

# **Mixed Methods to Study the Interlanguage of Adult Learners of Maltese as a Second Language**

**Jacqueline Żammit**

*Lecturer at the University of Malta, Faculty of Education, Department of Languages and Humanities in Education.*

**Abstract:** Despite the increased interest in learning Maltese as a second language (MSL), there is a lack of research and large-scale studies on MSL, particularly on the best data collecting research method for identifying the learning patterns of adult MSL learners. Without a better understanding of such patterns, it is hard to ascertain whether the learners are on the right track concerning MSL learning. As such, the main objective of this study was to conduct exhaustive research to determine whether employing mixed methods was appropriate to identify if the learning patterns of MSL learners follow a linear pattern or not with reference to verbal tense and aspect. Furthermore, the study investigated whether MSL learners use the *imperfett* (an aspect referring to action without a time reference that occurs in the future, the present, or repeatedly as a habit) or *perfett* (a verb form that depicts a complete and finished action and focuses on the end of a situation, generally associated with past events). Considering the significance of required data, this analysis used a variety of methods (a combination of both qualitative and quantitative research methods). Due to logistical limitations, the research included a small group of 35 MSL learners from the state-run Lifelong Learning programme who were at an intermediate level of MSL learning. All targeted participants were adults aged 19 to 74 years old. The mixed method was especially useful for this research because it enabled the targeted participants a voice and ensured that the study results were focused on their experiences. According to Creswell and Poth (2016), the methodological aspects of mixed research methods are cornerstones of scientific research that are designed to avoid any misconception. These aspects are closely related to formulating the research questions, variations, hypothesis, selecting appropriate research design and methodology, and yielding the intended result.

**Keywords:** Mixed Research Methods, Qualitative Research methods, Quantitative Research methods, Maltese as a second language (MSL), adult learners, learning patterns

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## **List of Abbreviations:**

**GJT:** grammaticality judgment test

**L1:** native language/first language

**L2:** second language

**MFL1:** Maltese as a foreign language Level 1 Lifelong Learning course

**MFL2:** Maltese as a foreign language Level 2 Lifelong Learning course

**MSL:** Maltese as a second language

**NNS / NNSs:** non-native speaker/s

**NS / NSs:** native speaker/s

**SLA:** second language acquisition

**TGJT:** timed grammaticality judgment test

**VC:** verb conjugation task

## **1. Introduction**

This article discusses the methodology employed to answer research questions and the rationale for their use. The ethical considerations, the procedure and findings of the pilot study and the data collection instruments validity and reliability are also addressed. Furthermore, this study demonstrates the reason for using mixed methodological approaches to investigate Maltese as a second language (MSL) from both sociocultural and cognitive perspectives.

## **2. Study Aims and Research Questions**

The purpose of this research was to determine whether the learning pattern of learners of Maltese as a second language (MSL) follows a linear pattern or not with reference to verbal tense and aspect. The mixed methodological approaches are used for this research. The methodological aspects of research are prime concepts related to scientific research, which are designed to avoid any misconception. These aspects are related to formulating the research question, hypothesis, variation, selection of appropriate methodology and deriving outcomes (Creswell & Plano-Clark, 2007, 2011; Creswell & Poth, 2016).

As the topic of MSL has to be discussed from cognitive and sociocultural aspects, both quantitative and qualitative approaches are being utilised in the current study. In fact, mixed methodological consideration provides qualitative as well as quantitative information to cover the topic area. The reason for selecting this complex methodological approach and related aspects was to demonstrate objective and subjective information and to overcome any limitation in data collection. Considering these methodological aspects also ensures that the objectives of the research are reached.

The study sought to investigate whether adult MSL learners have similar or different performance than Maltese native speakers (NSs) on the same tasks. This research also pursued to explore whether MSL learners use the *imperfett* (an aspect referring to an action without time reference that is happening in time which has yet to come, or in the present time or repeatedly, as a habit (Borg, 1981) at a higher frequency than NSs who the latter tend to use more the *perfett* (an aspect that depicts a complete and finished action and focuses on the end of a situation (Borg, 1981) when interpreting pictures, as was reported by Camilleri (1988) and Camilleri Grima (2015).

The complex analyses method was used to explain the empirically observed effects as the use of the complex method provided qualitative and quantitative information, which can demonstrate different aspects of the topic in a clear manner. The quantitative and qualitative information provided clear insights into the topic as using mixed methods offset the disadvantage of using one method. Based on these aims, three research questions were applied. The Research Question A is: Does a pattern emerge over time in the acquisition of verbal tense/aspect by MSL adult learners? The Research Question B is: Do MSL adult learners at an intermediate level produce the *Perfett* and *Imperfett* at the same frequency as adult native speakers of Maltese? Research Question C is: What difficulties do adult MSL learners face when acquiring Maltese verbal tense/aspect?

## **3. Ethical Considerations and my Research Role**

The University Research Ethics Committee and the Faculty Research Ethics Committee provided me with an Ethical Review Approval of all research and subject recruitment tasks. The participants were informed about the research topic. In addition, they were made aware that participation was voluntary and could withdraw from the study without justification if they wanted.

