uttered. This would allow students to begin to answer even before they had heard the end of the question.

We also suspect that student results may have been affected by the relationship between the topic about which they were speaking and their performance. Topics that asked students to recall negative events or topics not related to student interests could produce worse results.

In chapter 5, we discuss research regarding the neurobiological, behavioral, and cognitive characteristics of people who are the age of young students (teenagers and beyond). Some behaviors and cognitive skills are probably affected by the immature brains of students. Here, we deepen the discussion on EFs started in chapter 2 in order to find ways to further improve the results shown in chapter 4, as the improvement was not as significant as expected.

Compared to adults, young people show more self-control problems, greater peer influence, greater sensitivity to novelties, less developed counterfactual skills and working memory, increased sensitivity to unfairness, increased desire to make choices, less developed mentalizing, empathy and social behavior, greater difficulty in staying focused, greater desire for identification, increased difficulty understanding the social meanings of faces, greater difficulty waking up early, and a greater ease in getting stressed. The research discussed in this chapter supports the need of taking care of the EFs of university students and the necessity to take into account their needs and interests as much as possible.

In chapter 6, after discussing the reasons that our method was shown to be effective, we present various proposals (mainly learning activities) in order to address the factors that emerged in the references discussed in chapter 5, while also taking into account the discussion in chapter 2, what we wrote regarding Japanese university students in chapter 3, and the results of our analysis in chapter 4. The characteristics of the activities proposed in chapter 6 are in line with our method, as discussed in chapter 3, as its efficacy is supported by the theory discussed in chapter 2, and, to some extent, by the theory discussed in chapter 5 and by the results of our research in chapter 4. For example, this means that although the use of inauthentic materials and pre-listening tasks, along with the passive role of students, could lower student anxiety and stress levels, we did not consider them as viable solutions as they would have significant negative repercussions on learning. Thus, although the objectives of our four activities remain the same, our proposals aim to further address the needs of typical Japanese university students in order to decrease their stress levels, increase their motivation and attention levels, and enhance learning. First, we propose some ways to support sensitivity to novelties. While in principle only four activities are used, two of which, *authentic listening* and *oral free*

production, are the most used as they are meaning-focused, our students usually write in evaluation sheets that they appreciate the variation of the activities in our classes. In other words, although the activities are the same, students find them to be new because their content and the students they are paired with change every time. However, finding ways to create further variation is possible, for example by slightly changing the structure of the activities or the prompts used in some of them. In addition to these variations, we consider the possibility of using a few activities that do not belong to the set of activities of used by Dilit International House.

In addition, we propose ways to keep student stress levels under control, to address their enhanced risk-taking, to increase their self-control, to address their need to be accepted by peers, to address their need to make choices, to improve their counterfactual skills, to improve their understanding of the social meaning of faces, to address their lack of mentalizing and empathy by taking into account the principles of a humanistic approach, to address their sensitivity to identification, to include aerobic exercise during class, to keep students awake, and to address different student learning styles and intelligence preferences. We propose ways to keep student stress levels under control by using their first language and by collecting information regarding their needs and interests in order to address them when possible. We also discuss parts of the attendance guide that we wrote for our students to help them to protect themselves in their lives outside of the classroom. In the guide, we explain the importance of getting enough sleep, and we give practical examples on the times that they should go to sleep if they want to sleep enough and still arrive to lessons on time, taking into account unforeseen events like transport delays. By giving them such practical examples, we hope to help them to plan their lives better. Because of their presumed less developed counterfactual skills, some students probably find planning and dealing with unforeseen events to be difficult. Other advice in the guide includes how students can protect themselves from distractions. We also explain the importance of eating breakfast every day, avoiding caffeine, doing aerobic exercise, etc. Other advice is intended to get students out of their comfort zones by preventing some of their frequent objections. For example, we explain that feeling as if the activities are tiring and difficulty is normal, because students can feel this way as a result of learning many new things. We also encourage students to make a lot of mistakes instead of being afraid of making them, and to ask questions to classmates and the teacher every time they need to do so. We also explain that the more they want to understand everything and speak well, the more they will not be able to (i.e., perfectionism decreases learning speed).

