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Blended Learning: Associating Types of Learners' Learning Styles with Their Preferred In-person and Online Learning Activities.

The Case of Master 1 EFL Students at Mila University Centre

A Dissertation Submitted in Partial Fulfilment for the Requirement of the Master Degree in
Didactics of Foreign Languages

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Dedication I

To my parents and my brothers who fuelled my determination.

Walid

Dedication II

In the Name of Allah, Most Merciful, Most Compassionate

I dedicate this work to

My parents for their endless love, prayers and sacrifices

My sisters and my brother.

Imane

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Abstract

The current study attempts to investigate the relation between types of learners' learning styles and their language learning activity preferences in Blended Learning settings. Furthermore, it attempts to cluster the sample of students according to their VARK learning styles. Accordingly, within the context of this study, three research questions are raised: (1) Using the VARK Model, how do students cluster in terms of their learning styles? (2) Is there an association between the preferred blended learning activity and learning style cluster to which learners belong? (3) What is the students' preferred type of instruction? It is hypothesised that there is a significant association between the learners' learning style clusters and their learning activity preferences. The sample was subjected to a cluster analysis based on their answers to a learning styles scale using the VARK model. The analysis was run using SPSS. Following the identification of the clusters, a series of Chi-square tests were conducted to ascertain any potential associations between the preferred blended learning activities and the clusters representing learners' learning styles. In an attempt to answer the research questions, a questionnaire was administered to a hundred Master 1 English as a Foreign Language students at Mila University Centre. The questionnaire includes an adapted version of the VARK scale, among other questions aimed at answering the research questions. The major research findings reveal that students manifest the four learning style types to differing degrees. Additionally, no statistically significant relationship was found between the preferred blended learning activity and learning style cluster. Furthermore, it was revealed that students preferred in-person instruction over online and blended instruction. Other results are further discussed. Eventually, the research work offers some recommendations for pedagogy and future research.

Keywords*:* blended learning activities, learning styles, VARK model, cluster, association.

List of Abbreviations

BL: Blended Learning

CBLT: Competency-Based Language Teaching

CLL: Cooperative language learning

CLT: Communicative language teaching

COVID-19: Coronavirus Disease of 2019

EFL: English as a Foreign Language

LSI: Learning Style Inventory

LSQ: Learning Style Questionnaire

MI: Moderate inclination

OL: Online learning

Q: Question

R+K: to the read/write and kinaesthetic styles

TBLT: Task-Based Language Teaching

V+A: to the visual and auditory styles

VM: Variable Mean

WI: Weak inclination

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General Introduction

1. Statement of the Problem

The past few years have been unusual and exceptional in all aspects of life due to COVID-19, including the areas of teaching and learning. Schools and universities, in most of the world if not all, had to make quick and immediate adjustments to their learning environments in order to ensure both the health of their students and employees, as well as the continuity and success of the academic year. Thankfully, the availability of the internet made the switching process very convenient. As a matter of fact, nothing like this has ever happened in human history, and especially not on such a large, global scale. This meant that the majority of teachers were not trained nor ready to continue to perform their jobs as effectively outside the usual settings, and the Department of Foreign Languages at Abdelhafid Boussouf University Centre in the province of Mila is not an exception.

Moreover, the field of distance-learning, even though very well developed, still had not had much attention or research in mainstream teaching settings. Furthermore, the use of different teaching methods to support the different learning styles has been highly advocated by researchers in the past few decades (Sims & Sims, 1995). Due to all of these factors, the teachers had faced many challenges in attempting to apply new methods of teaching such as 'Blended Learning'. One of these challenges is figuring out how to get different types of learners motivated to engage in these new methods.

No one knew that such an impactful pandemic would strike, and no one knows when a similar event might happen again. Thus, if we want to ensure we offer the same quality of education we usually do in such special cases, this field must be investigated further. Moreover, since the emergence of online learning in the early 1990s, it has been seen as the future of teaching in higher education (Moskal et al., 2013), and it would be a waste not to develop it and investigate it further.

Hence, this study is conducted to investigate whether BL fits different classrooms with students of different characteristics, namely learning styles. Furthermore, it attempts to associate types of learners' learning styles with their preferred in-person and online learning activities in order to make the decision of task selection easier for future applications.

2. Aims of the Study

The present study attempts to investigate the relation between types of learners' learning styles and their preferred language learning activities in blended learning. It sets out to cluster the sample of students according to their learning styles based on the VARK model. Moreover, it attempts to associate the learning style clusters to which learners belong with their preferred in-person and/or online learning activities. Finally, it seeks to unveil the students' preferred type of instruction.

3. Significance of the Study

The significance of the current study stems from it revolving around learning styles, which gained popularity in today's contemporary learner-centred approaches as one of the core elements of the said approaches. Furthermore, this research derives its importance from the fact that it sheds light on what is believed to be the future of teaching in higher education (Moskal et al., 2013). Blended learning is a very versatile and flexible teaching method that should be researched further in order for it to be used to its full potential.

4. The Research Questions and Hypothesis

The main questions of the present study are:

- Using the VARK Model, how do students cluster in terms of their learning styles?
- Is there an association between the preferred blended learning activity and learning style cluster to which learners belong?
- What is the students' preferred type of instruction?

In the light of the aforementioned questions, we hypothesise that:

1. H_a: There is a significant association between the learners' learning style clusters and their learning activity preferences.

   H_0: There is a no association between the learners' learning style clusters and their learning activity preferences.

5. Research Instruments

5.1 Population and Sample

The current study is conducted at the University Centre of Mila, Institute of Letters and Languages, Department of Foreign Languages. The population that this study is concerned with consists of Master 1 EFL students at Mila University Centre in the academic year 2022\2023. The population is made up of 206 students in total, who are divided into 5 groups; among them, 100 students who regularly attended their classes were selected to make up the research sample. The selection of Master 1 is based on the conception that such students are experienced in this specific setting, since they have already had Blended Learning courses, starting with the COVID-19 pandemic. In addition to that, Master 1 students are familiar with the concept of learning styles since they have dealt with it in their university courses.

5.2 Research Tools

In order to reach the desirable research aims, a quantitative method is relied on to validate the above-mentioned hypothesis. For the sake of gathering the needed data, the research has depended on:

- A students' questionnaire:

The students' questionnaire is mainly designed with the aim of determining the students' learning styles, and eliciting their preferences towards language learning activities. After collecting the data, the sample was subjected to a cluster analysis based on their answers to a learning styles scale using the VARK model. The analysis was run using SPSS. Following

the identification of the clusters, a series of Chi-square tests were conducted to ascertain any potential associations between the preferred blended learning activities and the clusters representing learners' learning styles).

6. Structure of the Dissertation

This dissertation consists of two chapters. The first chapter covers the review of the literature and the second one is the practical part. Section one of the first chapter sheds light on blended learning as an effective approach to language teaching. It first defines the method in general, and then it describes the different methods used to teach language through it. It introduces the different approaches used in in-person language teaching and the types of activities that can be integrated in each one. Then it accounts for the different approaches used in online teaching and derives the types of learning activities used in them as well. This section ends with a sub-heading that attempts to relate blended learning activities to learners' learning styles.

Section two of the first chapter presents an overview about learning styles. It defines them in general, then lists three common learning style models in the literature, namely Kolb's model, Honey and Mumford's model, and the VARK model. This section ends by accounting for some learning styles-based activities.

Chapter two deals with a detailed description, analysis and discussion of the data gathered. It focuses on analysing and interpreting the students' questionnaire, and gives some suggestions and recommendations related to its findings.

Chapter 1: Blended Learning and Learning Styles: A Focus on Learning Activities

Introduction

Blended learning (BL) and learning styles are two contemporary concepts that are crucial to pedagogy research. On one hand, blended learning is a versatile method that makes use of both traditional and new technologies to bring out the best learning outcomes. On the other hand, understanding learning styles assists teachers in their objective of satisfying various types of learners' needs in the language classroom.

This chapter offers some exploratory insights into both concepts. It begins with a section dedicated for BL, where it attempts to systematically define it. Then, it accounts for the two teaching facets used in BL, both in-person and online, while focusing on the language learning activities applied in each. In the end, it attempts to relate BL to learners' individual differences, with a focus on learning styles. Such an account is meant to pave the way to the next section. As such, the next section is fully dedicated to learning styles and concomitant activities. It begins by defining learning styles. Then, it accounts for some of the most commonly used learning styles models in the field. Namely, Kolb's model, Honey and Mumford's model, and the VARK model, and ends with an emphasis on learning styles-based activities.

1.1 Blended Learning

Blended learning, an innovative approach to education, combines traditional face-to-face instruction with online learning elements to enhance the educational experience. This instructional design integrates the strengths of both in-person and virtual modalities, offering a versatile and flexible learning environment. By utilizing a variety of digital tools, such as learning management systems, interactive multimedia resources, and online discussions, blended learning promotes active student engagement and collaboration. Moreover, the

combination of offline and online components in blended learning provides opportunities for learners to develop essential digital literacy skills while benefiting from direct interaction with instructors and peers. Blended learning holds the potential to revolutionize traditional teaching methods and contribute to the continuous evolution of language education in the 21st century.

1.1.1 Defining Blended Learning

Blended learning is one of the contemporary methods in the field of language teaching. Moskal et al. (2013, p. 15) examined BL from different aspects, and they broadly defined it as "a mechanism that bridges the old and the new", meaning it combines traditional and online teaching. The rapid development of technology caused BL to gain popularity, and it has been increasingly implemented and researched in higher education settings. However, defining the term BL and setting a clear framework for it is necessary if we want to guide institutions of higher education in strategically adopting and implementing it. Garrison and Vaughan (2008) attempted to do exactly that by defining it as:

> Recognizing true blended learning is not obvious. Blended learning is the thoughtful fusion of face-to-face and online learning experiences. The basic principle is that face-to-face oral communication and online written communication are optimally integrated such that the strengths of each are blended into a unique learning experience congruent with the context and intended educational purpose. […]. Blended learning is not an addition that simply builds another expensive educational layer. It represents a restructuring of class contact hours with the goal to enhance engagement and to extend access to Internet-based learning opportunities. Most important, blended learning is a fundamental redesign that transforms the structure of, and approach to, teaching and learning. (p. 5)

This definition draws upon the use of face-to-face and online teaching, showing that they complete each other's weaknesses and we can make use of both of their strengths. Additionally, it makes a clear distinction between other methods that use online teaching as an addition, and BL which is a complete redesign of the traditional method instead.

Another definition by Graham et al. (2013, p. 4) showed that BL is "the combination of traditional face-to-face and technology-mediated instruction". In the same vein, in their report, Siemens et al. (2015) found that there are common characteristics in the many attempts to define BL in the literature. They asserted that "BL is considered a combination of traditional face-to-face modes of instruction with online modes of learning (OL), drawing on technology-mediated instruction, where all participants in the learning process are separated by distance some of the time" (p. 62).

The attempt at developing an operational definition that describes BL universally, and provides a sturdy foundation for educational policy planning proved to be more troublesome than it seemed at first glance to researchers (Moskal et al., 2013). One issues that emerged was that of answering the question "What arbitrary mix of face-to-face and online learning would constitute blended learning (60–40, 70–30, 50–50)?" (Moskal et al., 2013, p.15). The possibilities are virtually endless, with each one no more or less valid than the others. Moskal et al. (2013) then realised that setting a clear definition heavily relied on the context of the teaching situation i.e. "Characteristics of the student population, mission of the institution, the strategic planning processes, faculty responsiveness, student acceptance, community values, available resources, institution support mechanisms…etc." (p. 15).

1.1.1.1 A Focus on the Nature and Characteristics of Blended Learning

BL is heavily reliant on technology and, therefore, very dynamic and ever-evolving in nature. Due to this characteristic, in addition to the fact that contexts vary greatly in higher education from one institution to another, a universal definition becomes very difficult to set

(Moskal et al, 2013). In the same vein, due to the nature of BL and its reliance on technology, Graham et al. (2013) claimed that many higher education institutions, perhaps most, have experimented with BL without 'officially' adopting it. In other words, in many institutions, BL has been used by individual faculties that are interested in using both online and traditional strategies as an effort to improve student learning outcomes, rather than being implemented as a strategic institutional initiative. On the other hand, its flexibility allows educational institutions to tailor the concept whenever necessary to maximise its potential and to respond to the needs of newer generations.

Ultimately, the attempt at developing a concrete definition was dropped, and they accepted that BL should be considered as a 'mental model' instead. According to Moskal et al. (2013), mental models are "internally held images of how the world works in a generalised sense that is highly influenced by the context in which one operates" (p. 16). In short, the term 'blended learning' could not be given a clear definition. According to Oliver and Trigwell (2005), the term 'blended learning' has been used inconsistently due to the difficulty of defining it, which makes it almost impossible to develop a consistent theoretical framework with which we can conduct research around BL and interpret its data, rendering it a difficult area to research.

1.1.1.2 The Importance and Relevance of Blended Learning in the Educational Landscape

Graham et al. (2005) argued that BL is an effective teaching method which allows one to benefit from both in-person and online learning. Its effectiveness lies in the following reasons:

1.1.1.2.1 Improved Pedagogy

Constraints such as class duration, size, and location can provide a formidable barrier to making changes to traditional teaching strategies. Introducing blended instructional

components opens a range of possibilities in teaching, that directly lead to learning benefits and outcomes. Among those are:

- a change from a more teacher-centred to learner-centred focus (Hartman et al., 2000).
- a greater emphasis on peer-to-peer learning (Collis et al., 2003).
- higher student academic achievement (Siemens et al., 2015).

1.1.1.2.2 Increased Access and Flexibility

Many learners seek the convenience of a BL setting while also desiring to preserve the interpersonal aspect that characterizes face-to-face classroom interactions. BL emerged as a solution that reconciles these two factors by enhancing convenience without compromising the invaluable personal connection fostered through in-person instruction (Collis, 2003). Reducing the duration of face-to-face instruction, allows the learners to benefit from a reduction in their temporal and spatial limitations (Hartman et al., 2000), as well as alleviating the stress of individuals who endure long commutes and struggle with parking in heavily populated campuses (Willett, 2002).

1.1.1.2.3 Increased Cost-Effectiveness

The adoption of BL solutions by educational institutions is predominantly motivated by their cost-effectiveness in distributing vital information to their learners. A study conducted by Singh and Reed (2001) revealed that teaching objectives can be achieved while witness a substantial reduction of up to 85% in travel expenses and time investment by embracing BL approaches.