They were free to ask questions about the tasks, the procedures involved, the data collected and even how the data would be used. Pseudonyms were used to avoid confidentiality issues (Lichtman, 2010), and the participants were informed about the recording of their response. Lastly, I asked the participants to sign the information sheets and consent forms to understand their rights and to confirm their voluntary participation in

the study. Liamputpong (2008) emphasises the need to be culturally-sensitive and I did this by trying to learn about the different cultures represented in the participant group and by being respectful of the participants' cultures. The interview and communication style were adapted to fit the participants' cultural diversities.

While undertaking this study, I was a researcher and a learner (Glesne, 2006). My researcher's roles were recruiting participants, establishing a connection with them, conducting interviews, administering the research tasks, transcription, analysis, and interpretation of the data, all of which I felt fully involved. I took on a learner's role when examining and trying to understand the multiple aspects of the adults' interlanguage when learning MSL, reflecting on the different aspects of the research process and attempting to find answers to questions posed in the research study. Throughout the study, I actively restrained from depending on my subjective opinion to avoid or minimise the likelihood of bias. In addition, I did not share my own experience as an L2 with the study participants and defined my role as the researcher at the commencement of the research tasks to ensure that my bias did not influence the responses of the study participants.

#### **4. The Sample Size and the Sampling Method**

All the MSL learners attending the state-run Lifelong-learning programme and who were at an intermediate level of learning were recruited. There were 39 learners and one of them was not willing to volunteer for the study and another learner left Malta for good. In addition, two participants discontinued attending the MSL course, reducing the study population to 35. I met the learners who were absent from their MSL lessons outside the learning centre, at a coffee shop, to complete the data collection tasks. This helped me to reduce participant attrition. In this research, I assumed a confidence level of 95% and thus, any percentage quoted in this article (relating to the results) will not vary by more than 4% as long as the whole population is targeted.

All potential study participants were adults, aged 19 to 74 years old. They were diverse in terms of their nationalities, jobs, their native language (L1), marital status and Maltese and English proficiency levels. However, they all had some knowledge of the English language and had completed the Maltese as a foreign language Level 1 (MFL1) course and passed the exam at the end of the course. MFL1 course is the elementary and pre-intermediate level of learning Maltese. At the beginning of the present study, the participants had been studying Maltese as a foreign language level 2 (MFL2) for two years and had been living in Malta for at least one year.

Fifteen adults NSs were recruited to check the reliability and validity of the data collection tasks. McArthur (1992: 682) defines NS as «a person who has been speaking a certain language since his or her early childhood». The native and non-native participants were categorised into four groups. The first three groups of non-native speakers (NNSs) took part in the tasks for six times. The first group comprised of all 35 study participants and all sat for the timed grammaticality judgment test (TGJT) and verb conjugation (VC) tasks. Not all 35 participants volunteered to take part in the picture interpretation task and in the reflective journal task. The second group comprised of 16 participants out of 35 participants, who volunteered to participate in the picture interpretation task. The third group only comprised of 5 participants out of 35 participants who took part in the reflective journal task. The fourth group comprised of 15 Maltese NSs who took part only once in TGJT, VC, and picture interpretation tasks.

##### *The Pilot Study*

A sample of 13 MSL learners was recruited for the pilot phase, which is 13% of the total population that was recommended by Baker (1994) for a pilot study. The pilot study participants were all adults, aged between 25 and 71 years old. Just like in the actual study, the pilot study participants were diverse in terms of their L1, ages, life status, English and Maltese language proficiency levels, knowledge of other languages and jobs. In addition, they were knowledgeable in the English language and were at the intermediate level in their learning of MSL (Baker, 1994).

The pilot study of the picture interpretation-speaking task confirmed that the instructions for this task were comprehensible. Leading questions such as “what happened to the man in the pictures”, and “what do you see in the pictures?” were avoided, as they would have led the participants to use the *perfett* and *imperfett* aspects respectively. The pilot study of the reflective journal task was conducted with two volunteers. I learned how to give the correct prompts for reflective tasks as recommended by Polit et al. (2001). I also checked whether the reflective journal task questions were suitable to answer research question C reliably concerning the difficulties that the learners face in learning Maltese verbs.

The interviews pilot study was performed. According to Berry (1999:4), it is critical for researchers to «familiarise themselves with questioning techniques before conducting interviews, therefore, I conducted this pilot study. No adjustment was required. The Timed Grammaticality Judgment Test (TGJT) pilot study greatly helped me to check the comprehensibility of TGJT. Sorace (2005), Sorace and Keller (2005) supports a gradient TGJT, but the pilot study participants favoured a binary TGJT (i.e. ticking correct or incorrect to the test sentences) as they considered a gradient five-point scale as being complicated. This is understandable because just like the participants in the actual study, these participants did not possess any knowledge of linguistics. In fact, they emphasised that a sentence could only be correct or incorrect and nothing in between. A pilot study of the verb conjugation task proved to be difficult for the pilot study participants as they scored a 0 or 1 out of 10. Based on this, it was clear that it was necessary to draw two lines or blank spaces instead of one, as shown in Figure 1, which helped the participants notice when they were required to conjugate two verbs and not only one.