In chapter 6, we also discuss ways to improve the oral final exam, based on the results in chapter 4. In addition, we discuss ways to improve student assessment (in particular, the pros and cons of both formal exams and continuous assessment based on class observation) because of the dissatisfaction we expressed in chapter 3. Also included are suggestions for our university in order to enhance teaching effectiveness, as well as an analysis of Italian language textbooks written for university students and published in both Japan and Italy, along with suggestions for teacher development. Regarding textbooks published in Japan, some authors made a commendable effort toward student identification, which we talked about in chapter 5, to such an extent as to Japan-ize Italy or to use Japanese student characters in their dialogues who speak Italian so well that they set themselves up as models for those who study through such textbooks. However, we believe that this excessive identification, with the inevitable creation of inauthentic situations that results, can instead decrease motivation. Regarding teacher development, we hope to promote training courses held by on-site trainers and who better know the dynamics of the places in which they are teaching than trainers from Italy who are used to working with different types of students may know. At the same

time, we advocate for the use of research on the part of teachers, as each class and each student is a world unto itself, and no trainer, however competent, or language teaching book, however well researched, can cover all possible cases.

論文審査結果の要旨

　本論文は、イタリア語という、外国語の中では比較的学習者数が限定されながらも欧州の主要国の言語であり歴史的にラテン文明の中核を継承して来たと見なしうる言葉を今日の大学生がどのような環境下で学習する状況にいるかを多角的かつ総合的な視点から考察し、我が国の複数の大学での長年に渡る第二外国語教学の経験に基づいた、実効性を見込むことができる教学技法を提起する意図をもって執筆されたものである。

　本論文は６つの章から構成されている。前半の理論的構築の部分と、後半の実践的教学法提示の部分に大別される。

　第１章では、本論文の研究課題、目的、そして論文の構成について説明する。イタリア語を学ぶ学生のモチベーションをいかに高めるかについては、大人の学習者にはうまくいっていたことが、日本の大学生にはそうではなかった。単に学生のモチベーションが低いだけでなく、そのモチベーションの低さがこれまでの教育によってセルフ・コントロール能力の低さと結びついたり、さらに脳神経学的な未熟さが原因と考えられる事例もあった。教師は常に学生から最高のパフォーマンスを引き出すための新しい方法を模索し、クラスにいる学生に応じて適切な調整を行うべきだと考え、そのためには、大学生という日常生活を含め、彼らが育ち、生活している社会の特徴だけでなく、神経生物学的、行動学的、認知学的な特殊性を分析し、学習の仕組みと学生の姿を理解することが必要と考えられる。また、本研究の教授法の理論的前提を分析することで、何がすでに有効なのか、その教授法で学んだ学生たちが実際に出した結果を理解し、本研究に基づく授業をより効果的にする方法を見つけるなど、絶えず革新を行っていくことが必要である。本研究の立ち位置が、neuroeducation（神経教育学）であり、考察対象である学習者と指導者の心理学的・行動学的側面に焦点を当てるために多様な教育方法を参照にしていることが特徴である。

　第２章では、外国語学習者に効果的な学習方法及び指導方法を検討する際に非常に重要な Executive Function (実行機能)、すなわち学習目標に向けた自己規律能力を取り上げ、その役割について考察している。前半は、Dehaene(2020)の The Four Pillars of Learning（学習の４本柱）にヒントを得て、attention（注意）, active engagement（能動的関与）, error feedback（誤りフィードバック）, learning consolidation（定着）の観点から、autonomy（自律学習）に何が必要かを分析している。後半は、学習者の motivation に関わる諸問題を取り上げ考察し、指導者が実行機能に関する知識を得ることにより、より効果的な指導が可能になることを指摘している。実行機能については、第２章以降の章においても、広範囲に取り上げられている。神経教育学領域で実行機能の観点から外国語学習に影響を与える要因の分析を試みたケースは、日本においても世界的にもあまり例がなく、本研究の特徴と言える。