The integration of both instructional methods offers language educators and researchers a unique opportunity to harness the strengths of both face-to-face interactions and online learning platforms. Due to this composite nature of BL which combines both teaching methods, it becomes essential to acknowledge and consider the distinct learning activities associated with

each modality. Therefore, it is essential to account for and examine the learning activities specific to both face-to-face and online contexts, ensuring a holistic understanding of BL.

1.1.2 In-person Language Learning Activities: A Historical Overview

The field of language teaching has a very long history. However, according to Richards and Rodgers (2014), the rapid developments in the fields of applied linguistics and psychology during the twentieth century are what made up the foundations of contemporary language teaching approaches. This spurt in research has led to the emergence of what was believed to be a variety of effective and theoretically sound language teaching methods, which were characterised by change and innovation due to their competing language teaching ideologies. The burst of innovation in language teaching methods happened mainly due to the increase in demand for speakers of second and foreign languages, English to be specific. This increased demand can be attributed to many factors such as World War II, immigration, the internationalisation of education, globalisation, the rise of the Internet, the global spread of English, and the shift of teaching goals towards oral proficiency rather than reading comprehension.

In accounting for the different language teaching approaches and methods, Richards and Rodgers (2014) have presented some in-person teaching techniques or activities, which, goes without saying, are part of BL environments:

1.1.2.1 The Grammar Translation Method

The Grammar Translation Method appeared during the seventeenth century and dominated until the nineteenth. As the status of the Latin language declined from that of the world's most widely studied foreign or second language to that of an "occasional" subject in the curriculum, the analysis of its grammar and rhetoric became the model for foreign language study. Its principal characteristics were the following:

1. The main goal of studying a foreign language is to read its literature or in order to benefit from the mental discipline and intellectual development that result from learning a foreign language.
2. The main focus is on the skills of reading and writing; little or no attention is paid to speaking or listening.
3. Vocabulary is taught through translated word lists and memorisation, and selected solely based on the reading texts used.
4. The sentence is viewed as the basic unit of language, and much of the lesson is devoted to translating sentences into and out of the target language.
5. Accuracy is emphasised.
6. Grammar is taught deductively by an explicit presentation of the rules, which are then practised through translation exercises.
7. The learner's native language is the medium of instruction.

These principles can materialise in a set of specific language learning activities. Among these activities are:

- Translation exercises: The teacher provide sentences or short paragraphs in the target language that students need to translate into their native language or vice versa. This helps students practice applying grammar rules and building their vocabulary.
- Grammar drills: The teacher uses structured exercises where students fill in the blanks, match sentence halves, or transform sentences according to specific grammar rules. These exercises focus on accuracy and reinforce grammatical concepts.
- Sentence parsing: The teacher provides sentences in the target language and ask students to analyse the grammatical structure, identify parts of speech, and label

different elements like nouns, verbs, adjectives, etc. This helps develop analytical skills and understanding of sentence structure.

- Memorisation tasks: The teacher assigns students specific grammar rules, verb conjugations, or vocabulary lists to memorize. Then they are tested on their ability to recall and apply this knowledge accurately.
- Text analysis: The teacher selects texts in the target language, such as literary excerpts or newspaper articles, and guide students in analysing the grammar and vocabulary used. Students can identify specific sentence structures, grammatical patterns, or vocabulary usage.

Today, the Grammar Translation Method continues to be widely used in modified forms in some parts of the world. Contemporary texts for teaching foreign languages at the college level still sometimes reflect the principles of the Grammar-Translation Method. There is no literature that provides a rationale for it in linguistics, psychology, or educational theory. However, this continued use may be due to:

- The limited proficiency of the language teachers' spoken English.
- The fact that this was the method their teachers used.
- It gives teachers a sense of control and authority in the classroom.
- It works well in large classes.
- As well as the slower development of educational systems, teacher training, cultural perceptions, and limited learning resources and finance (Jin & Cortazzi, 2011).

However, during the mid-nineteenth century, an opposition to this method gradually developed in Europe. It was referred to as The Reform Movement, and it laid the foundation for the development of new language teaching methods that have continued to be used until the present day.

The increased opportunities for communication among Europeans created a demand for oral proficiency in foreign languages. At first, this sparked a market for conversation books intended for private study. However, language teaching specialists quickly became interested in the way English and modern European languages were being taught. In addition, the public education system was seen to be inadequate in accomplishing its responsibilities. New approaches to language teaching were developed by individual language teaching specialists all across Europe, each with different ideas for reforming the teaching of modern languages.

Additionally, the discipline of linguistics was revolutionised. Phonetics was established as a subfield of linguistics, emphasising that speech, rather than the written word, was the primary form of language. The International Phonetic Association was founded in 1886, and one of its earliest goals was to improve the teaching of modern languages. It advocated the following principles:

1. Focus on the spoken language.
2. Phonetic training in order to establish good pronunciation habits.
3. Use of conversation texts and dialogues to introduce conversational phrases and idioms.
4. Grammar is taught inductively.
5. New meanings are taught through establishing associations within the target language rather than with the native language.

In 1882, Wilhelm Viëtor, a prominent scholar in Germany, published his views in an influential pamphlet, *Language Teaching Must Start Afresh*, in which he strongly criticised the inadequacies of The Grammar Translation Method and emphasised the importance of training teachers in the new principles of phonetics.

In general, scholars belonging to The Reform Movement agreed that:

1. The main focus is on the spoken language, and this should be reflected in an oral-based methodology.
2. The findings of phonetics should be applied to both teaching and teacher training.
3. Learners should hear the language first, before seeing it in written form.
4. Words should be presented in sentences, and sentences should be practised in meaningful contexts and not be taught as isolated, disconnected elements;
5. Grammar should be taught inductively.
6. Translation should be avoided. However, the native language could be used in order to explain new words or to check comprehension.

These principles laid the theoretical foundations for a method of language teaching based on a scientific approach to the study of language learning. This led to the emergence of what referred to as *natural methods*, and ultimately to the development of the Direct Method.

1.1.2.2 The Direct Method

Richards and Rodgers (2014) explained that the Direct Method was introduced in France, Germany, and the United States through its use by Sauveur and Maximilian Berlitz in successful commercial language schools. Its language teaching/learning activities are best described in the following guidelines which are still followed in contemporary Berlitz schools:

Never translate: demonstrate

Never explain: act

Never make a speech: ask questions

Never imitate mistakes: correct

Never speak with single words: use sentences

Never speak too much: make students speak much

Never use the book: use your lesson plan

Never jump around: follow your plan

Never go too fast: keep the pace of the student

Never speak too slowly: speak normally

Never speak too quickly: speak naturally

Never speak too loudly: speak naturally

Never be impatient: take it easy (Richards & Rodgers, 2014, p. 12).

These guidelines can be translated into some practical language learning activities. Examples of these activities are:

- Conversation Practice: The teacher engages students in natural conversations to develop their oral skills, and encourage them to use the target language to express themselves, ask questions, and respond to prompts or real-life situations.
- Question-Answer Exercises: The teacher uses a question-and-answer format to practice specific language structures or vocabulary. He provides prompts or examples to elicit responses from students, and encourages them to answer using the target language.
- Role-Plays: The teacher assign roles or scenarios to students, such as ordering food at a restaurant or booking a hotel room. This activity allows students to practice real-life situations, using the target language to interact and respond appropriately.
- Vocabulary Drills: The teacher uses flashcards or matching exercises to reinforce vocabulary learning. He also encourages students to associate new words directly with their meanings in the target language, avoiding translation.

- Picture Description: Display pictures or images and have students describe them in the target language. This activity promotes vocabulary expansion, sentence formation, and speaking fluency.
- Grammar in Context: The teacher teaches grammar points through contextualized examples and practice activities. He also provides meaningful sentences or short passages where students can identify and apply the target grammar rules.
- Language Games: The teacher incorporates language games like word puzzles, memory games, or language competitions to make learning fun and engaging for the learners. These games help reinforce vocabulary, grammar, and speaking skills.

1.1.2.3 The Audiolingual Method

According to Richards and Rodgers (2014), the involvement of the United States (US) in World War II significantly affected language teaching there. To supply the US government with fluent speakers of Asian and European languages, and who were able to function as interpreters, code-room assistants, and translators, it was necessary to set up a special language training programme. Fifty-five US universities were commissioned to develop foreign language programmes for military personnel. Consequently, the Army Specialised Training Programme (ASTP) was established in 1942. Attaining conversational proficiency in a variety of foreign languages was the main objective of these army programmes. The ASTP lasted only about two years, but it gained popularity in the academic community. For the next ten years, the "Army Method" and its use in regular language programmes were discussed. The methodology of the Army Method, just like the Direct Method, derived from the intensity of contact with the target language.

The types of learning activities that were used in the Audiolingual Method are the following:

- Dialogues: Students engage in scripted conversations to practice target language structures and vocabulary. They may take turns playing different roles in the dialogue. Dialogues contextualise key structures, illustrate situations in which structures might be used, as well as some cultural aspects of the target language. They are also used for repetition and memorisation. After a dialogue has been presented and memorised, specific grammatical patterns in the dialogue are selected and become the focus of various kinds of drill and pattern-practice exercises.
- Drills: Various drill types are employed by the teacher, such as substitution drills, repetition drills, transformation drills, and chain drills. These drills focus on specific language patterns and help students internalise correct usage.
- Question and answer exercises: Students practice asking and answering questions using the target language. The teacher provides models, and students reproduce them while incorporating new vocabulary or grammar.
- Gap filling: Students complete sentences or dialogues by filling in missing words or phrases, promoting accurate language production.
- Dictation: The teacher reads a passage or sentence aloud, and students write down what they hear. This activity develops listening skills, spelling, and accurate reproduction of language.
- Repetition exercises: Students repeat words, phrases, or sentences after the teacher to practice pronunciation and intonation.
- Language games: Simple games, such as memory matching games, and word puzzles, can be adapted to reinforce vocabulary, grammar, and language patterns.

1.1.2.4 Communicative Language Teaching

The Communicative Language Teaching approach (CLT) was introduced by Wilkins (1973). He proposed a communicative definition of language that served as a basis for developing communicative syllabuses for language teaching. His definition attempted to demonstrate the systems of meanings that lay behind the communicative use of language. He described two types of meanings: notional categories (time, sequence, quantity, location, frequency) and categories of communicative function (requests, denials, offers, complaints). He later revised and expanded his definition into a book titled *Notional Syllabuses*, which had a significant impact on the development of CLT. Later on, The Council of Europe incorporated his analysis into a set of specifications for a first-level communicative language syllabus.

CLT is grounded in a functional theory of language, which places emphasis on language as a vehicle for communication. The primary objective of language instruction is to develop what Hymes (1972) coined as "communicative competence." Hymes advocated for the integration of linguistic theory within a broader framework that encompasses communication and culture. His concept of communicative competence entailed a comprehensive understanding of the knowledge and skills necessary for effective communication within a specific speech community. According to him, an individual who attains communicative competence possesses both the requisite knowledge and proficiency in language use with respect to the following:

- Whether (and to what degree) something is formally possible.
- Whether (and to what degree) something is feasible in virtue of the means of implementation available.
- Whether (and to what degree) something is appropriate (adequate, happy, successful) in relation to a context in which it is used and evaluated.

- Whether (and to what degree) something is in fact done, actually performed, and what its doing entails. (Hymes, 1972, p. 281).

Richards and Rodgers (2014) argued that learners learn a language by communicating in it, and that meaningful communication provides a better opportunity for learning than a grammar-based approach. Therefore, activities used in this approach reflect the following principles:

• Make real communication the focus of language learning.

• Provide opportunities for learners to experiment and try out what they know.

• Be tolerant of learners' errors as they indicate that the learner is building up his or her communicative competence.

• Provide opportunities for learners to develop both accuracy and fluency.

• Integrate the different skills, namely listening, speaking, reading, and writing together, since they usually occur together in the real world.

• Let students induce or discover grammar rules.

These principles can materialize in a number of practical activities. Among these activities are the following:

- Role-plays and simulations: These activities involve students taking on different roles and engaging in realistic language use. They can simulate real-life situations such as ordering food in a restaurant or conducting a job interview.
- Information gap tasks: These activities require students to exchange information to complete a task. For example, students may be given different pictures or written information and have to ask and answer questions to gather missing details.
- Problem-solving activities: These activities encourage students to use language to solve a problem or accomplish a task. It could involve group discussions,

debates, or brainstorming sessions where students have to collaborate and communicate their ideas.

- Language games: Games are an engaging way to practice language skills. They can be designed to focus on specific language areas, such as vocabulary or grammar, while promoting communication. Examples include board games, word puzzles, or quizzes.
- Collaborative projects: Students work together on a project that requires them to use the target language. This could involve creating a presentation, conducting research, or producing a video or audio recording.
- Comprehension based on authentic materials: Using authentic materials like newspaper articles, songs, videos, or podcasts can provide real-life language input and promote communication. Students can engage in activities such as comprehension tasks or discussions on these materials.

1.1.2.5 Whole Language

The term Whole Language was created in the 1980s by a group of US educators interested in teaching reading and writing for first language learners (often referred to as the teaching of literacy). However, the term Whole Language is often used in second/foreign language teaching to encompass the four skills of language. It emphasises learning to read and write naturally with a focus on real communication.

Activities that can be used in this method are characterised by flexibility in structure. Examples are the following:

- individual and small-group reading and writing.
- ungraded dialogue journals.
- writing portfolios.
- writing conferences.

- student-made books.
- story writing.

1.1.2.6 Competency-Based Language Teaching

According to Richards and Rodgers (2014), the Competency-Based Approach, unlike the previous approaches, adopts a *backward design* to language course development. That is, it begins by describing the required learning outcomes, or what the learner should be able to do at the end of the course, and then proceeds to make decisions related to methodology and syllabus following the statements of learning outcomes.

Competency-Based Language Teaching focuses on outputs rather than on inputs to learning. It addresses "what the learners are expected to do with the language, however they learned to do it" (Richards & Rodgers, 2014, p. 151). That means that the teacher is free to choose any activities that help acquire the desired competencies. However, The California Department of Education (1992, pp. 5-8) defined some standards that can be useful for designing activities in this method:

- Instructional activities integrate the four language skills (listening, speaking, reading, and writing) to emphasise the holistic nature of language.
- Language tasks in the classroom consist of meaningful interchanges that enhance students' communicative competence.
- Instructional activities focus on the acquisition of communication skills necessary for students to function in real-life situations.
- Instruction focuses on the development of the receptive skills (listening and reading) before the development of the productive skills (speaking and writing).
- A variety of grouping activities are used in the classroom to facilitate student-centred instruction.