<b>B.) Fill in the blanks by conjugating the verb in the bracket.</b>
1. Marija (mar) _____ (kiel) _____ f'restaurant ilbieraħ.
2. Ahna (hareġ) _____ mid-dar nhar is-Sibt li ġej.
3. Anna bdiet (tela') _____ t-taraġ meta ċempilnilha.
4. Ghada jiena (mar) _____ l-iskola.
5. Pietru se jiehu gost (hasel) _____ il-karozza l-ġdida.
6. Bhalissa ommi (raqad) _____ hafna daqskeemm hi għajjiena.
7. Ahna rridu (mexa) _____ sal-port tal-Belt fil-hdax ta'filgħodu.
8. Il-ġimgħa li ġeja intom (mar) _____ vaganza mal-familja.
9. Tereża (qara) _____ il-ktieb kollu lbierah.
10. Inti (uža) _____ l-karozza bħalissa?

Figure 1: A Verb Conjugation Task

## 5. Pragmatic Research Philosophy and Mixed Methods Research Design

The pragmatic paradigm has received wide support because it embraces various philosophical views by acknowledging the objective and subjective forms of knowledge (Teddlie & Tashakkori, 2012). Pragmatism is based on the ontological assumption that knowledge is either subjective or objective because it is constructed through experience or reflection in either inductive or deductive reasoning (Bazeley, 2013). Pragmatism appreciates the existence of realities in both single and multiple forms and that they are open to both qualitative and empirical analysis (Creswell & Plano-Clark, 2007).

Thus, a pragmatic approach was selected to guide this study because it incorporates both positivist and constructivist philosophies (Rescher, 2001) to answer different research questions. The research questions of this study required both qualitative and quantitative approaches to examine interlanguage from sociocultural

and cognitive perspectives. Based on the advantages of using a pragmatic approach, the researcher determined that mixing methods and a pragmatic research philosophy would be the most appropriate for the current study (Creswell, 2007; Gutek, 2014). The selected conceptual framework, chaos/complexity theory also links to pragmatism because they both recognise the unforeseen forces that change the world reality and the emergence of unexpected data (Creswell, 2007).

The mixed methods research design was selected for this study because it is beneficial in a number of ways. First, it allows researchers to use two or more methods to answer the research questions that could not be done by using a single method (Creswell & Plano-Clark, 2007, 2011). In addition, this design offered a more detailed understanding of the issue under investigation in such a way that the use of one approach could not have offered (Creswell & Plano-Clark, 2011). Using qualitative methods of reflective journals and oral production complemented the quantitative method of timed grammaticality judgment tests and verb conjugation tasks, and offset the issue of the small population. Thus, using mixed methods offset the disadvantage of using one method and incorporated the benefits associated with both qualitative and quantitative approaches into the study (Creswell & Plano-Clark, 2011).

#### *Triangulation*

Four data collection instruments, TGJT, VC, picture interpretation speaking tasks and reflective journals were used and thus methodological triangulation was used, as it involved multiple data collection techniques (Bardovi-Harlig, 2000). Besides ensuring complementation, triangulation facilitated comparison of research findings through data collected via two methods (Mills, 2003). Since each of the research methods complements the other and overcomes margins of errors, triangulation also strengthened the validity of the study (Burns, 2000). Additionally, it counterbalanced the data collection methods and enabled the cross-checking of instruments (Cohen et al., 2000).

I examined the acquisition of aspect and tense through the use of triangulation, which supported me to check the explicit and implicit knowledge of participants through the production and comprehension tasks. The rationale for including TGJTs was to obtain implicit knowledge, while the rationale for the VC tasks was to examine grammatical knowledge and obtain the learners' explicit knowledge. The oral picture interpretation tasks provided the production data. Li and Duff (2002) showed that the findings on aspect systems research depend on the methodology and thus, it was necessary to use multiple tasks. As a result, triangulation gave me the confidence that the findings would gain complete insight into the nature of interlanguage and the use of multiple methods provided both explicit and implicit knowledge. Further, the research questions of this study required both qualitative and quantitative approaches to examine interlanguage from sociocultural and cognitive perspectives (Cohen, 2011; Bogdan & Biklen, 2006).

## **6. Longitudinal Research Design**

Longitudinal research involves continuous data collection (Ortega & Iberri-Shea, 2005). Longitudinal studies are important to show a developmental pattern of the learners' acquisition of tense and aspect of the changes of learning over time (Saldaña, 2003; Bardovi-Harlig, 2000) such as in the present study.

In the present study, the data collection tasks were administered six times during the 15-month study period at two to three-month intervals. Two almost similar versions of the data collection instruments, Set A and Set B were created. The tests were administered alternately to ensure reliability. This allowed me to investigate the learners' learning curve on VC and TGJT tasks at six points, which overlapped with the beginning and end of the MFL2 scholastic year. I asked the participants to perform a retrospective recall at the end of the data collection task to help address insufficient or inaccurate information.

