Revista Científica da Universidade Eduardo Mondlane, Série: Letras e Ciências Sociais ISSN 2307-3918

Artigo original

USING THINK ALOUD METHODS (TAM) EFFECTIVELY TO IDENTIFY THE USE OF READING COMPREHENSION STRATEGIES IN FL MULTILINGUAL CONTEXTS: TOWARDS EFFECTIVE MEANING CONSTRUCTION (PART II)

Manuel Cabinda

Eduardo Mondlane University, Mozambique

ABSTRACT: This paper provides an additional basis for the understanding of practical use of Think Aloud Methodologies (TAM) in SLA and FL research. It explores TAM, i.e. reliability and veridicality and some major hurdles to answer one main question on the use of reading strategies and text meaning construction by learners and users in an EAP context. TAM revealed to be a reliable and trustworthy research tool in SLA and FL multilingual contexts to search/identify for reading strategies, when the adequate instructions and precautionary measures are taken into account and followed suit. The study revealed the use of a varied battery of reading strategies by FL participants, i.e. cognitive, metacognitive and essentially supply strategies to compensate for any gaps regarding the process of construing comprehension. A novel reading strategy, sight translation, was revealed to be used by participants as a vital recourse to text comprehension construction. The conclusions suggest further studies to comprehend the dearth of sight translation in FL reading comprehension and probable inclusion in the list of support reading strategies in multilingual EFL contexts.

***Keywords*:** Cognition, metacognition, TAM, text comprehesion.

USO EFECTIVO DE *THINK ALOUD (TAM* - PENSAR EM VOZ ALTA) PARA IDENTIFICAR TÉCNICAS DE LEITURA NUM CONTEXTO MULTILINGUE E DE USO DA LÍNGUA ESTRANGEIRA: COMPREENSÃO EFECTIVA DE TEXTO (PARTE II)

RESUMO: O presente artigo científico providencia uma base adicional para a compreensão do uso pratico do Think Aloud Methodologies (TAM – Pensar em Voz Alta) nas actividades de investigação na área do Ensino de Língua Estrangeira (FL) e Aquisição da Língua Segunda (SLA). O artigo explora o TAM, a sua fiabilidade e confiabilidade e alguns dos seus mais proeminentes obstáculos, para encontrar respostas à uma questão principal, o uso das técnicas de leitura e a construção da compreensão por aprendizes e utentes da FL, num contexto de uso da Língua Inglesa para Propósitos Académicos (EAP). TAM revelou ser um instrumento de investigação confiável e seguro em contextos multilingues SLA e FL para identificar técnicas de leitura, quando as medidas precaucionarias e processuais adequadas são tomadas em conta e seguidas adequadamente. O estudo revelou o uso efectivo de uma bateria de técnicas de leitura pelos participantes FL, tais como técnicas cognitivas, metacognitivas e estratégias de apoio para compensar quaisquer lacunas patentes no processo de construção da compreensão textual. Uma técnica inovadora, *sight translation* (tradução à vista), foi identificada como tendo sido utilizada pelos participantes como um recurso vital para a compreensão textual. As conclusões do estudo sugerem que devem ser feitos mais estudos para compreender a ausência de uso desta técnica de leitura – *sight translation*, na área da construção da compreensão em FL e quiçá incluir a mesma na lista de técnicas de leitura de apoio patentes em taxonomias de leitura em contextos multilingues. FL.

***Palavras-chave*:** Cognição, metacognição, TAM (Pensar em Voz Alta), compreensão de texto**.**

Correspondência para: (correspondence to:) manuel.cabinda@uem.ac.mz or manuel.cabinda66@uem.mz**.**

INTRODUCTION

The paper aims to use TAM- Verbal Protocol Analysis or Think Aloud Protocols to rigorously elicit verbal reports of thought sequences to identify effective use of reading strategies in a multilingual context where participants have the need to use EFL to construe compreenshion of text. The present study explores cognitive processes (PRESSLEY and AFFLERBACH, 1995), L1 and L2 and FL reading comprehension and analysis and the issue of reactivity on L2 acquisition[i], (BLOCK, 1992; BLOCK and ISRAEL, 2004;YOSHIDA, 2008) and Second Language Acquisition -SLA studies to gather and identify information about the types of strategies learners effectively apply in FL/L2 to solve tasks (ALANEN, 1995; LEOW, 2001b; LEOW, 1998a,1998b, 2000, 2001a).