- Instructional activities are varied to address different learning styles (aural, oral, visual, kinaesthetic) of the students.
- Instructional activities integrate language and culture so that students learn about the United States' culture in terms of significant and subtle characteristics that compare and contrast with those of their own culture.
- Learning activities develop the language necessary for students to access higher level thought processes (analysis, synthesis, and evaluation).
- Instructional activities require students to take active roles in the learning process, transferring critical thinking to real problem-solving situations in their everyday lives.

These standards can be converted into a variety of language teaching activities. Examples of these activities are:

- Role-plays: Learners engage in simulated real-life scenarios, taking on specific roles and interacting with each other to practice and apply language skills.
- Problem-solving tasks: Learners work individually or in groups to solve language-related problems or complete language-based tasks, encouraging critical thinking and language use in context.
- Information gap activities: Learners work in pairs or groups, with each participant having different information. They must communicate and exchange information to complete a task, fostering communication and information sharing.
- Collaborative projects: Learners work together to complete a project, such as creating a brochure, conducting surveys, or developing multimedia presentations. This promotes cooperation, research skills, and authentic language use.

- Authentic materials analysis: Learners engage with authentic materials (e.g., newspaper articles, advertisements, videos) to develop language skills, cultural understanding, and critical analysis.
- Task-based learning: Learners perform specific tasks that require language use and problem-solving, such as planning a trip, organizing an event, or writing a formal letter. This activity emphasizes the functional use of language in real-life situations.
- Language games: Interactive games and puzzles are employed to reinforce language skills, vocabulary, and grammar in an engaging and enjoyable way.
- Debate or discussion activities: Learners discuss and debate topics of interest, expressing their opinions, defending arguments, and engaging in meaningful conversations to develop speaking and listening skills.

1.1.2.7 Task-Based Language Teaching

Task-Based Language Teaching (TBLT) is defined as "an approach to language education in which students are given functional tasks that invite them to focus primarily on meaning exchange and to use language for real-world, non-linguistic purposes" (Van den Branden, 2006). Some of its proponents (e.g. Willis and Willis 2007) considered it a logical development of CLT, since it shares some of the common principles that are part of the CLT movement from the 1980s. such as:

- Activities that involve real communication are essential for language learning.
- Activities in which language is used for carrying out meaningful tasks promote learning.
- Language that is meaningful to the learner supports the learning process.

Pica et al. (1993, p.19) list a few activities that can be used in this method:

- Jigsaw tasks: These involve learners combining different pieces of information to form a whole (e.g., three individuals or groups may have three different parts of a story and have to piece the story together).
- Information gap tasks: One student or a group of students has one set of information and another student or group has a complementary set of information. They must negotiate meaning and find out what the other party's information is in order to complete an activity.
- Problem-solving tasks: Students are given a problem to solve and a set of information. They are required to use the information to arrive at a solution to the problem. There is generally a single resolution of the problem.
- Decision-making tasks: Students are given a problem for which there are a number of possible outcomes, and they must choose one through negotiation and discussion.
- Opinion exchange tasks: Learners engage in discussion and exchange of ideas. They do not need to reach agreement.

1.1.2.8 The Lexical Approach

The Lexical Approach was developed by Michael Lewis in the late 1990s (Lewis, 1993, 1997, 2000) and it refers to one derived from the belief that "the building blocks of language learning and communication are not grammar, functions, notions, or some other unit of planning and teaching but lexis, that is, words and particularly multi-word combinations" (Richards and Rodgers, p. 215). In other words, the Lexical Approach reflects a belief in the centrality of multi-word lexical units or "chunks" that are learned and used in language. These prefabricated chunks can either be formed by collocations or fixed phrases.

Richards and Rodgers (2014, pp. 220-222) also defined a set of tasks that can be used in this method:

- Awareness activities: These are activities that facilitate the noticing of chunks. An example is the use of corpora. Learners are given access to lexical items in context via the computer corpus. And this allows students (and their teachers) to see how these words actually behave in authentic texts.
- Training in text chunking: Chunking exercises seek to raise awareness of chunks and how they operate. Boers and Lindstromberg (2009, p. 47) explained that in a text chunking activity, students are asked to highlight word combinations in an authentic text that they consider to be multiword units (e.g., strong collocations). Their answers are then compared to those of their peers, or checked against the teacher's selection. Alternatively, dictionaries or online sources (e.g., search engines such as Google) can be used in order to verify the selected word combinations.
- Retelling: After studying an authentic text with an emphasis on the chunks that appear in it, students are asked to take part in retelling activities, where they summarize or retell what they have read, while attempting to use the same chunks that appeared in the text.

1.1.2.9 Cooperative Language Learning

Cooperative Language Learning (CLL) is an approach to teaching that is considered to be part of a more general instructional approach, known as Collaborative or Cooperative Learning (CL), which originated in mainstream education and emphasises peer support and coaching. Its peer-tutoring and peer-monitoring roots go back hundreds of years. However, John Dewey is the one usually credited with promoting the idea of building cooperation in learning into regular language classrooms (Rodgers, 1988), and it was more substantially refined and developed in the United States between the 1960s and 1970s due to the forced integration of public schools. CLL "makes maximum use of cooperative activities involving

pairs and small groups of learners in the classroom" (Richards & Rodgers, p. 244). Educators were attempting to move away from traditional models of classroom learning that were teacher-centred, to foster competition rather than cooperation, and to favour the majority of students. They believed that this kind of learning environment would disadvantage the minority of students compared to higher-achieving students. In this context, CL aims to:

- raise the achievement of all students, including those who are gifted or academically handicapped.
- help the teacher build positive relationships among students.
- give students the experiences they need for a healthy social, psychological, and cognitive development.
- replace the competitive organisational structure of most classrooms and schools with a team-based, high-performance organizational structure.

Some of the learning activities used in this approach are:

- Jigsaw puzzles: Each group member receives a different piece of information. Students then regroup in topic groups (expert groups) composed of individuals with the same piece to master the material and prepare to teach it. After that, students return to home groups (Jigsaw groups) to share their information with each other. Students then attempt to synthesise the information through discussion.
- Cooperative projects - discovery learning: Students identify subtopics for each group member. Students then research the information using resources such as library references, interviews, visual media. After that, students synthesise their information for a group presentation: oral and/or written. Each group member plays a part in the presentation. Finally, each group presents a report of their work to the whole class.

Olsen and Kagan (1992, p. 88, cited in Richards & Rodgers, p. 251) described the following additional examples of CLL activities:

- Three-step interview: (1) Students are in pairs; one is the interviewer and the other is the interviewee. (2) Students reverse roles. (3) Each shares with his or her partner what was learned during the two interviews.
- Roundtable: There is one piece of paper and one pen for each team. (1) One student makes a contribution and (2) passes the paper and pen to the student on his or her left. (3) Each student makes contributions in turn. If done orally, the structure is called Round Robin.
- Think-Pair-Share: (1) Teacher poses a question (usually a low-consensus question). (2) Students think of a response. (3) Students discuss their responses with a partner. (4) Students share their partner's response with the class.
- Solve-Pair-Share: (1) Teacher poses a problem (a low-consensus or high-consensus item that may be resolved with different strategies). (2) Students work out solutions individually. (3) Students explain how they solved the problem in Interview or Round Robin structures.
- Numbered Heads: (1) Students number off in teams. (2) Teacher asks a question (usually high-consensus). (3) Heads Together - students literally put their heads together and make sure everyone knows and can explain the answer. (4) Teacher calls a number and students with that number raise their hands to be called on, as in traditional classrooms.

1.1.2.10 Community Language Learning

Community Language Learning is a method developed by Charles A. Curran which represents the use of Counselling-Learning theory to teach languages. Curran was a specialist in counselling and a professor of psychology at Loyola University, Chicago. His application of

psychological counselling techniques to learning is what is known as Counselling-Learning. To be more specific, counselling takes place when a person gives advice or support to another who is in need, and Community Language Learning attempts to redefine the roles of the teacher (the counsellor) and the learners (the clients) in the language classroom using this counselling metaphor (Richards & Rodgers, 2014).

A student of Curran, La Forge (1983), further explained Community Language Learning as a theory in which language is viewed as a *social process*. According to him:

> Communication is more than just a message being transmitted from a speaker to a listener. The speaker is at the same time both subject and object of his own message. […] Communication is an exchange which is incomplete without a feedback reaction from the destinee of the message. (p. 3)

This is in stark contrast to the traditional sender-message-receiver model in information theory, which considers the transfer of information to be unidirectional. Richards and Rodgers represent this cleverly in a simplified figure:

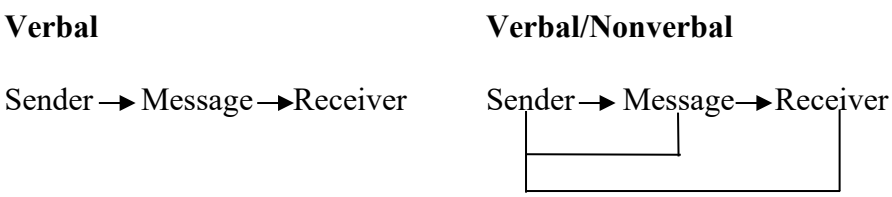


Figure 1.1 Comparison of the information-transmission model (to the left) and the social-process model (to the right) of communication (Richards & Rodgers, 2014, p. 305)

As with most methods, Community Language Learning combines innovative learning tasks and activities with conventional ones. Richards and Rodgers (2014) account for the following:

- Translation: Learners form a small circle. A learner whispers a message or meaning he or she wants to express; the teacher translates it into (and may interpret it in) the target language; the learner then repeats the teacher's translation.

- Group work: Learners may engage in various group tasks, such as small-group discussions of a topic, preparing a conversation, preparing a summary of a topic for presentation to another group, or preparing a story that will be presented to the teacher and the rest of the class.
- Recording: Students record conversations in the target language.
- Transcription: Students transcribe utterances and conversations they have recorded for practice and analysis of linguistic forms.
- Analysis: Students analyse and study transcriptions of target-language sentences in order to focus on particular lexical usage or on the application of particular grammar rules.
- Reflection and observation: Learners reflect and report on their experience of the class in groups. This usually consists of expressions of feelings and so on.
- Listening: Students listen to a monologue by the teacher involving elements they might have elicited or overheard in class interactions.
- Free conversation: Students engage in free conversation with the teacher or with other learners. This might include discussion of what they learned as well as feelings they had about how they learned.

1.1.3 Online Language Learning Activities

Technology constantly changes and re-shapes entire fields of research wherever it is included, and teaching is no exception. According to Allen and Seaman (2011), the current generation of learners — or the so-called digital natives — prefers online and BL environments to traditional teaching methods, with 31% of American higher education students taking at least one online course as of the fall of 2010. Thomas (2011) asserts that this change in the learners' preferences reflects the increased need to serve a generation that prefers to learn through

experience or by interacting with learning tools. Therefore, in this day and age, it is a must to research and advocate for the utilisation of technology-mediated environments or platforms.

Cummings et al. (2015) presented some active online learning techniques to be used in BL environments. It is to such learning activities that we now turn our attention.

1.1.3.1 Online Role Playing

As defined by Van Ments (1983), role playing is when a person imagines to play the role of a character in a defined situation. According to Cummings et al. (2015), incorporating role play activities in online learning "increased motivation, improved negotiation and decision-making, enhanced collaborative learning, and stimulated greater problem-solving" (p. 62). Some of the online role-playing activity examples (Cummings et al., 2015, p. 63) include:

- **Stories, Situations, or Case Studies**: Learners share stories, brief situational circumstances, or they use case studies to guide discussion of concepts using online platforms.
- **Hypothetical Characters**: The teacher establishes a hypothetical character such as a baby, then develop a fictional setting and set of parameters for the learners to share co-parenting roles using online platforms.
- **The use of videogame avatars**: The teachers develops historical, fictional, or realistic situations. After that, learners use online videogame avatars to role play events, such as in Second Life ® (Wakefield et al., 2012).
- **Cooperative Learning Strategies**: The learners split into small groups for interaction and role playing about a strategy or concept related to the course content using online platforms (Johnson, et al., 1998).

1.1.3.2 Online Problem-Based and Project-Based Learning

Problem-based learning is a learner-centred approach that encourages learners to conduct their own research, integrate theory and practice, and apply their knowledge and skills

to develop a viable solution to the problem at hand. Similarly, project-based learning involves a process of problem-solving. However, it usually requires the submission of a final product such as a presentation or paper (Savery, 2006).

According to Cummings et al. (2015), both of these techniques reported positive outcomes for academic achievement when used online including "better performance on high stakes testing, improved critical thinking, […] learning with a deeper understanding while retaining content longer, and demonstrating better problem-solving skills" (p. 64). Additionally, they provided a set of examples and resources that can be used in designing online problem-based or project-based learning activities. Some are outlined as follows:

- **Problem-Based Learning Clearinghouse**: By University of Delaware (https://itue.udel.edu/pbl/problems). This site provides problems and articles to assist educators in using problem-based learning. The problems and articles are peer reviewed by problem-based learning experts in the disciplinary content areas.
- **Buck Institute for Education:** (https://www.pblworks.org). This is a non-profit organisation that is dedicated to providing project-based learning instructional practices and products. It maintains current research, best practices, and a toolkit for instructors who are just starting out with problem-based learning.
- **Edutopia's Project-Based Learning from Start to Finish Video**: (https://www.edutopia.org/video/project-based-learning-success-start-finish). This video details a school wide problem-based learning model at Manor New Technology High School (Cummings et al., 2015, pp. 64-65).

1.1.3.3 Online Case-Based Learning

Case-based learning is simply defined as case studies that are written for classroom analysis and discussion, with activities usually including three components: “a reality-based situation; research embedded throughout the activity; and learner exposure to various perspectives” (Cummings et al., 2015, p. 65). According to Herreid and Schiller (2013), case-based learning has the ability to engage students in exploring a particular topic while developing critical-thinking skills, as it combines active, student-centred learning with content acquisition that can be applied to solve real-world problems. An example can be seen in flipped classrooms with the students watching a video of the case being dealt with before class, and the second part of the case study takes place in class by participating in discussions.

In the same vein, Golich et al. (2000) claimed that case studies benefit the classroom in being more learner-centred, and increase the interaction between the teacher and the learners. Additionally, they sharpen communication and critical thinking skills since students apply their knowledge to analyse and discuss the case at hand. In the end, it is important that the students report their conclusions concerning the case, in order to make connections between the conversations and the learning objectives.