　第３章では、本研究の教育の背景について日本の社会の現状をいくつかの統計に基づいて説明する。また、こ

の章では、筆者が勤務する大学のイタリア語カリキュラムと、その中でのイタリア語会話コースの位置づけを説明する。次に、会話コースで使用している教授法について、本格的なリスニング、言語パズル、口頭での自由な生産、会話の再構築という4つの主な活動について説明する。学生の積極的な役割を強調するこのメソッドの基礎となった二名の高名な研究、即ち Corder (1967/1981; 1976/1981; 1978)の言語間理論と Wilkins (1974; 1976)の本物の教材を使用する主張の重要性に言及し、このメソッドの主要原則を説明している。ディリット・インターナショナル・ハウスの方法論では、ペア・ワークが最もよく使われる相互作用の様式で、この様式の主な利点を批判的に検討する。また、Corder の見解に基づき、前章の議論と同様に、学生のニーズや興味に応じた柔軟なシラバスが必要であることを指摘する。最後に本章では、前章で述べた権威的なスタイルの原則を、どのように授業に適用しているかをまとめ、評価システムや期末試験について、長年にわたって遭遇してきた重要な問題点に焦点を当てながら説明する。本章前半では、学生の学習意欲向上のために指導者が実行機能と密接な関係がある前頭前野に刺激となる授業を行う必要を述べている点が特徴的であり、後の第5章につながる重要な指摘である。

　第4章では、2年間に渡って収録された11名の学生の口頭試問（各学生4回、各学期1回）に基づく研究内容を説明する。調査の結果、学生の流暢性は徐々に向上しており、少なくともこのパラメータに関しては、本研究の方法の有効性が示されたと言える。形態素解析（文法的正確さ）については、3回目の試験でスコアが低下し、4回目の試験で上昇した。この結果は、本研究のメソッドの有効性に関する単なる問題というよりも、発達段階説を支持する研究者が信じていること、つまり、一見減少しているように見えても実は改善しているということと一致しているように思われる。語彙拡張の結果は、形態素の結果と似ているが、より顕著ではなかった。これは、学習者が多くの単語を蓄積した後、ある時点で、新しい情報のために脳内にスペースを確保するために、目的に適さない単語を忘れてしまったのではないかと推測している。応答時間については、本研究が測定しようとした継続的な練習によるワーキング・メモリの向上など、いくつかの要因によって応答時間が影響を受ける可能性があると指摘する。このことから、前章と同様に、実行機能の観点も踏まえながら、データ分析を行っていることも特徴である。

　第5章では、若い学生と同世代の人々の神経生物学的、行動学的、認知学的特性に関する研究を紹介する。本章で提示した教学方法は、大学生の EF をケアし、モチベーションを高め、ストレス・レベルをコントロールするために、学生のニーズや興味に配慮する必要性を裏付けている。本章の前半は、前頭前野を考慮した「脳の成熟」の観点から、第2章の考察をさらに深めている。後半の identification, stress, aerobic exercise, sleep など学生がおかれた環境の対する配慮は、EF の観点から学習効果に影響を与える可能性がある要因として検討されている。本章全体を通して、前頭前野から見た脳の成熟と実行機能に焦点が絞られていることが特徴であり、本論の主張を確認する上で有用である。

　第6章では、第2章の議論と第3章で日本の大学生に関して書いたこと、第4章の分析結果などを考慮しつつ、第5章で述べた文献研究から生じた要因を解決するための様々な提案（主に学習活動）を示している。本研究の提案は、典型的な大学生のニーズに対応し、彼らのストレス・レベルを下げ、モチベーションと注意レベルを高め、学習を向上させることを目的としている。使用する4つのアクティビティのうちオーセンティック・リスニングとオーラル・フリー・プロダクションの2つは、意味に重点を置いているため毎回内容が変わり学生たちは新鮮に感じているので、アクティビティの構成やプロンプトを少し変えるなどして、さらにバリエーションを増やすことは可能である。さらに、本章は、学生のストレス・レベルを抑制する方法、リスク・テイクの強化に対処する方法、セルフ・コントロールを高める方法、仲間に認められたいという欲求に対処する方法などの対