## 7. Data Collection

The data collection tasks were conducted when the learners were in the second and third year of MSL. I had to attend three MSL classes during each data collection session. Each session took three hours at each centre, which means that the total data collection time at the learning centres from March 2016 to May 2017 was 54 hours. This is not inclusive of the time-spent meeting the learners who were not present in their evening classes, which was done to reduce attrition as well as the time spent meeting the NSs to interview them and ascertain the validity and reliability of the tests.

One of the important considerations in this study was to capture the learners' explicit and implicit knowledge for all the interpretation and judgment tasks. The learners' explicit knowledge and competence were captured on VC tasks through recalling grammar rules from memory before verb conjugation. Timing the grammaticality judgment test limited the time available to think about the participants' judgement of the sentences and thus was used to capture the participants' implicit knowledge (Ellis et al., 2009; Sorace, 1996; Han and Ellis, 1998). Once all TGJTS were returned and photocopied, the participants marked the wrong items of the incorrect sentences that they judged on the TGJT copies during the stimulated recall task, which was also when the interviews were administered.

Explicit knowledge was assessed from the TGJT tasks when the learners marked the grammatically incorrect words during stimulated recall task. This is because when doing so, the learners were most likely thinking metacognitively and had to recall the grammar rules learnt during their lessons to complete the tasks (Sorace, 1996). The picture interpretation speaking tasks captured the students' performance and implicit knowledge because they did not have the time to recall their vocabulary or grammar during the task. I employed retrospection to collect data from both NSs and NNSs by asking them to give the reasoning behind their responses.

## 8. The Data Collection Instruments

### *The participant profile questionnaire*

The profile questionnaires were unstructured and contained a few open-ended questions (Seliger & Shohamy, 1989) to collect the participants' demographic data. The profile questionnaire for this study was designed according to the research questions and existing literature. The profile questionnaire was handed to the participants in unsealed envelopes when they handed in their signed consent forms and information sheets. This was done specifically to ensure preserve anonymity (Mackey & Gass, 2005).

### *Timed Grammaticality Judgment Test and its Theoretical Framework*

Chaos/complexity theory and universal grammar were the theoretical frameworks on which this part of research question A about the learning pattern, was based. Baker (1994) elaborated the Chomskyan (1959) position of the *Poverty of the Stimulus* by explaining that NS adults know things that their cognitive minds perceive besides those they could have learnt from samples of speech heard or their experiences of the world. For example, the sentences, «*Pawlu kien imur il-baħar kuljum meta kien żgħir*<sup>1</sup>» and «\**Pawlu kien mar il-baħar kuljum meta kien żgħir*», a Maltese native speaker can immediately tell that the first sentence is correct despite a verb in the present tense following a verb in the past tense; whereas the second sentence is incorrect in Maltese because a temporal adverb such as «*kuljum*<sup>2</sup>» does not accept the use of *Perfett* after a word that means habitual action in the past, such as «*kien.*<sup>3</sup>» In addition, there are two different tenses, that is «*kien*<sup>4</sup>» in the *perfett* and «*imur*<sup>5</sup>» in the *imperfett*, which would confuse learners to think that the first sentence is incorrect especially if they had not studied, understood this concept or were not able to apply it.

<sup>1</sup> Paul used to go to the beach every day when he was young

<sup>2</sup> every day

<sup>3</sup> used to

<sup>4</sup> he was

<sup>5</sup> he goes

This shows the differences between the implicit knowledge of an NS and the explicit knowledge of an NNS while performing TGJT and VC tasks.

I considered that the MSL participants were heterogeneous and were not knowledgeable on linguistics and thus, they may face difficulty to discern acceptable sentences from which were not. This was the rationale for the decision to test grammaticality rather than acceptability by TGJT. Additionally, TGJT assessed the participants' competency levels in judging the grammaticality of a sentence and not their performance. Chomsky (1959) argues that grammaticality shows competence while acceptability is an indicator of performance. The two-point scale was used instead of Likert's scale as the participants faced difficulty in a five-point scale.

#### *Timed Grammaticality Judgment Test*

There were two sets of TGJT tasks and each set comprised of 40 sentences, both grammatical and ungrammatical ones, that the participants were required to judge whether or not they were correct within 20 minutes to elicit implicit knowledge. Research shows that time limit in a GJT is likely to force learners to rely on implicit knowledge and access their explicit knowledge if the time within which they are allowed to respond is unlimited (Bialystok, 1979; Sorace & Filiaci, 2006; Bowles, 2011; Ellis & Loewen, 2007). The differences in the 40 TGJT sentences in Sets A and B were lexical but not grammatical knowledge (Schütze, 2016). In both sets, the number of grammatical and ungrammatical items were similar. However, this information was not shared with participants to prevent guessing. The order within each set of related sentences was given randomly as shown in Table 1, and the sentences were re-ordered afresh to prevent recall bias or participants guessing or attempts to predict the responses (Schütze, 2016).