In order to ensure the effective use of case studies, the Carnegie Mellon Eberly Centre (n.d) proposes several guidelines, a couple of which are:

- It is important that the size of the group be appropriate for the discussion.
- The instructor should be familiar with the specific case study and its issues, and prepare prompts and questions related to it.

Additionally, Butler et al. (2006) found that case studies that covered cultural issues and promoted cultural awareness resulted in a greater understanding of cultural diversity. Cummings et al. (2015) provided a large repository of cases that can be searched by discipline, type of case, subject, or educational level, in order to be used in online case-based teaching

activities: National Centre for Case Study Teaching in Science: (https://www.nsta.org/case-studies).

1.1.3.4 Online Collaborative Activities

Online peer collaboration offers students opportunities to examine their classmates' work and have valuable discussions with them, which lead to the development of critical thinking and meta-cognitive skills (Brindley et al., 2009). In addition to that, Davis (1993) asserted that students who engage in collaborative activities appear to be more satisfied with their classes.

1.1.3.4.1 Online Peer Editing

According to Hill (2011), online peer editing — or peer review — is a form of collaborative learning in which students review and offer feedback on each other's work using online platforms like Google Docs. In the context of teaching writing, collaborative learning approaches consider writing as a social process rather than an individual one. Online peer editing helps students "gain experience with cooperative and supportive peer relationships; improve their editing, analysis, and writing skills; and develop increased self-confidence" (Hill, 2011, p. 672). Hill (2011) also asserted that one of the most direct benefits for students is the opportunity to work as part of a team, providing mutual support and helping each other succeed, building a sense of community and trust, and developing greater respect for others. When students receive constructive feedback on their work, they learn to be receptive to such comments from colleagues. In addition, they develop their abilities to review and evaluate constructive criticism, and carefully integrate the feedback into their own work. Moreover, by reviewing a classmate's assignment, students have a rare opportunity to assess their own development in the course relative to other students. In addition, peer editing and assessment, in a positive and supportive learning environment, allows students to relate to, and prepare for,

real-life experiences, since they must be able to give and receive constructive feedback in the workplace (Gueldenzoph & May, 2002).

1.1.3.4.2 Online Peer Instruction

Boud et al. (1999) defined peer instruction as a teaching and learning strategy where students learn with, and from, each other without the immediate intervention of a teacher. Examples of peer instruction include: student-led workshops, study groups, team projects, student-to-student learning partnerships and peer feedback sessions. Topping (2009) suggested a few other examples, which are: writing assignments, oral presentations, portfolios, and test performances.

Mazur (1997) developed and field-tested peer instruction at Harvard University, and found that it helped students learn better than traditional lectures. The University of Massachusetts, Lowell, and the Appalachian State University are two other prime examples where peer instruction received a lot of gratitude from students.

According to McKenna's and French's study (2011), students who studied using peer instruction reported increased confidence in their knowledge and abilities, reflected on their own learning, felt comfortable learning skills with more experienced peers, and found the experience to be rewarding. Besides, many suggested there should be more opportunities for such types of learning and interaction.

A study by Tseng and Tsai (2007) demonstrated the significant impact of online peer assessment on the improvement of students' project quality. It not only offered students the opportunity to learn from their peers, but also facilitated their growth through the evaluation of their peers' work. Additionally, the implementation of networked peer assessment held the potential to alleviate the instructional burden on educators. Moreover, the online peer assessment system successfully cultivated a miniature learning society, where students engaged in evaluating their peers' work and incorporating peer feedback. This iterative process gradually

refined and enhanced students' original work, fostering the construction and refinement of knowledge through social interactions within a virtual community connected via the Internet.

1.1.3.5 Building Online Communities

Fulton and Riel (1999) defined an online learning community as a group of people who share a common interest in an area, a form of discourse, and a sense-making approach to building collaborative knowledge on the internet. In the same vein, Boettcher and Conrad (1999) describe an online learning community as a self-managing entity. They defined it as a group of learners who support and assist each other, make decisions synergistically, and communicate with peers on a variety of topics using the internet. Additionally, Palloff and Pratt (1999) observed that students interacting together in an online community was a leading factor to effective knowledge transference.

1.1.4 Blended Learning and Individual Differences: A Focus on Learning Styles

As educators strive to create more effective and engaging learning experiences, BL offers a flexible and personalised approach that can better accommodate individual differences in learning styles, preferences, and abilities. It also provides opportunities for learners to customise their learning experience by allowing them to collaborate with peers and instructors, and receive timely feedback and support. By incorporating technology-mediated activities, such as online discussions, simulations, and multimedia resources, into traditional classrooms, the teacher can also help learners overcome potential barriers related to their individual differences, and better target their learning styles by incorporating a variety of in-person and online materials and activities. Moreover, the use of adaptive learning technologies and data analytics can enable instructors to tailor instruction to individual learners' needs, track their progress, and provide targeted interventions for each learner.

Biglin (2013) claimed that integrating face-to-face and online learning environments into a single course offers a unique opportunity to leverage the strengths of each medium while

simultaneously accommodating different learning styles and the individual needs of students. In the same vein, Allan (2007) suggested that BL presents an opportunity to integrate and utilise the strengths of various learning modes, allowing for the creation of tailored educational programmes that can effectively cater to the unique time, space, and technological needs of a specific group of students or end-users. She also emphasises the importance to strive for variety when designing a BL course, since the incorporation of multiple learning styles can increase engagement and enhance the learning experience by appealing to as many learners as possible.

Thorne (2003) claimed that BL represents a very genuine step toward changing things up and offers educational institutions, businesses, and corporations a chance to develop their working practices and their learning environments by catering to different learning styles. For example, many learners prefer what Kolb calls "active experimentation", or hands-on learning, while others enjoy speaking with peers who may help them explore their thoughts further, adding to or changing particular aspects of their overall vision. This represents the preferred method of learning for many individuals, who favour collaborative learning over expert instruction.

Thorne (2003) also asserted that when it comes to BL, one size does not fit all. Each learner is a unique individual with their own set of strengths and weaknesses, preferences and aversions. Recognising these differences is vital to creating effective learning solutions that meet each person's needs. These differences can be very subtle, and they can shape the way someone approaches learning. Avoiding broad assumptions and embracing instead each learner's unique qualities allow to create a learning experience that is tailored to learners' styles and that leads to their growth. Besides, BL provides a platform for learners to identify their starting point and collaboratively construct a self-portrait that serves as the foundation for an approach to learning which is personalised to their own learning style, as unique as their own

fingerprints. By supplementing this approach with targeted and focused coaching, learning can be transformed into a singular, exceptional experience.

Thorne (2003) also believed that learning is an ever-evolving process which requires an adaptive approach to match the learning styles of individual learners, and that BL is a powerful tool that can help us accomplish exactly that. Rather than getting caught up in debates about the superiority of one approach over another, we should embrace the opportunities presented by BL to challenge our assumptions and create a dynamic, customised learning experience for every learner.

1.2 Learning Styles

1.2.1 Definition of Learning Styles

Each individual has a set of intrinsic features making up learning styles which influence how they learn or comprehend new knowledge (Reid, 1995). Reiff (1992) attributed this influence to individual biological and psychological variances, and by consequence, people learn differently and at varying rates. In addition, Drago and Wagner (2004) emphasised the point that taking learners' different learning styles into account meets their individual needs, and makes the learning process easier and more interesting for them.

Reid (1995) defined learning styles as "an individual's natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills" (p. viii). In the same vein, Pritchard (2008, p. 41) defined them as:

- A particular way in which an individual learns
- A mode of learning – an individual's preferred or best manner(s) in which to think, process information and demonstrate learning
- An individual's preferred means of acquiring knowledge and skills
- Habits, strategies, or regular mental behaviours concerning learning, particularly deliberate educational learning, that an individual displays.

Unlike aptitudes and abilities, learning styles are not innate capacities that categorise gifted learners. Rather, they are personal preferences that an individual focuses on to have a successful learning process. Having a preferred style does not mean that individuals fail to use other styles, one can be successful in every style position, only in a different way (Dörnyei, 2005).

1.2.2 Models of Learning Styles

According to Dörnyei (2005), the question "why are learning styles difficult to measure?" can be answered in at least two ways. First, there are a few tools that seem to do a

pretty good job, such as Kolb's Learning Style Inventory (LSI), and the VARK questionnaire. Second, some of the most important and relevant human constructs are those that are currently neither interesting nor measurable to the "authorities". In other words, learning styles are valid and important psychological concepts, but a suitable measurement methodology to capture them may not have been developed yet. For instance, in the history of physics, we find several examples where a theory was established long before proper measurements or tools to test it were developed. Therefore, it is essential to account for some of the most prominent learning style models, ensuring a varied perspective on the topic at hand.

1.2.2.1 Kolb's Model

According to Dörnyei (2005), Kolb's model of learning styles is a popular theory that is widely endorsed by researchers and practitioners. It is also accompanied by a measuring instrument which is called 'Learning Style Inventory' (LSI). This model is founded on two dimensions: concrete versus abstract thinking and active versus reflective information processing. A preference for concrete thinking emphasises personal involvement in experiences and dealing with immediate human situations while prioritising feeling over thinking. In contrast, a preference for abstract conceptualisation highlights the use of logic, ideas, and concepts while prioritising thinking over feeling. A preference for active experimentation focuses on actively influencing people and changing situations and stresses practical applications over reflective understanding. On the other hand, a preference for reflective observation emphasises understanding the meaning of ideas and situations through careful observation and impartial description and emphasises understanding over practical application. By combining these two style continuums, four fundamental learner types, or learning style patterns, emerge:

- Divergers (concrete & reflective): Individuals labelled as "divergers" show preference for situations that require the generation of ideas, such as

brainstorming sessions. However, this preference does not necessarily imply that they are abstract thinkers. Instead, they are individuals who learn best through concrete experiences and reflect on concrete situations from multiple perspectives. They possess a strong interest in people and often display emotional intelligence in their interactions. Furthermore, they demonstrate broad cultural interests, often with a focus on the arts. In educational settings, these individuals tend to favour group work.

- Convergers (abstract & active): Individuals who possess a converging thinking style excel in generating novel ideas and theories. Despite their inclination towards abstract thinking, they are not detached from reality, as they value active experimentation to identify practical applications for their concepts. They are highly adept at solving specific problems, particularly technical tasks, as opposed to interpersonal or social challenges. In formal learning environments, individuals with this style tend to gravitate towards experiments, simulations, laboratory assignments, and practical applications.
- Assimilators (abstract & reflective): Individuals who possess an assimilating learning style tend to be abstract thinkers who specialise in comprehending various observations in a reflective manner. Unlike convergers, who enjoy generating ideas and subsequently putting them to the test, assimilators take pleasure in understanding a broad range of information and synthesising it into a concise and coherent form. They embody the archetype of the ‘aloof academic’ as they prioritise the logical soundness of a theory over its practical value and have a greater affinity for abstract concepts than people.
- Accommodators (concrete & active): Individuals who possess the accommodator learning style are characterised by their preference for tangible

> experiences and active experimentation, as well as their tendency to embrace challenging situations and occasionally take risks. They often rely on their intuition rather than analytical thinking, and are frequently observed to pursue careers in action-oriented fields like marketing or sales. In structured learning environments, they tend to collaborate with peers on hands-on projects and thrive in fieldwork scenarios.

As we take a look at Kolb's four learning styles, we find that one can have all of them. This can be related to two main issues. First, one can have and apply a combination of the four learning styles to one extent or another. Second, people might read the description of one learning type and focus on the characteristics that suit them, but in reality, the style may not match their way of learning. Hence, learning styles need to be identified through measurable instruments and tests and not just by matching learning styles descriptions with our self-image.

The original LSI instrument is a questionnaire which consists of a nine items self-description. For each item, the respondents are asked to rank four words that best describe their learning style. One word in each item corresponded to one of the four learning modes. For example, "feeling" corresponds to concrete experience, reflective observation (watching), abstract conceptualisation (thinking), and active experimentation (doing).

However, the original Kolb learning inventory faced a lot of criticism because of some issues of reliability and validity. In 1985, Kolb and his colleagues revised the LSI and improved its psychometric properties (Lu et al., 2007).

Upon conducting an analysis of the revised LSI, Veres et al. (1991) observed a notable increase in result stability. Based on their findings, they argued that this revised version holds potential utility for researchers, educators and practitioners.

Another study by Raschick et al. (1998), found that the revised LSI proved to be an effective instrument in enhancing the relationship between supervisors and students. Its

utilization facilitated the incorporation of a comprehensive four-stage learning process involving experiential engagement, reflection, conceptualisation, and creative experimentation by both parties. As a result of the favourable outcomes, LSI garnered widespread acceptance as a valuable tool in this learning style studies.

1.2.2.2 Honey and Mumford's Model

Honey and Mumford (2000) defined learning styles as "attitudes and behaviours that determine an individual's preferred way of learning" (p. 4). They identified four distinct learning styles, each characterised by a unique set of cognitive and behavioural tendencies. 'Activist' learners favour a hands-on approach and learn primarily through experience, while 'Reflectors' prefer to observe and reflect upon their experiences. 'Theorists' enjoy exploring associations and interrelationships between concepts, while 'Pragmatists' value practical outcomes and learn through trial-and-error (Romanelli et al., 2009).

Romanelli et al. (2009) explained that Honey and Mumford developed an alternative instrument known as the Learning Style Questionnaire (LSQ), which improved validity and predictive accuracy compared to Kolb's LSI. However, this instrument has been more widely used and studied in management and business settings. Therefore, its applicability to academic settings has been questioned (Romanelli et al., 2009).

1.2.2.3 The VARK Model

Among the many dimensions of learning styles, the most widely recognised by language teachers and learners alike is perhaps the categorisation of sensory preferences into visual, auditory, kinaesthetic, and occasionally tactile types. This dimension focuses on the perceptual modes or learning channels through which students process information. A popular typology for this physiological dimension is 'VARK' (Dörnyei, 2005).

Pritchard (2008), Drago and Wagner (2004), and Dörnyei (2005) defined the following learning styles:

- Visual learners: they “have good visual recall and prefer information to be presented visually, in the form of diagrams, graphs, maps, posters and displays, for example. They often use hand movements when describing or recalling events or objects” (Pritchard, 2008, p. 44; Dörnyei, 2005, p. 140).
- Auditory learners: they “have good auditory memory and benefit from discussions, lectures, interviewing, hearing stories and audio tapes; for example, they like sequence, repetition and summary” (Pritchard, 2008, p. 44; Dörnyei, 2005, p. 140).
- Read/write: they like to take notes. “They do best by taking notes during a lecture or reading difficult material. They often draw things to remember them. They do well with hands-on projects or tasks” (Drago & Wagner, 2004, p. 3).
- Kinaesthetic learners: they “prefer to learn by doing. They are good at recalling events and associate feelings or physical experiences with memory. They enjoy physical activity, field trips, manipulating objects and other practical, first-hand experience” (Pritchard, 2008, p. 45; Dörnyei, 2005, p. 140).