Ultimately the study attempts to answer the following question: What reading strategies are effectively used in an EFL multilingual context to construct meaning from text?

Context

The paper is set on a context where the participants speak an array of Bantu languages (most of which L1) and Portuguese as the official language or lingua franca, Mozambique. English is taught as an aditional or foreign language in schools and universities.

The need to use academic english in Universities by scholars and students and the use of the insurmontable number of literarure in english and the need to construct meaning/comprehension for a successful performance within these contexts, the is a huge demand of english and thus the need comprehend how these entities operate within this EFL mltilingual context.

The 21st century has shown that English in Higher Education, particularly at Universities, English (as L2, FL, EAP-ESP) is in high thus there is a need for courses to assist students to attain a reasonably high proficiency in English in academic discourse and academic literacy (HYLAND, 2006).

There is no doubt that scholars in SLA and learners need to develop academic language and literacy proficiency in addition to content-area knowledge in order to succeed at tertiary level (GARCIA, 2000; FREEMAN and FREEMAN, 2003; KODA, 2005) but the developments in academic reading strategies and skills have not yet fully explained how the use of such skills is operated in Multlingual contexts like the one in Mozambique. Evidence shows however that in some African universities such as those in Mozambique, porgress has been slow or have seen unclear rates of progress.

Bernhardt's (2003) warning against the tendency of researchers, curriculum planners and policy makers to 'conflate' the diversity of these languages (bantu, Portuguese, English in my context) we will 'continue to be without the significant force the term multilingual should have' (BERNHARDT, 2003:113-114) when attempting to develop curricula that may be deemed adequate for such complex second language acquisition (SLA) and FL contexts as the one at UEM. Thus, in this linguistically complex context there is the need for an in-depth understanding of what is currently happening with the parts within this sector regarding students' development of their proficiency in English, EAP in particular.

Empirical studies and TAM procedures

As stated above, multilingual university students in non-English contexts where an array of languages are spoken, i.e. Mozambique, and where they have to increasingly read scientific literature in a foreign language, English, to construct meaning have yeilded very little insights

about how they use reading strategies and how these strategies effectively aid in text comprehension; what is known stems out from studies in L1. As such the present study attemps to gather data to validate some of the advanced propositions for second language reading situations by using TAM.

The intricacies around TAM and respcective limitations have been pointed out (SMITH and KING, 2013) yet and despite some of the discussed drawback, TAM is still a valid and promising method that may assist in the provision of answers to the many unsolved quests that EFL multilingual contexts face. Furthermore, these methods have been widely used by researchers in SLA studies to obtain information on reading and related fields.

The issues parteining to the veridicality and reactivity of the TAMs have been widely addressed and I have further contributted to this discussion in a desk search paper (Cabinda, forthcoming) and corroboated with the assertions around the method and believe this to be a valid tool. A number of studies have used the tool and these will be briefly mentioned below.

Yoshida's (2008) study on reactivity effects of thinking-aloud on L2 reading tested Bowles and Leow's (2005) speculations that reactivity varies according to task type, text variables, individual differences, and mixed results about reactivity in relation with task effects. She used *N*64 English major fourth-year university students in Western Japan, with an English language proficiency level (56.6 points on average, out of 80 with scores ranging from 75 to 33 on the reading section of the Michigan Placement Test), and with a homogeneous educational background. Yoshida randomly selected participants and assigned them to a think-aloud (N31) and a non-think-aloud group (N33).

An independent *t*-test showed no statistically significant difference in scores of English reading ability (Michigan Placement Test: Form C) between the think-aloud group and the non-think aloud group ($p < .01$). The study used an expository text (488 words; 40 sentences) with a Flesch–Kincaid Readability Index of 6.4 and a Flesch Reading Ease rating of 71.2.

Results showed that participants who thought aloud during a reading task recalled the passage equally as well as those who did not, regardless of the type of task they engaged in or the strategy they adopted during reading. There were no impact on long-term retention of the passage by either reading conditions or task type, supporting the idea of non-reactivity on L2 reading in terms of recalled ideas but could possibly have affected performance in a written form as a while-reading task. The study offered new insights into L2 reading research by highlighting issues of non-reactivity in a while-reading process and task completion.