*Table 1: The Timing of the Quantitative Data Collection*

MONTH AND YEAR	TGJT	VC
MARCH 2016	TGJT1	VC1
MAY 2016	TGJT2	VC2
OCTOBER 2016	TGJT3	VC3
JANUARY 2017	TGJT4	VC4
MARCH 2017	TGJT5	VC5
MAY 2017	TGJT6	VC6

The sentences were designed to eliminate any parsing difficulties as advised by Schütze (2016). The Maltese grammar and vocabulary used to construct the sentences had already been covered in their MFL1 and MFL2 syllabi. All the NNSs and NSs participated in VCs and TGJTs. However, the 15 NSs took part in TGJT Task A only once for validity reasons.

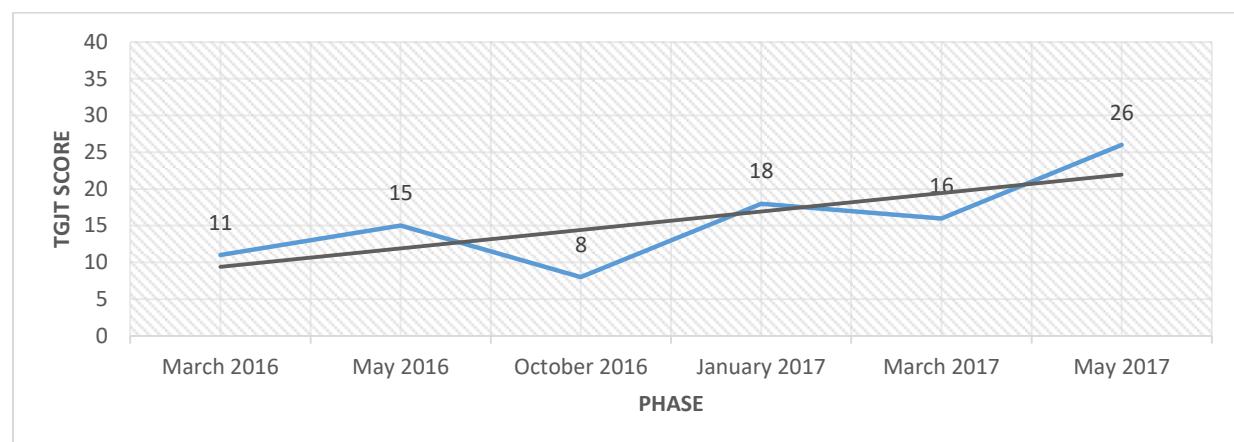
Six TGJTs were photocopied to avoid altering the original answers, and the participants asked to go through their tasks and mark the incorrect words in sentences that they had judged. They were also required to justify their answers (Fetzer, 2007). In this study, I investigated the retrospection activity to understand the participants' reasons out of the belief that they did not give responses without any thought into it. Hence, the stimulated recall task should have elicited the explicit knowledge of the participants in MSL.

#### *The design and procedure of the verb conjugation task*

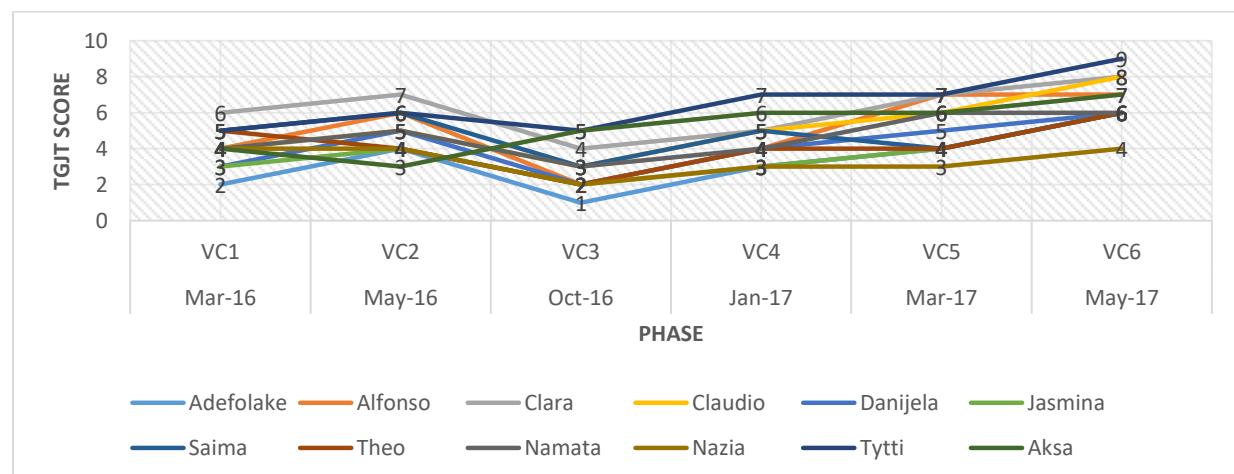
The VC tasks were designed to answer research question A. In this exercise, the participants had to fill in gaps, and in the process tap into their explicit knowledge of grammatical meanings and forms (Purpura, 2004: 135). The VC task comprised ten test items where participants had to conjugate the verb in the *Mamma* (third-person masculine singular in the *perfect tense*) depending on the context. Time adverbs and verb construction with auxiliaries such as «*qed*» (Present Continuous) and «*se*» (Future) were used as distractors.