While many learners utilise a combination of sensory preferences, Kinsella (1995) suggested that individuals tend to display slight preferences or "modality strengths" for particular modes of learning. For instance, successful students may incorporate both visual and auditory input into their learning strategies, but may lean slightly toward one mode or the other. As learners progress through their education, those with mixed modality strengths have a greater likelihood of achieving success compared to those with a single modality strength. This is because they are better equipped to process and retain information, regardless of the mode in which it is presented.

1.2.3 Blended Learning and Learning Styles at the Interface

Accommodating different learning styles is critical when designing BL courses. By catering to the learning preferences of the students, teachers can ensure that the course materials are engaging and effective for all learners. One approach to accommodating different learning styles in BL is to offer a variety of both in-person, and online materials that appeal to different learning styles. Another approach is to provide learners with choices in how they engage with course materials. For example, students can choose to read an article, watch a video, or participate in a discussion forum. This approach allows learners to engage with course materials in the way that is most effective for them.

One empirical study by Cheng and Chau (2016) aimed to investigate the relationship between students' learning styles and their online participation in a blended learning course. In addition, it aimed to explore the correlation between students' online participation and their learning achievement and course satisfaction. The findings revealed a significant association between students' learning styles and online participation, as well as a significant relationship between online participation and students' learning achievement and course satisfaction. The study emphasises the importance of individual constructivism and social interaction for effective online learning, as well as the crucial role of learning styles in online participation.

Another study by Ora et al. (2018) investigated the perception of BL and students' learning styles. In particular, the research examined how students' perception of BL varies according to their learning styles. The results indicated that most students had a visual learning style and had a positive perception of hybrid learning. Additionally, the statistical analysis revealed an insignificant correlation between learning styles and perception of BL. These findings suggest that BL is a promising teaching method that can accommodate different learning styles and enhance the learning experience.

The relationship between blended learning and learning styles is an important area of research in language teaching. By accommodating different learning styles, teachers can create engaging and effective BL experiences that meet the diverse needs of learners. Some practices for accommodating different learning styles include providing a variety of in-person and online materials, offering choices in how learners engage with course materials, and monitoring the effectiveness of the approach.

1.2.4 Learning Styles-Based Activities

The previous chapters have dealt with a variety of language learning activities, as well as some learning style models. To synthesise, it seems to the authors that these activities fit well with some of the learning styles already discussed. For example:

- Reading authentic texts (books, newspapers, articles): This activity seems to primarily targets the visual and read/write styles. Visual learners may benefit from seeing words and texts in written form, allowing them to process and remember information more effectively. As for, read/write learners, they seem to prefer to engage with language through reading and writing activities. Reading authentic texts provides exposure to vocabulary, grammar structures, and language usage, while catering to both of these styles at the same time.
- Watching videos or films in the target language: This activity seems to target the visual and auditory styles. Visual learners may benefit from the visual cues and context provided by videos or films, helping them understand and retain language content. Auditory learners, on the other hand, may benefit from listening to the spoken language and capturing the nuances of pronunciation, intonation, and rhythm.
- Listening to audio recordings or podcasts: This activity seems to primarily targets the auditory style. Audio recordings and podcasts provide exposure to

native or fluent speakers, allowing learners to improve their listening comprehension, pronunciation, and overall language skills.

- Engaging in group discussions or conversation exchanges: This activity seems to target the auditory and kinaesthetic styles. Auditory learners may benefit from the verbal interactions and discussions that occur during group conversations. They can practice listening and speaking skills, while also improving their overall language through dialogue. Kinaesthetic learners, who learn best through hands-on experiences, can benefit from the physical act of engaging in conversations, and using gestures or body language to express meaning.
- Role-playing or acting out dialogues: This activity seems to primarily targets the Kinaesthetic style. Kinaesthetic learners prefer to learn through movement and physical experiences. Role-playing allows them to actively participate in the language learning process, practicing communication skills, and embodying different roles or scenarios to enhance language understanding and fluency.
- Completing grammar exercises or worksheets: This activity seems to target the read/write style. Read/write learners prefer to engage with language through written materials. Grammar exercises and worksheets provide the learners with opportunities to analyse, apply, and practice language rules and structures, reinforcing their understanding of grammar concepts.
- Using flashcards or visual aids to learn vocabulary: This activity seems to target the visual style. Visual learners benefit from visual stimuli and imagery. Flashcards and visual aids provide a visual representation of vocabulary words, making it easier for visual learners to associate meaning with visual cues.
- Participating in language games or puzzles: This activity seems to target the kinaesthetic and visual styles. Kinaesthetic learners can engage in physical

language games that involve movement and gestures. While visual learners can benefit from language puzzles or games that rely on visual patterns, images, or spatial awareness.

- Practicing pronunciation through drilling or mimicry: This activity seems to target the auditory style. Auditory learners benefit from listening and mimicking sounds, intonation, and pronunciation patterns.

Moreover, the research of Honey and Mumford (2000, p. 23) showed positive correlations between the following learning styles and activities:

- Activists respond positively to:
  - Action learning
  - Game simulations
  - Discussion in small groups
  - Role-playing
  - Training others
- Reflectors favour:
  - E-learning
  - Listening to lectures/presentations
  - Observing role-plays
  - Reading
  - Self-study/self-directed learning
- Theorists react better to:
  - Listening to lectures
  - Self-study/self-directed learning
  - Solo exercises
  - Watching videos

- Pragmatists prefer:
    - Action learning
    - Discussion in small groups
    - Group work
    - Problem-solving workshops
    - Project work

Conclusion

BL is a contemporary trend that is crucial to pedagogical research. It is a versatile method that makes use of both traditional and new technologies to bring out the best learning outcomes, enhance student engagement, promote greater language proficiency, and provide more flexibility for both learners and instructors. Moreover, the use of technology in BL can facilitate personalised learning experiences, allowing learners to work at their own pace and receive individualised feedback.

However, it is important to note that BL is not a one-size-fits-all approach, and instructors should consider the diverse needs and preferences of their learners when designing BL courses. Additionally, BL offers the opportunity for learners to engage with content in multiple ways, providing a range of activities that can appeal to a variety of learning styles. By allowing learners to interact with course materials in different ways, BL can facilitate a more personalised learning experience that aligns with individual learning styles. In addition, by making use of the strengths of BL and incorporating different teaching and learning strategies, instructors can create a more inclusive and effective learning environment that caters to a range of learning styles.

Each individual possesses a unique set of intrinsic features, referred to as learning styles, which influence how they comprehend and take in new knowledge. This influence can be attributed to biological and psychological differences, resulting in different learning rates

and styles. Furthermore, taking into account learners' distinct learning styles helps meet their individual needs and makes the learning process more enjoyable and less challenging. Measuring these learning styles is a challenging task. However, researchers have tried to develop some tools to measure them, such as Kolb's LSI, Honey and Mumford's LSQ.

All in all, it can be synthesised that in order to design effective BL courses, it is crucial to cater to the diverse learning styles of students. One way to achieve this is by offering a range of both in-person and online materials that appeal to different learning preferences, as well as providing learners with choices in how they engage with course materials. As empirical studies reviewed in this chapter reveal, there exists a significant correlation between students' learning styles and their participation, their learning achievement, and their course satisfaction.

Chapter 2: Testing the Relationship between Learning Styles and Preferred Blended Learning Activities

Introduction

In this chapter, the focus shifts from the literature review to the practical aspect of the research. The main objective is to provide a detailed description of the field work conducted to gather the necessary information for addressing the research questions and achieving the study's aims. This chapter is aimed at offering a thorough description of the most prominent elements that are related to the field work. This includes the reiteration of the central aims of the study, the participants and the data collection tools. One crucial aspect of this chapter is the presentation, analysis, and discussion of the students' questionnaire. This questionnaire serves as valuable sources of data to gain insights into the topic under investigation. The analysis and interpretation of the obtained findings from the questionnaire will be thoroughly discussed, highlighting any significant patterns or trends observed. Additionally, this chapter will address the major constraints and challenges encountered during the research process, which may have impacted the results or generalisability of the findings. Furthermore, based on the analysis and interpretation of the data, this chapter will provide suggestions for further research. These recommendations will offer potential directions for future studies to build upon the current research and explore any gaps or areas that require further investigation.

2.1 Aims of the Study

The present study attempts to investigate the relation between types of learners' learning styles and their preferred language learning activities in blended learning. It sets out to cluster the sample of students according to their VARK learning styles. Moreover, it attempts to associate the learning style clusters to which learners belong with their preferred in-person and/or online learning activities. Finally, it seeks to unveil the students' preferred type of instruction.

2.2 The Research Questions and Hypotheses

For reminder purposes, the main research questions of the present study are:

- Using the VARK Model, how do students cluster in terms of their learning styles?
- Is there an association between the preferred blended learning activity and learning style cluster to which learners belong?
- What is the students' preferred type of instruction?

In the light of the mentioned questions, we hypothesise that:

1. H_a: There is a significant association between the learners' learning style clusters and their learning activity preferences.

   H_0: There is a no association between the learners' learning style clusters and their learning activity preferences.

2.3 The Participants

The current study is conducted at the University Centre of Mila, Institute of Letters and Languages, Department of Foreign Languages. The population that this study is concerned with consists of students of English. In regards to the sample, it consists of Master 1 EFL students at Mila University Centre in the academic year 2022/2023. The population is made up of 206 students in total, who are divided into 5 groups; among them, 100 students who regularly attended their classes were selected to make up the research sample. The selection of Master 1 is based on the conception that such students are experienced in this specific setting, since they have already had Blended Learning courses, starting with the COVID-19 pandemic. In addition to that, Master 1 students are familiar with the concept of learning styles since they've dealt with it in their university courses.

2.4 Data Collection Tools and Statistical Tests

In order to accomplish the study's aims, a questionnaire was used as a data collection tool. It was administered to students to gather the necessary data for the study. Once the raw data from the questionnaire was collected, it was inputted into SPSS 26 in order to make all the statistical calculations needed to answer the questions of the present study. Specifically, SPSS 26 was used to cluster the respondents according to their learning styles using the answers from 'Section two: Type of Learning Style' (See Appendix A). Once the clusters were determined, a series of Chi-square tests were conducted to reveal whether there was an association between the preferred blended learning activities and learning style clusters to which learners belong. The null hypothesis and alternative hypothesis are as follows, respectively:

- H_a: There is a significant association between the learners' learning style clusters and their learning activity preferences.
- H_0: There is a no association between the learners' learning style clusters and their learning activity preferences.

2.4.1 The Students' Questionnaire

2.4.1.1 Description of the Students' Questionnaire

The students' questionnaire aims at exploring the relation between types of learners' learning styles and their preferred language learning activities in BL. The students are made aware of the importance of their responses, as well as the fact that they will only be used for the purpose of the study. Needless to say, in order to allow the participants to respond honestly and freely, they are informed that filling out the questionnaire is voluntary and anonymous.

The students' questionnaire consists of seventeen items which are close-ended, multiple choice questions, divided into four sections. The selection of seventeen items is intended to include only questions that provide answers which closely align with the aims of the research.

Additionally, this is done to ensure that the participants do not lose focus during answering due to the length of the questionnaire.

The first section is entitled “Background information”. It sheds light on the students, including their age range and gender.

The second section aims to categorise the respondents according to their learning style. It is a scale that contains a set of twelve 5-point Likert-scale statements, which are used to determine the students’ learning styles. This scale is adapted from the VARK Questionnaire (VARK-Learn, 2019). The first, fifth, and ninth items of the scale seek to determine the students’ inclination towards the read/write learning style. Following that, the second, sixth, and tenth items are dedicated to assess the tendency towards the auditory style. Next, the inclination towards the visual style is measured through the third, seventh, and eleventh items. Lastly, the fourth, eighth, and twelfth items assess kinaesthetic preferences.

The third section is entitled “The preferred blended (in-person + online) learning activity”, and it attempts to determine the preferred type of learning activity/activities of the participants. It is a multiple-choice question that contains fifteen activity choices, and the sixteenth option is ‘Other’, in case the respondents had other activity preferences not mentioned in the questionnaire.

The fourth and last section is entitled ‘Instruction type’, and it contains a short, single question which is designed to shed light on the learners’ preferred type of instruction, either in-person, online, or blended.

2.4.1.2 Administration of the Students’ Questionnaire

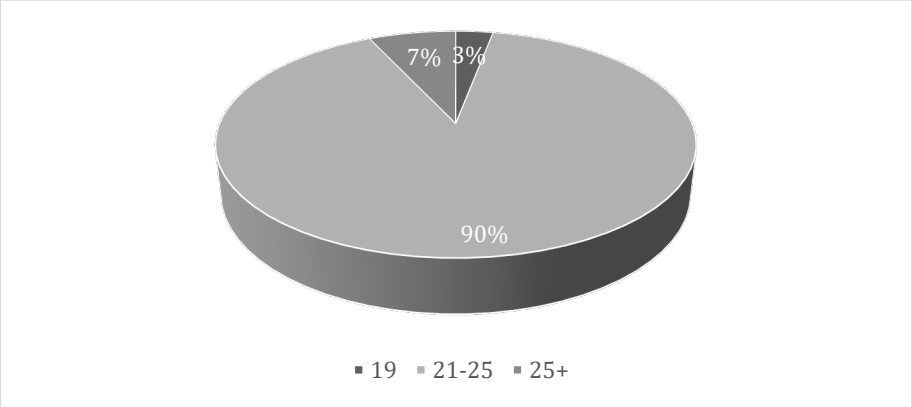
The questionnaire was administered to Master 1 EFL students at Mila University Centre during their normal lecture and TD sessions. The process of collecting data took about a week, between the 8th and the 14th of March, covering a sample number of 100 students.