Anoter relevant study is Vidal' 2002 that involved Portuguese-Brazilian speakers. It investigated the full range of possible strategies across skills in relation to learning achievement, taking into account a broad range of learning strategies that potentially contribute to efforts students make when learning an L2. The focus was on language learning/use strategies in writing. Using N8 Brazilian English-Portuguese majors from Universidade Federal de Fluminense the study sought to correlate reported frequency of language learning strategy use with actual strategy use and ratings of task performance on writing tasks which explored form focused instruction within a communicative approach (CLT). Vidal used a Portuguese version of TAM and a 50-item Strategy Inventory for Language Learning (SILL) (OXFORD, 1990) (PAIVA, 1997, in VIDAL, 2002). Identifying statements, he concluded that students chiefly used metacognitive strategies (Memory and Affective strategies included).

Yet the list of statements[ii] translate into the following reading strategies: cognitive, metacognitive, compensation and affective reading strategies, all of which were classified using the 50-item SILL (OXFORD, 1990). Here Vidal (2002) refers to an umbrella term that congregates second language learning and second language learner strategy together to mean and encompass second language learning and second language use strategies, both of which are seen as steps or actions on the part of the learner/reader to consciously select strategies to enhance learning or use of a second or foreign language (sf COHEN, 1998). Recent reading strategies taxonomies (SHEOREY and MOHKTARI, 2001; ERICSSON, 2002A, 2002B; MOKHTARI, K. *et al*, 2018) provide a more clearer and more comprehensive picture of the various kinds of strategies used and or purported to be used by SL students than the ones used in Vidal's 2002 study, i.e. reading taxonomies by O'Malley and Chamot (1990), Oxford I(1990), etc. In addition, Vidal's (2002) study appears to lack observance of Ericsson and Simon's (1984, 1988, 1993) A-G recommendations (SMITH and KING, 2013), but all of these shortcomings do not necessarily dismiss or invalidate the results of the study.

Vidal's (2002) study revealed a somewhat blurred picture concerning the relationship between reported frequency of strategy use and the ratings of task performance on writing tasks: some successful students scored high and reported a high frequency use of metacognitive and cognitive strategies (2 participants) and another high scorer did not show indications of the usual use of metacognitive strategies nor did this participant indicate an usually high or low use of Cognitive strategies, but instead used compensatory ones with a much higher frequency. Thus it can be noted that higher scorers did not reveal a corresponding pattern of use of reading strategies. This is further confirmed when other higher scorers (who scored even higher) claimed to always and almost always use both metacognitive and cognitive strategies (one participant) and another reported using metacognitive strategies and compensation strategies usually and scored even higher on cognitive strategies. Drawing any conclusions as to what *exact* or habitual pattern of cognitive strategies higher scorers follow when processing text and comprehension and when performing task completions becomes hard with this complex picture.

To conclude, Vidal (2002) found that 'the relationship between language learning/use strategies and ratings of task performance on writing tasks are complex to explain' (VIDAL, 2002, p. 64).

Worthy of mention is accuracy versus meaning production. Some participants in Vidal's (2002) revealed the use of self-monitoring - a key process to distinguish competent or successful learners from poor learners. I have observed this aspect in my study when participants showed preoccupation with sentence structure and attempted to make out the correct meaning of words/lexical items or phrases and to find exact matches in Portuguese or in a Bantu language. As such, comprehension seemed to be left for a second plan. This attitude may have probably accounted for the low mean comprehension results (CABINDA, 2013)

Meng (2006) also used *think-alouds* to investigate the patterns of reading strategy use of both good and weak advanced EFL readers and the impact of their engagement with different text types and text difficulty levels. N26 advanced student participants studying English as a foreign language, subdivided into two groups of eight according to level of reading ability, were asked to read twelve texts and verbalize their thought processes while reading.

As in earlier studies (SHEOREY & MOHKTARI, 2001; VIDAL, 2002;

ERICSSON, 2002a, 2002b), and some recent (CABINDA, 2016), which aimed specifically at identifying the strategies used by the participants, Meng (2006) used the data to develop a Coding Scheme, which included forty identified strategies that were classified into three categories, namely bottom-up, top-down, and metacognitive strategies, and in conformity with their processing operations. These categories were further subdivided into eleven subcategories based on their processing load and functional purposes.