応を提案している。学生の母国語を使い、学生のニーズや関心に関する情報を収集し、可能な限りそれに対応することで、学生のストレス・レベルを抑える方法を提案している。また、本章では、第4章の結果を踏まえて、口頭最終試験の改善方法について考察して学生の評価（特に、正式な試験と授業観察に基づく継続的な評価の双方の是非）を改善する方法についても議論している。また、教育効果を高めるための大学への提案、日伊両国で出版されている大学生向けイタリア語教科書の分析と教師育成への提案も行っている。イタリア人教師よりも、教える場所である教室の力関係をよく知っている現地の教師によるトレーニング・コースの普及が好ましい。それぞれのクラス、それぞれの学生が独自の世界を持っており、どんなに有能な教師も、どんなによく研究された言語教育書も、すべてのケースをカバーすることはできないからである。総じて、本章は第2章と第5章の考察を踏まえ、第3章と第4章で取り上げた所属大学での多種多様な学生に対する言語指導経験を基に、実行機能と前頭前野に関与するための様々な提案を行い、神経教育学の視点から本論文の最後にふさわしいことが特徴と言える。

　本論文を評価できる四つの点は、以下の通りである。

　第一に、英語以上に日常的な場での使用が限定されるイタリア語を日本社会で学び続けるための具体的な教育方法や示唆が、神経教育学の視点から数多く示され、長年の教学経験に裏付けられた教育への熱意と研究への真摯な態度が感じられたこと。

　次に、筆者本人が、今日の大学教育において様々な社会的背景を担って学ぶ学生に対する語学教育の場に立つことで、今回の研究範囲に収めることができず残した問題を理解し、今後の課題を提示したこと。

　第三として、我が国のイタリア語教育界での豊富な経験に基づき、かつ英語などの外国語教育のみならず青少年に特有の心理状態や彼らが置かれた社会状況への配慮などを、神経教育学を含む多方面の研究から、自家薬籠中の物として語学教育に取り込んでいること。

　最後に、現在の変革を遂げつつある日本の高等教育機関での語学教育に従事する上で、教員側からのクラス・マネジメントに偏重しがちな現状において、発信側のみならず受信側の大学生の脳の発達の点から分析を試みた点で、理論から実践への果敢な「橋渡し」を試みたこと。

　なお、本論文の三つの問題点は以下の通りで、最終試験の場で指摘された。

　本論文の基盤となる実験とその分析が、理論的な主張の一部の裏付けに限定され、包括的な実証性を達成したとは言い難い面があることは否めない。言い換えると、蒐集されたデータの解釈の部分と語学教育に関する通説や一般的言説の部分の間の整合性に若干の難点が見出され、つまるところ誘因要素と帰結事象の因果関係を明示するという視点に乏しい点が散見される。また、クラス・マネジメントの扱いに関しては、心理学や教育学の視点もさることながら、脳科学の観点から効率的な外国語学習を扱うべきではないかということも指摘され、これらは今後の研究での課題として認識された。

　筆者が、勤務する大学での第二外国語教育に従事しつつ本論文を完成させるにあたって、本学大学院後期博士課程在籍中に受けた教育の下で本論文を成立させた背後には、本人以外は知りえない苦難があったものと推測され、それを乗り越えようとする継続的な探求心の結晶である本論文は、博士論文としては積み残した部分はあるものの、外国語学習の教育や研究に完成形はないことを考えれば、当該論文が提示した姿もひとつの到達点として、我が国の大学の語学教育を神経教育学からの視点で考察するユニークな実例と見なすことができ、総合的に見ればプラスがマイナスを上回っていると判定することで、結論としては肯定的評価を与えることができると考えられる。

以上の所見により、本論文は、大阪市立大学博士（文学）の学位を授与するに値するものと認められる。