### *Analysis of quantitative data, TGJT and VC tasks*

The TGJT and VC data were analysed using individual and a group of learning curves as shown in Figures 1 and 2 respectively. Geogebra was used to provide the general group learning curves sketches as shown in Figure 3. One-way ANOVA graphs and their error bar graphs as shown in Figure 4 and Table 2 respectively, were used to assess statistical significance in the participants' average scores. Pearson coefficient test was used to assess the correlation between TGJT and VC scores and examine the chaos/complexity theory fractal pattern, as shown in Table 3 and Figure 5. This fractal pattern that repeated itself in both tests continued to validate the present study's quantitative tests (Larsen-Freeman, 2011). This implies that when a learner makes progress in TGJT, they also make progress in VC and the same applies when the participant's score experiences a negative acceleration/decline or exponential learning (i.e., very fast; rapid learning). Although the participants' scores of both tasks were parallel, and hence they showed this fractal pattern; there were three exceptions, as shown in Figure 5.



*Figure 1: An Individual Learning Curve depicting the non-linear learning curve derived from TGJT scores*



*Figure 2: Learning Curves of 12 participants*

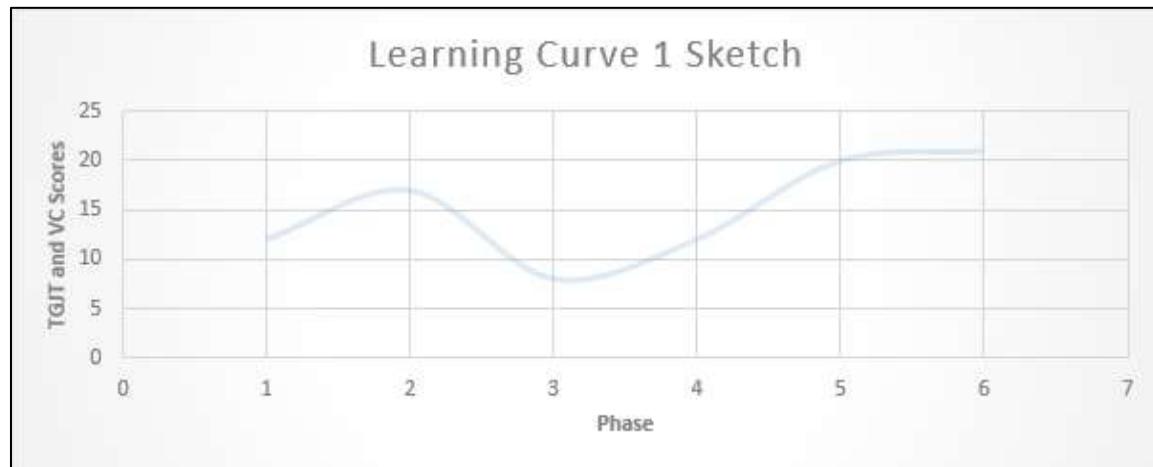


Figure 3: The General trend of the Learning Curve of Figure 2

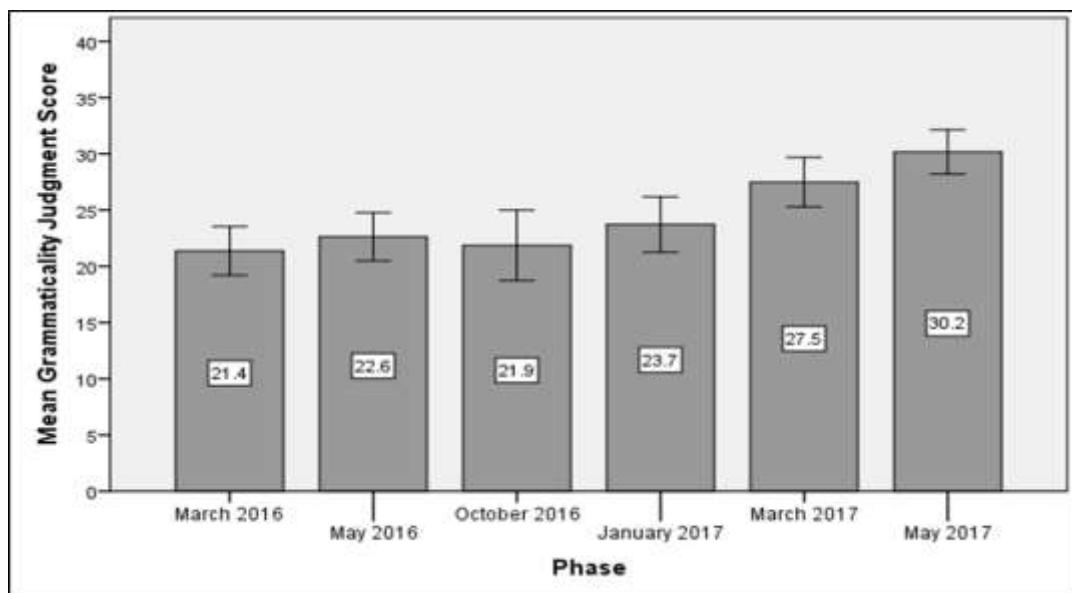


Figure 4: The Mean Scores of Timed Grammaticality Judgment Tests

Table 2: Error Bar Chart of TGJT Mean Scores

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
March 2016	35	21.37	6.325	1.069	19.20	23.54
May 2016	35	22.63	6.227	1.052	20.49	24.77
October 2016	35	21.86	9.117	1.541	18.73	24.99
January 2017	35	23.71	7.168	1.212	21.25	26.18
March 2017	35	27.49	6.409	1.083	25.28	29.69
May 2017	35	30.17	5.721	.967	28.21	32.14

F (5, 204) = 9.065, p < 0.001

#### ANOVA

Score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2168.710	5	433.742	9.065	.000
Within Groups	9761.486	204	47.850		
Total	11930.196	209			

Table 3: The Correlation between TGJT and VC scores

Pearson Correlation		VC score
TGJT score	Correlation Coefficient	0.676
	P-value	0.000
	Sample size	35

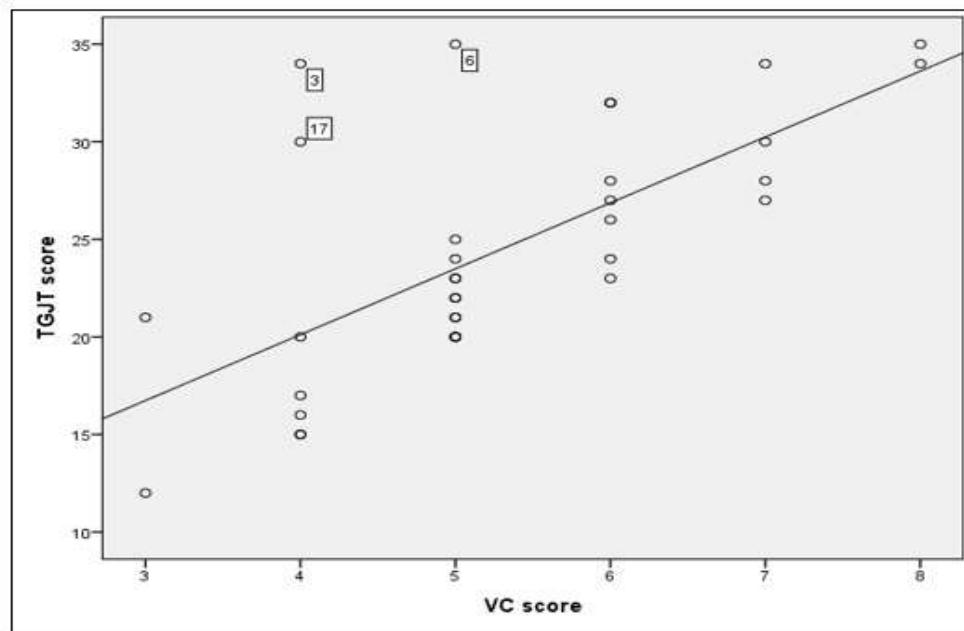


Figure 5: The Pearson Correlation between TGJT and VC scores