The major findings in Meng's 2006: good and weak readers were aware of and used reading strategies, and that these learners largely revealed the use of the same strategies, with a similar pattern of employment of bottom-up strategies. The study also revealed a key difference in their strategy usage: good readers had a higher frequency use of top-down strategies, suggesting that good readers were more concerned with obtaining the overall meaning of the text than were their weaker counterparts.

Surprisingly, the study also revealed that weak readers used metacognitive strategies more frequently than their stronger counterparts. Meng (2006) suggested that this may be due to the habit readers have been found to have of monitoring their activities. The study also revealed that the differentiated nature or different genres of texts did not impact on the readers' overall strategy use, in the case of both good and weak readers. The study also revealed that the effect of text difficulty on good readers' strategy use was strong, yet was weak on weak readers, showing that good readers could adapt flexibly, or 'strategically', to more difficult reading tasks and texts by making use of their wide repertoire of strategies in comparison to their weaker counterparts who tended to be less flexible in terms of their reading styles.

The way TAM is used in the studies to correlate issues of concern, such as veridicality and reactivity with the research tool (YOSHIDA, 2008) and to identify the types of reading strategies in FL (PAIVA, 1997; VIDAL, 2002; MENG, 2006) is of insurmountable importance to my study. The procedures described by Ericsson and Simon's (1944, 1993) and respective recommendations (sample size, type and nature of text, linguistic competence) were observed to maintain rigour and veridicality to ensure the validity of data collected and the absence of reactivity in most cases.

METHODOLOGY

The research population and participants

The research population (*N*28) were adult university FL English students of Bantu origin and speakers of Portuguese as a *lingua franca;* very few had Portuguese as L1. English is taught as foreign langauge in most universities and high schools in Mozambique to enhance the reading capability of the students, among other sub-skills, and to read authentic academic texts, research articles, journals, etc.

Not all the participants sat for the IELTS comprehension test (the reading module). Initial intentions to use a third of the IELTS low scorers and a third of the high scorers in the think aloud phase failed: only 10 [iii] out of the 28 participants responded positively and accepted to be recorded and do the reading task as part of the think aloud verbal protocols.

A few (*N*10) completed the test and the cognition and metacognition questionnaire in different stages of the study and part of which were published (CABINDA, 2013, 2016). The results were also used to correlate the results from their comprehension test results and the insights from the cognition and metacognition questionnaire with their reading capabilities and skills/strategies usage.

The participants were permitted to express or verbalize their thoughts in any language

of their choice (among English, Portuguese and a Bantu language) (Table 1).

Research Tools

Based on previous studies that used holistic eclectic research methods to identify reading strategies, i.e. a combination of *Questionnaires,* (CABINDA, 2013, 2016), *a desk search* to discuss TAM and *Survey- of- Reading-Strategies* (SORS) *and Metacognitive-Awareness- of- Reading- Strategies-Inventory* (MARSI and MARSI-R) [iv] (Mokhtari and Reichard, 2002; Mokhtari, Dimitrov, and Reichard, 2018) to identify purported reading strategies used by students (CABINDa, 2016*),* I do use *Think Aloud Methods* (TAM), combined with a *Reading Comprehension Test* (IELTS) to identify efective use of reading strategies used to construct meaning in a EFL Multilingual context. A reading passage from the IELTS series was used given its universal validity and use to select anad place individuals in universties.

TABLE 1: Features of participants: first language, age and gender

	Total	% gender	Port. L1	Bantu L1	Age range
Female	02	20.0	02	00	20-25
Male	09	80.0	03	05	(05)20-25; (03) 25-35

Participants are asked to read a text and report verbally their thought disclousure process. Aftaherwards, they are asked to solve a reading task and verbalize their thought process while doing that. In the end, the verbal reports of thought disclousure are used in the identification of the reading strategies that had effectively been used and their effectiveness in the construction of text comprehension assessed. A comparison with other differing contexts is made and conclusions drawn.

Think Aloud Methodology (TAM) and some procedures

The underlying philosophy of TAM posits that reading a text is a form of communication and that this is at the heart of the educational enterprise. So when students are engaged in dialogue or communication, their learning is not confined to knowledge constructed as a product but rather the development of an understanding of an ability to use the process in the course of which knowledge is constructed (KUCAN and BECK, 1997, pp. 289-290). Thus communication is key not only to understanding but also to producing accurate or quasi-accurate accounts of the process in which one is engaged.