2.4.1.3 Analysis of the Students' Questionnaire

2.4.1.3.1 Background Information

Q1. Age Range:

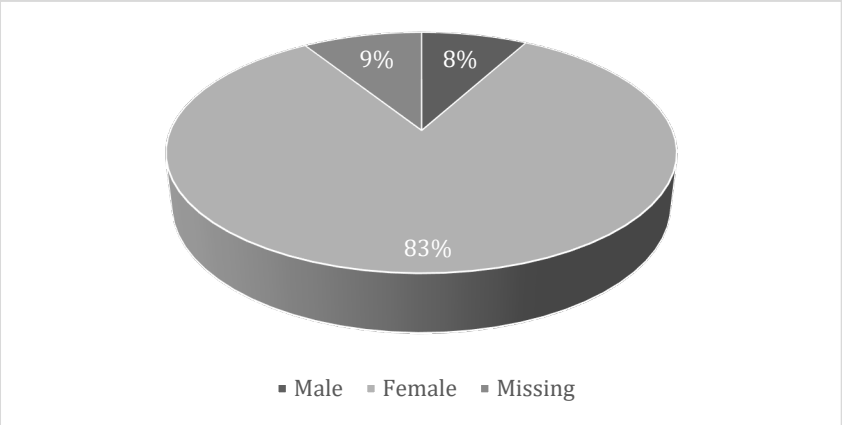
Figure 2. 1 The Students' Age Range



For the purpose of exploring some aspects of the students' background, this question was set to determine the participants' age range. Though background information did not have a direct relation to the aims of the study, it was thought that it might serve the curious reader. Figure 2.1 clearly showed that the majority of the students (90%) are aged between 21-25. This was because most of Master 1 students began schooling at the age of six, followed by five years in the primary school, four in the middle school, three in the secondary school, and three years at university. The rest of the participants, 7% constituting a minority, declared that they were over the age of 25, which suggests a repeated year somewhere along their schooling. Lastly, 3% of the participants constituted the exception of students who began schooling at five years of age.

Q2. Gender:

Figure 2. 2 The Students' Gender



As shown in table 2.2, the vast majority of students (83%) were female. On the other hand, only 8% of the respondents were male. The last 9% were participants who refrained from sharing information about their gender.

2.4.1.3.2 Type of Learning Style

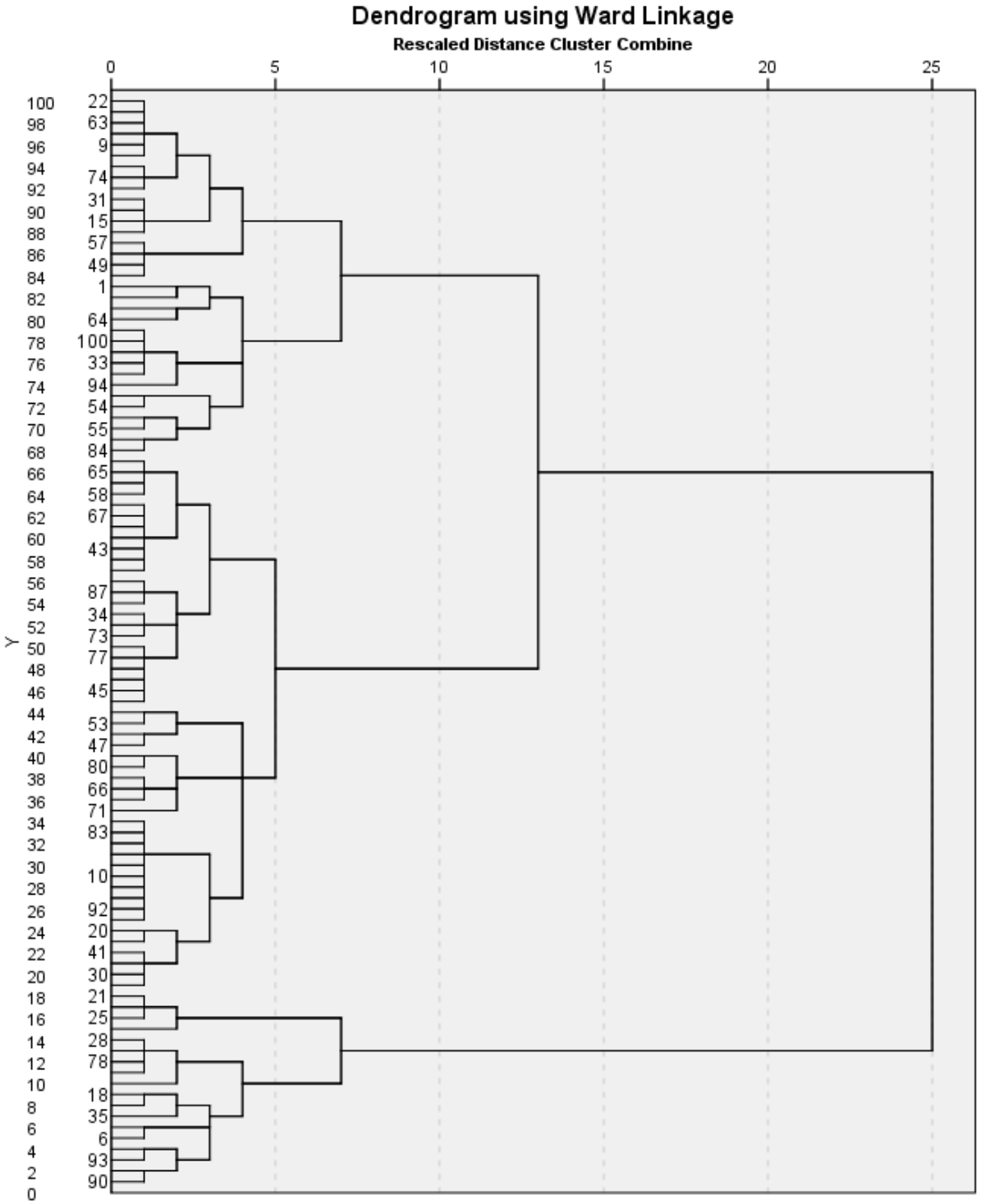
Q4. The following questions are designed to determine your learning style. For each item, circle the answer that suits you the most.

Key: 1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree.

In this question, the raw data from the responses was coded and inputted into SPSS 26. Next, a cluster analysis was performed using Ward's linkage method and the squared Euclidean distance measure. Ward's linkage method is one of several linkage criteria available in cluster analysis. It is often used because it aims to minimise the variance within clusters when merging them together. It is based on the idea of minimising the sum of squared differences between each observation and the centroid of its cluster. By minimising the variance within clusters, Ward's method tends to produce compact and relatively homogeneous clusters. It is particularly useful when the goal is to create well-defined clusters with similar sizes and low within-cluster variability (Ward, 1963). As for the squared Euclidean distance measure, it is a way to quantify the dissimilarity or similarity between two points in a dataset. It is calculated as the sum of the

squared differences between corresponding coordinates of the points. It is used because it discourages joining two clusters that have any cases some distance apart, even if most of the cases in the two clusters are near each other. Thus, producing relatively homogeneous clusters compared to other distance measures (Spencer, 2013). The number of solutions was set at 4 to avoid overly trivial or complex solutions, since the VARK model was the one adopted by this study. The software provided the following dendrogram (see Figure 2.4), which was used to extract the clusters. According to Everitt and Skrondal (2010), a dendrogram is a tree-like diagram that represents the hierarchical relationships between the clusters. It displays the sequence of cluster merges and the distances at which these merges occur. The horizontal axis of the dendrogram represents the distance or dissimilarity between clusters, while the vertical axis represents the individual data points or clusters. Dendrograms are used to visualize and interpret the clustering structure within a dataset. They provide a graphical representation of the clustering process, facilitating the identification of the optimal number of clusters by observing the height at which clusters merge. Dendrograms also help in understanding the relationships and similarities between different clusters and data points.

Figure 2. 3 Dendrogram Using Ward Linkage



The dendrogram represented the hierarchical structure of the clustering process and offered insights into the grouping patterns of the participants based on their answers in section two of the questionnaire. Upon careful examination of the dendrogram, it became evident that

at a distance of 6, participants can be categorised into four distinct clusters. SPSS also presented a table indicating the exact number of respondents in each cluster (see Table 2.2).

Table 2. 1 Cluster Size

Cluster	Whole Sample N (%)
Cluster 1	33 (33)
Cluster 2	14 (14)
Cluster 3	49 (49)
Cluster 4	4 (4)
Total	100(100)

Table 2.2 indicated that Cluster 1 comprised of 33 students, representing 33% of the entire sample. Cluster 2 consisted of 14 students, accounting for 14% of the sample, and Cluster 3 consisted of 49 students, making up the largest portion of the sample with 49%. Cluster 4, with only 4 students, formed the smallest cluster in the sample. Each cluster displayed unique characteristics or patterns that distinguished it from the other clusters. It is to these characteristics that we now shift our attention.

SPSS also provided a table of means for the responses of each variable in this section (see Table 2.3). Variables 3,7, and 11 denoted the visual style, 2,6, and 10 the auditory, 1,5,9 read/write, and 4,8,12 the kinaesthetic.

Table 2. 2 Composition of Clusters by Variable Means

Cluster	VM	VM	VM	VM	VM	VM	VM	VM	VM	VM	VM	VM
label	1	2	3	4	5	6	7	8	9	10	11	12

Cluster 1	2.87	4.21	3.84	3.42	3.15	3.69	3.09	3.36	3.51	3.69	3.09	3.69
Cluster 2	3.28	1.92	1.85	2.00	3.28	3.14	3.42	3.14	2.85	3.28	3.57	4.21
Cluster 3	3.85	4.08	3.91	4.57	4.06	3.93	3.65	4.22	4.42	3.97	4.36	4.77
Cluster 4	1.25	2.25	2.00	1.50	1.50	1.75	2.25	1.75	1.25	2.00	1.50	2.25

The means for each learning style were calculated from the individual variables of Table 2.3 (see Table 2.4). Since the responses were set to a Likert-scale from 1-5, anything below a mean of 3 was considered a weak inclination towards the learning style in question, anything above a mean of 3 was considered a moderate inclination, and anything closer to or above a mean of 4 was considered a strong inclination towards that learning style. Based upon the mean results, clusters 1 through 4 were assigned the following names:

Table 2. 3 Composition of Clusters by Learning Style Means

Cluster label	Visual Style Mean	Auditory Style Mean	Read/Write Style Mean	Kinaesthetic Style mean
Cluster 1: Moderate inclination to all styles	3.34	3.86	3.17	3.49
Cluster 2: MI: R+K, WI: V+A	2.94	2.78	3.13	3.11

Cluster 3: Strong inclination to all styles	3.97	3.99	4.11	4.52
Cluster 4: Weak inclination to all styles	1.91	2	1.33	1.83

Key: **MI**: Moderate inclination; **WI**: Weak inclination; **V+A**: to the visual and auditory styles; **R+K**: to the read/write and kinaesthetic styles; **VM**: Variable mean.

Table 2.4 indicated the following clusters:

- **Cluster 1**: (Moderate inclination to all styles) Reported a moderate inclination towards all styles, with a mean score of 3.34, 3.86, 3.17, and 3.49 to the visual, auditory, read/write, and kinaesthetic styles respectively.
- **Cluster 2**: (MI: R+K, WI: V+A) Reported a moderate inclination towards the read/write and kinaesthetic styles, with a mean score of 3.13 and 3.11 to each style respectively, as well as a weak inclination towards the visual and auditory styles, with a mean score of 2.94 and 2.78 to each style respectively.
- **Cluster 3**: (Strong inclination to all styles) Reported a strong inclination towards all styles, with a mean score of 3.97, 3.99, 4.11, and 4.52 to the visual, auditory, read/write, and kinaesthetic styles respectively.
- **Cluster 4**: (Weak inclination to all styles) Reported a weak inclination towards all styles, with a mean score of 1.91, 2, 1.33, and 1.83 to the visual, auditory, read/write, and kinaesthetic styles respectively.

2.4.1.3.3 The Preferred Blended (In-person + Online) Learning Activity

Q5. In a blended learning environment, which of the following is your preferred type of learning activity? (you can tick more than one).

Table 2. 4 The Preferred Blended Learning Activity Frequency Table

Options	Frequency	Percentage
Picture description or narration	42	42%
Watching podcasts or documentaries followed by listening comprehension	61	61%
Translation practice	30	30%
Online discussion forums or chat rooms	32	32%
In class role-playing (Drama and performances)	36	36%
Reading comprehension	34	34%
Interactive digital whiteboards for group presentations and collaboration	22	22%
Online audio recordings, podcasts, and audiobooks	54	54%
Online language learning apps and software with interactive images and graphics	40	40%
Online collaborative projects and activities with role-play scenarios	19	19%
Writing prompts and peer review activities using online platforms	6	6%
Interactive virtual language learning environments	23	23%
Online writing practice with grammar checkers	38	38%
Visualizing mind maps and concept maps	43	43%
Pronunciation drills	36	36%
Other	1	1%
Total	100	100%

In this multiple-choice question, the participants were given a set of sixteen activity choices to select from. Table 2.5 showed that ‘Watching podcasts or documentaries followed by listening comprehension’ and ‘Online audio recordings, podcasts, and audiobooks’ were the most selected out of the sixteen choices, with over half of the sample selecting them, 61% and 54% respectively. This showed that a large percentage of our sample appreciated the visual and

auditory stimuli while learning a language. On the other hand, ‘Writing prompts and peer review activities using online platforms’ was the least selected out of the suggested activities, with only 6% of the participants choosing it. This indicated that a very small percentage of our sample had an inclination towards writing activities. Lastly, only one person has chosen the ‘Others’ option, and indicated that they like ‘using real examples’. In addition to these notable trends, it was apparent that a substantial proportion of the sample demonstrated a preference for interactive and technology-based learning approaches. Activities such as 'Online discussion forums or chat rooms' and 'Online collaborative projects and activities with role-play scenarios' were selected by 32% and 19% of the participants, respectively. This highlighted the appeal of online platforms for fostering interaction, communication, and collaboration in language learning. Furthermore, the inclusion of multimedia elements in language learning was evident through the preferences for activities such as 'Picture description or narration' (42%) and 'Visualising mind maps and concept maps' (43%). These findings indicated the potential benefits of incorporating visual stimuli to facilitate understanding and retention of language concepts. Interestingly, the 'Translation practice' option received a response rate of 30%. The relatively moderate selection of this activity suggested that while translation remained relevant to some learners, it may not have been as dominant as other contemporary approaches in the sample.

In order to assess bivariable associations between activity preferences and the previous four clusters, a Chi-square test was conducted using SPSS 26. The chi-square test tables that were outputted for each of the sixteen activity choices in this section are shown below.