#### Picture Interpretation Speaking Task

Camilleri (1988) and Camilleri Grima (2015) stated that advanced MSL learners use *imperfett* more frequently than NSs. Research question B investigated this phenomenon using production speaking tasks. Two sets of picture interpretation tasks, Set A and Set B which included two pictures in each task were used. In both Sets, the first picture included a total of eight pictures so that participants could produce sentences that used eight target verbs. Similarly, the second picture of both sets had only one picture and the participants narrated a story according to the picture. I provided a word box full of nouns to complement the MSL participants' vocabulary in case they lacked the necessary vocabulary to construct sentences. The NSs received the same prompts. The word box contained nouns only and no verbs to avoid leading the participants to use a particular verbal form.

Each picture in the first picture interpretation task was accompanied by a clock drawing in a sequence to show the time that the particular character carried out each activity to make it look like a story-telling task, as one can see in Figure 6. All the pictures were presented on one page so that the participants did not miss any of the pictures. The target verbs were selected based on the verbs listed by MFL1 teacher's syllabus. The participants had 30 seconds to observe the pictures and prompt and five to ten minutes to talk about these pictures, which was recorded. The NSs took the picture interpretation tasks for Set A only because once was sufficient to test the tense and aspect that NSs commonly use. However, the MSL learners sat for the picture interpretations tasks six times.



Figure 6: Picture Interpretation 1

#### *Stimulated recall methodology and analysis*

The transcripts of the recorded picture interpretation tasks were used to examine the participants' most frequent use of verbal tense and aspect (Skehan & Foster, 1999). The number of occurrences of verbal tense and aspect was counted manually and the verbs coded into *Perfett*, Past Habitual with «*kien*», *Imperfett*, Present Progressive with «*qed*» and Future with «*se*». The number of each verb form, function and type were entered into a table and I specified whether the verb tense and aspect were obtained from NSs or NNSs.