Despite arguments against the provision of instructions and/or 'coaching' [v] of participants in terms of what to report in studies using the Think Aloud Methodology, i.e. the idea of being non-intrusive (SIMON and ERICSSON 1980; COHEN, 1996), followig Johnstone *et al*.. (2006). TAM data can only be deemed valid if no direct coaching is applied.

The study ensured that the participants 'were to be left to their own devices since any instructions might lead to biased processing' (COHEN, 1996, p. 15). Notwithstanding such a factor, and according to Kibby (1997, pp.1-3), Davey (1983), and Kucan and Beck (1997), and even to 'methodological hard liners' like Ericsson and Simon (1993), as Cohen (1996, p. 16) emphasises, recognize the need to instruct participants to make complete verbal protocols, arguing that data attained through **undirected** [vi] verbal

protocols has been shown to be often over generalised and incomplete.

The pros and cons and the A-G recommendations by Ericsson and Simon (1984,1993), and some of the alerts (SMITH and KING, 2013) regarding TAM, have been taken in account. As Pressley and Afflerbach (1995) argue, "it is critical for the researcher to be able to predict what participants will self-report as they attempt a task (*predict study participants' self-reports*) (Pressley & Afflerbach, 1995, p. 9-13, emphasized by Smith & King, 2013, p. 711). In this matter I did trial the exercises, and followed the steps set out in Davey (1983) and Kibby (1997) in order to minimize bias and/or avoid total rejection of the tool.

Procedures and instructions

The participants were instructed in accordance with the basic rules for think aloud protocols (ERICSSON and SIMON, 1993; PRESSLEY and AFFLERBACH, 1995 and these entailed:

i. asking the participants to say out loud what they were thinking while reading and performing the task.

ii. directing participants not to engage in a conversation with the researcher.

iii. avoiding social interaction of any sort between the participant(s) and myself the researcher.

Further, I met the participants who had taken the IELTS and explained the third phase of the study, i.e. engage a reading text and task completion. A short text was used for the practice run.

Participants were explained that they should 'not confound verbalizations with explanations and justifications' (ERICSSON and SIMON, 1993, p. 83). Participants were also given specific instructions to pay attention to what went on in their minds regarding the reading and any 'processes' that were taking place while they were reading and which helped them understand the text (COHEN, 1996, p. 16).

During the data collection proper I sat behind the participants, observing and taking notes, and occasionally 'prompting' the participant to say something after long periods of silence, i.e. through simple nudging participants using 'neutral' cues, such as "keep talking", "say something", "keep thinking aloud". Wh-questions were completely discarded to avoid leading participants on, but used in the retrospective sessions.

Data collection, coding and analysis

A reading text and a reading task on a field related topic were selected from a search carried out through various IELTS samples. The task was to be completed within a given period of time and participants had to match a set of statements (07) describing factors different to those mentioned by the author in the text (03) (Table 2). TAM followed suit using a text that had been part of the IELTS test[vii] to build a suitable comparable platform to correlate the results from the reading task in TAM with those from the IELTS. The reading comprehension task was a section 33-35 of the IELTS reading comprehension test (CABINDA, 2013), where participants had to read then look at a list of statements A-G and select three (03) factors from the list that had been mentioned by the writer of the text and fill in the box in no specific order.

Video recording was not possible because participants felt somewhat wary of this tool, so *in situ* observations and note taking of any activity, behaviour and extra reading activity (non-verbal aspects, body language, use of tools, index finger, the underlining of sentences and/or phrases or words, the act of browsing through and/or flipping the pages, backtracking, etc. etc.) engaged to aid text comprehension and task completion was the alternative.

TABLE 2: Participants in the *Think Alouds*

No.	Code	Test result (out 40) a	%	Gender	Language (L1)
1	SMH002	09	22.5	M	Portuguese
2	CMH003	09	22.5	M	Shangane d
3	MRM004	08	20.0	M	DNS b
4	MDD017	14	35.0	M	Emakhuwa c
5	CMT021	19	47.5	M	Tsonga Shangane
6	ARM022	20	50.0	M	Tsonga Shangane
7	YTD024	20	50.0	F	Portuguese
8	DIT026	21	52.5	F	Portuguese
9	BSG027	23	57.5	M	Emakhuwa c
10	JMM028	20	50.0	M	Portuguese

a IELTS results.
b. Did not state their first language
c Bantu language spoken in the North of Mozambique (Nampula, Cabo Delgado, Niassa and part of Zambezia)
d Bantu language spoken in the Southern region of Mozambique (Save River to Maputo).