Q5.1. Picture description or narration

Table 2. 5 Picture description or narration Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.913[a]	3	.591
Likelihood Ratio	1.921	3	.589
Linear-by-Linear Association	.051	1	.821
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.68.

Table 2.7 showed that the calculated chi-square statistic was χ^2=1.91 with 3 degrees of freedom (df), resulting in an associated p-value of 0.59. Comparing the obtained p-value of 0.59 to the conventional significance level of 0.05, we found that the p-value is greater than the significance level. This meant that the observed data did not provide enough evidence to support the presence of a meaningful association between the clusters and activity of 'Picture description or narration'. Given that the p-value was greater than the conventional significance level of 0.05, we failed to reject the null hypothesis.

Q5.2. Watching podcasts or documentaries followed by listening comprehension.

Table 2. 6 Watching podcasts or documentaries followed by listening comprehension Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.755[a]	3	.124
Likelihood Ratio	5.782	3	.123
Linear-by-Linear Association	1.296	1	.255

N of Valid Cases	100

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.56.

Table 2.9 showed that the chi-square test revealed a calculated chi-square statistic χ^2=5.75 with 3 degrees of freedom (df). The associated p-value was found to be 0.12. Comparing the obtained p-value of 0.12 to the conventional significance level of 0.05, we observed that the p-value was greater than the significance level. As such, the results suggested that there was no statistically significant relationship between the clusters and the activity of 'Watching podcasts or documentaries followed by listening comprehension'. Hence, based on the available data, we failed to reject the null hypothesis.

Q5.3. Translation practice.

Table 2. 7 Translation practice Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.584[a]	3	.205
Likelihood Ratio	5.507	3	.138
Linear-by-Linear Association	.166	1	.684
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 1.20.

Table 2.11 indicated that the chi-square test yielded a calculated chi-square statistic χ^2=4.58 with 3 degrees of freedom (df). The corresponding p-value obtained was 0.20. In evaluating the relationship between the clusters and the 'Translation practice' activity, we compared the p-value of 0.20 to the conventional significance level of 0.05. Notably, the

obtained p-value exceeded the significance level, indicating a lack of statistical significance. Consequently, we failed to reject the null hypothesis.

Q5.4. Online discussion forums or chat rooms.

Table 2. 8 Online discussion forums or chat rooms Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.202[a]	3	.977
Likelihood Ratio	.208	3	.976
Linear-by-Linear Association	.023	1	.880
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 1.28.

Table 2.13 showed that the chi-square test produced a calculated chi-square statistic χ^2=0.20 with 3 degrees of freedom (df). The resulting p-value was determined to be 0.97. To assess the relationship between the clusters and the 'Online discussion forums or chat rooms' activity, we compared the obtained p-value of 0.97 to the conventional significance level of 0.05. Notably, the p-value substantially exceeded the significance level, suggesting a lack of statistical significance. Thus, we failed to reject the null hypothesis.

Q5.5. In class role-playing (Drama and performances).

Table 2. 9 In class role-playing (Drama and performances) Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.602[a]	3	.457

Likelihood Ratio	2.702	3	.440
Linear-by-Linear Association	.526	1	.468
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.44.

Table 2.15 showed that the chi-square test revealed a calculated chi-square statistic χ^2=2.60 with 3 degrees of freedom (df). The associated p-value obtained was 0.45. In scrutinising the relationship between the clusters and the activity of 'In class role-playing (Drama and performances)', we compared the p-value of 0.45 to the conventional significance level of 0.05. Notably, the p-value exceeded the significance level, indicating a lack of statistical significance. Consequently, we failed to reject the null hypothesis.

Q5.6. Reading comprehension.

Table 2. 10 Reading comprehension Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.027[a]	3	.795
Likelihood Ratio	1.034	3	.793
Linear-by-Linear Association	.386	1	.535
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 1.36.

Table 2.17 revealed that the chi-square test yielded a calculated chi-square statistic χ^2=1.02 with 3 degrees of freedom (df). The associated p-value was determined to be 0.79. In assessing the relationship between the clusters and the activity of 'Reading comprehension', we compared the obtained p-value of 0.79 to the conventional significance level of 0.05.

Notably, the p-value considerably exceeded the significance level, indicating a lack of statistical significance. As a result, we failed to reject the null hypothesis.

Q5.7. Interactive digital whiteboards for group presentations and collaboration.

Table 2. 11 Interactive digital whiteboards for group presentations and collaboration Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.817[a]	3	.282
Likelihood Ratio	3.973	3	.264
Linear-by-Linear Association	.866	1	.352
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .88.

Table 2.19 showed that the chi-square test revealed a calculated chi-square statistic χ^2=3.81 with 3 degrees of freedom (df). The corresponding p-value obtained was 0.28. To examine the relationship between the clusters and the activity of 'Interactive digital whiteboards for group presentations and collaboration', we compared the obtained p-value of 0.28 to the conventional significance level of 0.05. Notably, the p-value exceeded the significance level, suggesting a lack of statistical significance. Hence, we failed to reject the null hypothesis.

Q5.8. Online audio recordings, podcasts, and audiobooks.

Table 2. 12 Online audio recordings, podcasts, and audiobooks Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)

Pearson Chi-Square	1.438[a]	3	.697
Likelihood Ratio	1.477	3	.688
Linear-by-Linear Association	.166	1	.684
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.84.

Table 2.21 revealed that the chi-square analysis resulted in a calculated chi-square statistic χ^2=1.43 with 3 degrees of freedom (df). The associated p-value obtained was 0.69. In evaluating the relationship between the clusters and the activity of 'Online audio recordings, podcasts, and audiobooks', we compared the obtained p-value of 0.69 to the conventional significance level of 0.05. Remarkably, the p-value exceeded the significance level, indicating a lack of statistical significance. Consequently, we failed to reject the null hypothesis.

Q5.9. Online language learning apps and software with interactive images and graphics.

Table 2. 13 Online language learning apps and software with interactive images and graphics Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.654[a]	3	.884
Likelihood Ratio	.678	3	.878
Linear-by-Linear Association	.007	1	.933
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.60.

Table 2.23 showed that the chi-square test revealed a calculated chi-square statistic χ^2=0.65 with 3 degrees of freedom (df). The associated p-value obtained was 0.88. In examining the relationship between the clusters and the activity of 'Online language learning apps and software with interactive images and graphics', we compared the obtained p-value of 0.88 to the conventional significance level of 0.05. Notably, the p-value exceeded the significance level, suggesting a lack of statistical significance. Thus, we failed to reject the null hypothesis.

Q5.10. Online collaborative projects and activities with role-play scenarios.

Table 2. 14 Online collaborative projects and activities with role-play scenarios Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.193[a]	3	.241
Likelihood Ratio	3.957	3	.266
Linear-by-Linear Association	.884	1	.347
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .76.

Table 2.25 revealed that the chi-square test resulted in a calculated chi-square statistic χ^2=4.19 with 3 degrees of freedom (df). The associated p-value obtained was 0.24. To assess the relationship between the clusters and the activity of 'Online collaborative projects and activities with role-play scenarios', we compared the obtained p-value of 0.24 to the

conventional significance level of 0.05. Notably, the p-value exceeded the significance level, indicating a lack of statistical significance. Consequently, we failed to reject the null hypothesis.

Q5.11. Writing prompts and peer review activities using online platforms.

Table 2. 15 Writing prompts and peer review activities using online platforms Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.333[a]	3	.228
Likelihood Ratio	4.077	3	.253
Linear-by-Linear Association	.037	1	.848
N of Valid Cases	100		

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .24.

Table 2.27 showed that the chi-square test revealed a calculated chi-square statistic χ^2=4.33 with 3 degrees of freedom (df). The associated p-value obtained was 0.22. In evaluating the relationship between the clusters and the activity of 'Writing prompts and peer review activities using online platforms', we compared the obtained p-value of 0.22 to the conventional significance level of 0.05. Notably, the p-value exceeded the significance level, suggesting a lack of statistical significance. Therefore, we failed to reject the null hypothesis.

Q5.12. Interactive virtual language learning environments.

Table 2. 16 Interactive virtual language learning environments Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.541[a]	3	.468
Likelihood Ratio	3.312	3	.346
Linear-by-Linear Association	.140	1	.708
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .92.

Table 2.29 revealed the results of the chi-square test conducted to examine the relationship between learning style clusters and the learning activity of interactive virtual language learning environments. The calculated chi-square statistic was χ^2=2.54 with 3 degrees of freedom (df). The associated p-value for this test was found to be 0.46. Comparing the obtained p-value of 0.46 to the conventional significance level of 0.05, we observed that it exceeded the threshold. Therefore, we failed to reject the null hypothesis at the 0.05 level of significance, indicating that there was no statistically significant association between learning style clusters and the preference for interactive virtual language learning environments.

Q5.13. Online writing practice with grammar checkers.

Table 2. 17 Online writing practice with grammar checkers Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.114[a]	3	.774

Likelihood Ratio	1.130	3	.770
Linear-by-Linear Association	.378	1	.539
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.52.

Table 2.31 displayed the outcomes of the chi-square test conducted to examine the relationship between learning style clusters and the learning activity of online writing practice with grammar checkers. The calculated chi-square statistic was χ^2=1.11, and the degrees of freedom (df) were 3. The associated p-value for this test was found to be 0.77. Comparing the obtained p-value of 0.77 to the conventional significance level of 0.05, we found that it was greater than the threshold. Consequently, we failed to reject the null hypothesis at the 0.05 level of significance, indicating that there was no statistically significant association between learning style clusters and the preference for online writing practice with grammar checkers.

Q5.14. Visualising mind maps and concept maps.

Table 2. 18 Visualising mind maps and concept maps Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.147[a]	3	.766
Likelihood Ratio	1.183	3	.757
Linear-by-Linear Association	.020	1	.887
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.72.

Table 2.33 presented the results of the chi-square test conducted to investigate the relationship between learning style clusters and the learning activity of visualizing mind maps and concept maps. The calculated chi-square statistic was χ^2=1.14, with 3 degrees of freedom (df). The associated p-value for this test was found to be 0.76. Upon comparing the obtained p-value of 0.76 to the conventional significance level of 0.05, we observed that it exceeded the threshold. Therefore, at the 0.05 level of significance, we failed to reject the null hypothesis, indicating that there was no statistically significant association between learning style clusters and the preference for visualizing mind maps and concept maps.

Q5.15. Pronunciation drills.

Table 2. 19 Pronunciation drills Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.395[a]	3	.335
Likelihood Ratio	3.352	3	.341
Linear-by-Linear Association	2.719	1	.099
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.44.

Table 2.35 showed the results of the chi-square test conducted to examine the relationship between learning style clusters and the learning activity of pronunciation drills. The calculated chi-square statistic for this test was χ^2=3.39, with 3 degrees of freedom (df). The associated p-value was determined to be 0.33. Comparing the obtained p-value of 0.33 to the conventional significance level of 0.05, we found that it exceeded the threshold. Therefore, at the 0.05 level of significance, we did not have sufficient evidence to reject the null hypothesis.

This implied that there is no statistically significant association between learning style clusters and the preference for pronunciation drills.

Q5.16. Others.

Table 2. 20 Others Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.051[a]	3	.789
Likelihood Ratio	1.437	3	.697
N of Valid Cases	100		

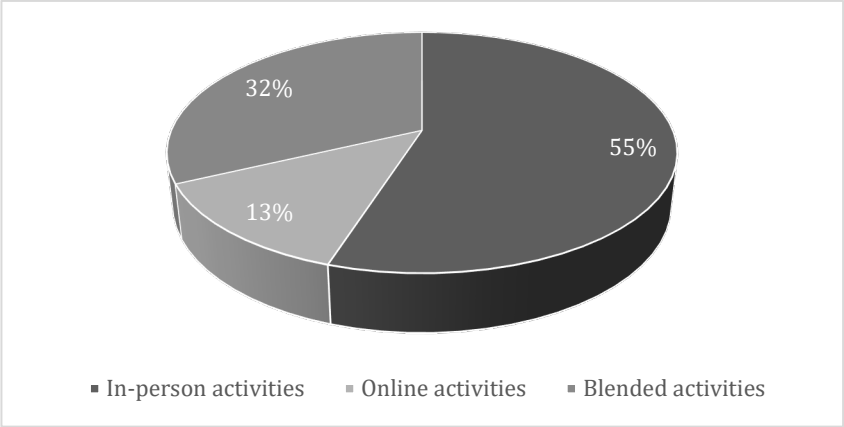
a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .04.

Table 2.37 revealed the results of the chi-square test conducted to examine the relationship between learning style clusters and the learning activity categorized as "Others." The calculated chi-square statistic for this test was χ^2=1.05, with 3 degrees of freedom (df). The associated p-value obtained was 0.78. Upon comparing the obtained p-value of 0.78 to the conventional significance level of 0.05, we observed that it exceeded the threshold. Therefore, at the 0.05 level of significance, we failed to reject the null hypothesis, indicating that there is no statistically significant association between learning style clusters and the preference for the "Other" learning activities.

2.4.1.3.4 Instruction Type

Q6. Which do you prefer the most?

Figure 2. 4 The Students' Instruction Type Preference



As shown in Figure 2.5, over half of the respondents (55%) preferred in-person learning over other types of instruction. This sub-group represented students who were not interested in any form of online or blended learning, and preferred the traditional style of instruction. This was followed by 32% of the participants preferring a blended type of instruction. This sub-group may have represented students who were willing to stay up to date in terms of technology use in learning, while not yet ready to completely give up face-to-face sessions. Lastly, a minority of 13% of the sample preferred a strictly online type of instruction. This choice may be attributed to the students' inclination to take courses that allowed them to always stay up to date with the latest technological developments in teaching, as well as the ability to have more independence from the teacher during the learning process.

2.4.1.4 Discussion of the Main Findings

The analysis of the students' questionnaire provided an opportunity to gain valuable insights into the learning activities preferences of students in the language classroom, specifically in relation to their learning styles. In this study, a sample of 100 students was subjected to a cluster analysis based on their learning styles using SPSS 26, resulting in the identification of four distinct patterns. These clusters were characterised in terms of strong or weak inclinations towards all four VARK model styles based on their means (see Table 2.4). The first cluster reported a moderate inclination towards all styles. The second cluster indicated

a moderate inclination towards the read/write and kinaesthetic styles, as well as a weak inclination towards the visual and auditory styles. The third cluster showed a strong inclination towards all styles. The fourth one reported a weak inclination towards all styles. This result indicated that learners manifest the four learning style types to differing degrees.