#### *The Reflective Journal Task*

This task was performed to answer Research Question C about the difficulties in learning MSL. Reciprocity in social situations is critical (Groves, 2015). Five participants who volunteered to participate in the reflective journal tasks were promised that writing the reflective journals could help them develop their metacognition (Harrison, MacGibbon, and Morton, 2001). I also gave these participants a book about learning MSL and ensured that the data collection environment was respectful and relaxed where participants were treated as collaborators (Groves, 2015: 63).

Thematic analysis methods were used to analyse the information collected during interviews and the learners' reflective journals. I provided several reflections prompts to help stimulate their writing. The five participants had to write about their difficulties and strategies in learning Maltese verbs and their interactions with Maltese NSs. I classified the reflective journal task findings according to the themes to find out the nature of learning difficulties, important aspects of the learners' sociocultural engagements and their effect on the second lingua culture development of the learners at an individual level.

#### *Administration of one-on-one interviews*

The interviews were conducted to make the participants aware of the learning processes by asking them questions and drawing attention to any difficulties in the learning process. There were six open-ended questions whose purpose were to explore the learners' beliefs regarding the nature of language and their

learning processes as well as their challenges while learning Maltese verbs. The wording of the questions was short, clear, simple and easy to understand and without ambiguity, sensitive words, complicated terms or jargon. The questions were also not restrictive to participants in regards to responses (Berry, 1999:5). The interview sessions were recorded (via audio) and transcribed after the interviews. The researcher then distributed the transcribed interview sessions to the participants to ensure that they agreed with my transcription (participant checking).

#### *Analysis of qualitative data: reflective journals and interviews*

The first step of the data analysis process is familiarization with the data, which was done through reading the reflective journals and interview transcripts. The profile of each participant created and summarised to answer research question C to understand the difficulties encountered by the participants while learning MSL verbs. The data analysis was ongoing, and new data was frequently added to the existing files (Lichtman, 2010). The next step was to categorise the five cases and interview data into themes (Mercer, 2009; 2011). The analysis procedure was recursive in nature, and new categories were added until there were not any further new themes (Berger, 2013; Mercer, 2009; 2011).

## **9. Conclusion**

This chapter discussed the methods used in a study about adults learning MSL verbal tense and aspect, and the rationale for the methodology, epistemology, ontology and approaches used. The reasons for using each method and collection and interpretation of data by each method was presented. The literature review on second language acquisition (SLA) guided the choice, implementation, and design of the research instruments. The validity and reliability of the research instruments were checked using a post hoc test (except the VC task). The analysis plan, as well as the pilot study and its role in the modification of research instruments, have also been discussed.

#### *Validity*

Two legitimization practices, multiple validities legitimization, and weakness minimization were used in the present study (Onwuegbuzie & Burke Johnson, 2006). Weakness minimization legitimization refers to the extent to which the strength of two or more data instruments compensates for the weaknesses of the other, which results in high-quality meta-interferences (Onwuegbuzie & Burke Johnson, 2006). For example, while the reflective journal task was considered useful because it could provide in-depth perspectives and insights, it was time-consuming and susceptible to the researcher's bias (Burke Johnson & Onwuegbuzie, 2004). On the other hand, the quantitative part of the study compensated for the drawbacks of the qualitative aspect by allowing objectivity and efficiency in data collection and analysis (Burke Johnson & Onwuegbuzie, 2004).

Multiple validities legitimization established legitimacy in considering the reliability and validity strategies that were applied to the different types of data (Onwuegbuzie & Johnson, 2006). Participant checking and data triangulation ensure credibility (Merriam, 2009). Participants could correct any misunderstandings or errors, provide supplementary information and gave the researcher an opportunity to confirm particular aspects of the data (Lincoln & Guba, 1985; Birt et al., 2016). Lastly, I was aware of personal biases and took strategies to minimise their influence on the study. The quantitative data results which supported chaos/complexity theory that established the non-linear, complex, unpredictable and chaotic learning of SLA helped to confirm content validity.

#### *Reliability*

Reliability is the degree to which the findings are consistent over time and represent the population under investigation accurately. Research instruments are reliable if they can reproduce similar results under similar methodology if replicated. In this study, the researcher checked the verb tenses that the participants used in the picture interpretation task, whether they were of the same tense when being used to describe the same set of pictures as Camilleri (1988) and Camilleri Grima (2015) found. The use of different research instruments to compare whether participants perform the same way can also be used to assess the reliability (Seliger &

Shohamy, 1989). Lastly, according to Lee (2006), by increasing the number of tasks, as was done in the present study, enhances more reliability than increasing the number of raters for each task.

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#### **INFO**

**Corresponding Author:** Jacqueline Żammit, *Lecturer at the University of Malta, Faculty of Education, Department of Languages and Humanities in Education.*

**How to cite this article:** Jacqueline Żammit, *Mixed Methods to study the Interlanguage of Adult Learners of Maltese as a Second Language*, *Asian. Jour. Social. Scie. Mgmt. Tech.*2022; 4(3): 79-93.