Surprisingly, despite representing different patterns of learning styles, the chi-square tests revealed that all four clusters did not show any statistically significant association with any specific type of learning activity. This intriguing finding challenged the widely held assumption that students' preferred language learning activities were directly related to their learning styles. In other words, the students' subjective perception of their preferred language learning activities was found to be completely independent from their learning styles. Additionally, over half of the population indicated an inclination towards activities that involve visual and auditory stimuli, while very little of them indicated an inclination towards online writing activities (see table 2.5).

In addition, according to the findings of the study, it was revealed that the over half (55%) of the participants expressed a preference for in-person learning over online or blended learning. While almost a third (32%) of the participants preferred blended learning. This result highlighted the students' recognition and acceptance of the benefits associated with a combination of online and in-person activities in language learning settings.

Prior to reporting a number of implications and recommendations, it is only fitting to provide answers to the research questions raised in the present study. In regard of the question about how students cluster in terms of their learning styles, it was evident that students manifest the four learning style types (visual, auditory, read/write, and kinaesthetic) to differing degrees. As an answer to the research question about the existence of an association between the preferred blended learning activity and learning style cluster to which learners belong, despite the initial assumption that learners' preferred activities would align with their identified

learning style, the findings of the study revealed that there is no significant relationship between them. Concerning the research question about the students' preferred type of instruction, it was found that the students preferred in-person instruction over online or blended instruction.

2.5 Limitations, Implications, and Recommendations

2.5.1 Limitations of the Study

In the course of carrying out the present study, several difficulties were confronted. The most prominent of these is the problem encountered in the process of collecting the data needed for the practical part of the research. Due to the fact that a large percentage of Master 1 students have jobs, their attendance rate was quite low, thus making it harder to get hold of students and limiting the number that could participate.

2.5.2 Implications of the Study

Considering the major findings elicited from the questionnaire administered to the students, the current research should bring about significant implications for theory and practice.

The main findings of the present study suggest that students' learning styles and their activity preferences are not necessarily always related. Thus, simply tailoring learning activities based on students' reported learning styles may not automatically lead to more effective language learning outcomes. While it is still crucial to consider students' individual preferences and provide a diverse range of activities in the language classroom, it is equally important to recognise that learning styles alone may not be the sole determining factor in shaping these preferences.

2.5.3 Recommendations for Pedagogy and Research

It is of crucial importance to advance a set of recommendations that touch upon pedagogy and further research. This is meant to help teachers with the issue of content and

material selection in BL settings. In the same line, researchers who might share the same interest with the present study are presented with some recommendations for future research.

2.5.3.1 Recommendations for Teachers

Based on the findings of this study, several recommendations can be made for language teachers to enhance their instructional practices in light of the complex relationship between learning styles and learning activities. First, it is recommended that educators recognise that students' self-reported learning styles may not directly align with their preferred language learning activities. Therefore, teachers are recommended to adopt a diversified approach that encompasses a variety of activities to cater to different learning preferences and engage students effectively. By offering a range of activities that incorporate visual, auditory, reading/writing, and kinaesthetic elements, teachers can create an inclusive learning environment that accommodates diverse learning styles and maximises student engagement. Additionally, differentiated instruction offers students a chance to learn through various methods; therefore, catering to wider range of their needs, and making the most out of their potential in learning.

Secondly, educators are recommended to encourage students to reflect on their own learning experiences and provide feedback regarding their preferences for specific activities. This can facilitate a better understanding of individual student needs and help teachers make informed decisions when planning instructional activities. By involving students in the decision-making process and valuing their input, teachers can foster a sense of ownership and autonomy in the learning process, ultimately promoting student motivation and engagement.

Third, it is recommended that teachers recognize the benefits and utility of blended leaning as a contemporary teaching method, compared to solely traditional or solely online methods. It leverages the strengths of both methods, allowing for a more personalized and flexible learning experience. Students can benefit from face-to-face interactions with teachers

and peers during in-person sessions, fostering social connections and immediate feedback. Simultaneously, online components provide opportunities for self-paced learning, access to a wide range of resources, and the convenience of remote access. Additionally, blended learning promotes the development of digital literacy and technological skills, essential in today's interconnected world.

Lastly, ongoing professional development is recommended for teachers to stay informed about current research and best practices in language teaching. By keeping abreast of advancements in the field, educators can critically evaluate relationships between variables such as learning styles and learning activities, and adapt their instructional strategies accordingly.

2.5.3.2 Recommendations for Future Research

The current study attempts to shed light on the relationship between students' learning styles and language learning activity preferences. It is conducted as a quantitative investigation of the previously-mentioned relationship in Master 1 students of English at Mila University Centre, Department of Foreign Languages. Therefore, it is construed as an indispensable step which might pave the way for other research works to be carried out with the purpose to study the previously mentioned issue more profoundly, especially with the spread of BL in recent years. In other words, studies about the said relationship can be conducted on larger samples representing a larger population. Provided that time is available for future research, a study of this kind can be more informative if made experimental. This allows the researcher to deeply measure and analyse the actual performance of students on such activities rather than just relying on a scale of preference.

Additionally, further research is needed to explore the complex relationship between learning styles and language learning activities. Future studies are recommended to investigate additional factors that may influence students' activity preferences, such as cultural

background, prior language learning experiences, or individual motivations. By gaining a deeper understanding of these factors, language educators can refine their instructional strategies and design more inclusive and engaging learning environments that cater to the diverse needs of their students.

Conclusion

For reminder purposes, this chapter is concerned with the practical part of the current study which explores the relation between learning styles and language learning activity preferences. The analysis of the students' questionnaire reveals the lack of a significant relation between students' self-perceived learning styles and their preferred language learning activities. While the findings challenge conventional assumptions, they serve as a starting point for future research endeavours aimed at unravelling the intricate interplay between learning styles, activity preferences, and language acquisition. By embracing a more holistic approach to language teaching, educators can empower their students to become active participants in their own learning journeys.

General Conclusion

All along the current research work, it is reiterated that the relation between learners' learning styles and language learning activity preferences is the main focus around which this quantitative study is carried out. An attempt was made to investigate whether such a relationship exists, and to what extent. First, an account was made for some of the learning activities used in blended learning, both in-person and online. Additionally, the VARK model of learning styles was selected as the main model used in the research. In search of achieving the aims of the study, a questionnaire was administered to 100 EFL students at the Department of Foreign Languages, University Centre of Mila.

In order to see how the respondents cluster in terms of learning styles, the sample was subjected to a cluster analysis based on their answers to a learning styles scale using the VARK model (see Appendix A). The analysis was run using SPSS, resulting in the identification of four distinct clusters as a main finding. Once the clusters were determined, a series of Chi-square tests were conducted to reveal whether there was an association between the preferred blended learning activities and learning style clusters to which learners belong. Thus, as another main findings obtained through the analysis of the collected data, it is revealed that no such statistically significant relationship exists. That is, it was found that the four clusters representing different patterns of learning styles did not exhibit any statistically significant association with specific types of learning activities. This finding challenges the commonly held belief that students' preferred language learning activities are directly linked to their learning styles. In other words, the students' subjective perception of their preferred language learning activities appears to be completely independent of their learning styles. Furthermore, it was found that the students preferred in-person instruction over online or blended instruction.

At the end, it is noteworthy that the current study can be resorted to in order for teachers to reflect upon the extent to which they select the language learning activities to be used in

their pedagogical practices, and especially in BL settings. In this respect, it is recommended that teachers pay more attention to other variables than just their learners' learning styles in order to maximise the potential and success rate of BL courses. Nevertheless, it is worth mentioning that this study is of a limited scope and the results can probably be open to discussion and critique, which makes it imperative for future researchers to consider conducting further research in the same area.

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Appendices

Appendix A

The Students' Questionnaire

Dear 1st year Master students, this questionnaire is used for the purpose of investigating the preferences that students have towards the learning activities used in Blended Learning. Please take a couple of minutes to fill it out.

Section one: Background Information

1. Age range: ☐ 19 ☐ 21-25 ☐ 25+

2. Gender: ☐ Male ☐ Female

Section two: Type of Learning Style

4. The following questions are designed to determine your learning style. For each item, circle the answer that suits you the most.

(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)

1. I prefer a teacher who uses handouts and books	1	2	3	4	5
2. I prefer a teacher who uses group discussions	1	2	3	4	5
3. I prefer a teacher who uses diagrams, charts, maps or graphs	1	2	3	4	5
4. I prefer a teacher who uses demonstrations or practical sessions	1	2	3	4	5
5. When I am learning, I prefer to read books, articles and handouts	1	2	3	4	5
6. I would rather listen to a good lecture or speech than read about the same material	1	2	3	4	5
7. When I am learning, I see patterns in things	1	2	3	4	5
8. I enjoy working with my hands or making things	1	2	3	4	5

9. When learning from the Internet, I like written descriptions, lists and explanations.	1	2	3	4	5
10. When learning from the Internet, I like audio channels where I can listen to podcasts	1	2	3	4	5
11. When learning from the Internet, I take interest in designs and visual features	1	2	3	4	5
12. When learning from the Internet, I like videos showing how to do or make things	1	2	3	4	5

Section three: The preferred blended (in-person + online) learning activity

5. In a blended learning environment, which of the following is your preferred type of learning activity? (you can tick more than one)

1. ☐ Picture description or narration
2. ☐ Watching podcasts or documentaries followed by listening comprehension
3. ☐ Translation practice
4. ☐ Online discussion forums or chat rooms
5. ☐ In class role-playing (Drama and performances)
6. ☐ Reading comprehension
7. ☐ Interactive digital whiteboards for group presentations and collaboration
8. ☐ Online audio recordings, podcasts, and audiobooks
9. ☐ Online language learning apps and software with interactive images and graphics
10. ☐ Online collaborative projects and activities with role-play scenarios
11. ☐ Writing prompts and peer review activities using online platforms
12. ☐ Interactive virtual language learning environments
13. ☐ Online writing practice with grammar checkers

14. ☐ Visualising mind maps and concept maps

15. ☐ Pronunciation drills

16. ☐ Others: ……

Section four: Instruction type:

6. Which do you prefer the most?

☐ In-person activities

☐ Online activities

☐ Blended activities

ملخص

تسعى الدراسة الحالية إلى التحقيق في العلاقة بين أنماط تعلم الطلاب وتفضيلاتهم لأنشطة تعلم اللغة في إعدادات التعلم المدمج. بالإضافة إلى ذلك، تحاول هذه الدراسة ربط تلك الأنماط التعليمية بأنشطة التعلم التي يفضلها الطلاب في أنماط التعليم الحضوري و/أو عبر الإنترنت. وبناءً على ذلك، تم طرح ثلاثة أسئلة بحثية في سياق هذه الدراسة: (1) باستخدام نموذج VARK، كيف يتجمع الطلاب من حيث أنماط تعلمهم؟ (2) هل هناك علاقة بين أنشطة التعلم المدمج المفضلة للطلاب ومجموعة أنماط التعلم التي ينتمون إليها؟ (3) ماهو نمط التعليم المفضل لدى الطلاب؟ يفترض أن هناك علاقة ذات دلالة إحصائية بين مجموعات أنماط تعلم الطلاب وتفضيلاتهم لأنشطة التعلم. تم تعريض العينة لتحليل تجميعي استنادًا إلى إجاباتهم على مقياس أنماط التعلم باستخدام نموذج VARK. تم حساب التحليل باستخدام برنامج SPSS. بعد تحديد المجموعات، تم إجراء سلسلة من اختبارات مربع كاي للتحقق من أي ارتباطات محتملة بين الأنشطة المفضلة والمجموعات التي تمثل أنماط تعلم الطلاب. من أجل اجابة الأسئلة، تم توزيع استبيان على مائة طالب في السنة الأولى ماستر تخصص تعليم اللغة الإنجليزية كلغة أجنبية في المركز الجامعي لولاية ميلة. تشير النتائج الرئيسية للبحث إلى أن الطلاب يظهرون أنماط التعلم الأربعة بدرجات مختلفة. بالإضافة إلى ذلك، لا توجد علاقة ذات دلالة إحصائية بين الأنشطة المفضلة للطلاب ومجموعة أنماط التعلم التي ينتمون إليها. علاوة على ذلك، تبين أن الطلاب يفضلون التعليم المدمج على التعليم الحضوري أو الإلكتروني بشكل منفرد. كما تم مناقشة النتائج الأخرى بالتفصيل. في النهاية، تقدم هذه الدراسة بعض التوصيات للبيداغوجيا والبحوث المستقبلية.

الكلمات المفتاحية: أنشطة التعلم المدمج، أنماط التعلم، نموذج VARK، تجميع، ارتباط.

Résumé

L'étude actuelle vise à examiner la relation entre les styles d'apprentissage des étudiants et leurs préférences d'activités d'apprentissage des langues dans les environnements d'apprentissage hybride. De plus, cette étude tente d'associer les styles d'apprentissage à leurs activités préférées en présentiel et/ou en ligne. Dans le cadre de cette étude, trois questions de recherche sont posées : (1) En utilisant le modèle VARK, comment les étudiants se regroupent-ils en termes de styles d'apprentissage ? (2) Existe-t-il une association entre l'activité d'apprentissage hybride préférée et le groupe de styles d'apprentissage auquel appartiennent les étudiants ? (3) Quel est le type d'instruction préféré des étudiants ? On suppose qu'il existe une association significative entre les groupes de styles d'apprentissage des apprenants et leurs préférences d'activités d'apprentissage. L'échantillon a été soumis à une analyse en clusters basée sur leurs réponses à une échelle de styles d'apprentissage utilisant le modèle VARK. L'analyse a été réalisée à l'aide du logiciel SPSS. Après l'identification des clusters, une série de tests du khi carré a été réalisée pour déterminer d'éventuelles associations entre les activités d'apprentissage hybride préférées et les clusters représentant les styles d'apprentissage des apprenants. En réponse à ces questions, un questionnaire a été administré à cent étudiants de Master 1 en Anglais au Centre Universitaire de Mila. Les principales conclusions de la recherche révèlent que les étudiants manifestent les quatre types de styles d'apprentissage à des degrés différents. De plus, aucune relation statistiquement significative existe entre l'activité d'apprentissage hybride préférée et le groupe de styles d'apprentissage auquel appartiennent les étudiants. De plus, il a été révélé que les étudiants préféraient une instruction mixte plutôt qu'une instruction exclusivement en présentiel ou en ligne. D'autres résultats sont discutés plus en détail. Enfin, ce travail de recherche propose quelques recommandations pour la pédagogie et les recherches futures.

Mots-clés : activités d'apprentissage hybride, styles d'apprentissage, modèle VARK, cluster, association.