All participants but one was voice-recorded during the actual thought disclosure process. He was asked to verbalize his thoughts while reading and/or doing the task and underwent a retrospective session. The recordings were transcribed, coded, and marked and thereafter analysed using the same coding as in the transcriptions. This was postscript to the identification of reading comprehension strategies with the 10-12-5 Sheorey and Mokhtari 2001 Reading Strategies Taxonomy. The categories resulted from a careful analysis and comparison of Weir's, Munby's, and Rosenthine's taxonomies of reading skills and strategies discussed in Cabinda (2013).

All Transcriptions were presented in such a manner which would help with the presentation of the findings in written form as well as subsequent discussions, i.e. data referring to a given portion/part of the reading (segments, clauses, paragraphs, words, phrases, etc.) and/or solution of problems actually used/demonstrated to be used by analysing transcriptions were numbered and used as reference in the analysis and discussion in order to avoid laboriously copying long extracts from the transcripts.

RESULTS

IELTS reading comprehension test (RCT) (Table 3) revealed a gloomy picture where participants failed to attain high results and almost all were below average. The construction of meaning could not have been adequate, especially with respect to higher order reading skills, when comprared to reading skills taxonomies.

The Think Aloud (TAM) test results and verbal thought discloure showed evident awareness of reading strategies involving a chief use of metacognitive strategies, and a high frequency use of cognitive and supply strategies. A novel reading strategy, sight translation, was revealed as being on of the higly used tool to construct meaning.

Table 4 shows TAM reading test results did show a smiliar trend. The results were below avarage showing a serious problem of meaning construction.

TABLE 3: IELTS results

No.	Code	Test result (out 40) a	%	Gender	Language (L1)
1	SMH002	09	22.5	M	Portuguese
2	CMH003	09	22.5	M	Shangane d
3	MRM004	08	20.0	M	DNS b
4	MDD017	14	35.0	M	Emakhuwa c
5	CMT021	19	47.5	M	Tsonga Shangane
6	ARM022	20	50.0	M	Tsonga Shangane
7	YTD024	20	50.0	F	Portuguese
8	DIT026	21	52.5	F	Portuguese
9	BSG027	23	57.5	M	Emakhuwa c
10	JMM028	20	50.0	M	Portuguese

TABLE 4: TAM comprehension test results

No	Code	TAM Reading task results (out of 3)	Gender
1.	SMH002	1(f)	M
2.	CMH003	2(d;f)	M
3.	MRM004	1(e)	M
4.	MDD017	2 (d;f)	M
5.	CMT021	1(e)	M
6.	ARM022	2 (b;d)	M
7.	YIT024	1(d)	F
8.	DIT026	2 (b;d)	F
9.	BSG027	2(e;f)	M
10.	JMM028	1(e)	M

DISCUSSION

The discussion of the findings analysed above were conducted based on the following main research question:

> (a) What reading strategies are effectively used in an EFL multilingual context to construct meaning from text?

The study revealed TAM to yield valid data that showed the use all cognitive and almost all metacognitive strategies by all participants. The following metacognitive strategies were not observed in all participants, 'previewing text before reading' (MET 2) and 'confirming predictions'(MET10); they were only used by ARM, DIT and ARM. The findings corroborate similar results from studies which correlate success in reading by first and second-language readers of English with the use of both metacognitive and cognitive reading strategies (SHEOREY and MOKHTARI, 2001; MOKHTARI and REICHARD, 2004; SCHOONEN *et al.*,1998; STEVENSON *et al.*, 2003; MENG, 2006; PANG, 2008).

Further, the study revealed an indisputable use of supply strategies by all participants, such as taking notes, underlining information, using reference materials like dictionaries, grammar books, paraphrasing for better understanding, going back and

forth in the text and asking oneself questions.

I observed that translation in general and sight-translation in a much more specified manner, the use of cognates both in L1 and the target language, English, usually described as code-switching, to be one of the commonest ways in which participants construed meaning and attempted to resolve the reading task. This realization is in consonance with assertions about proficient bilingual and biliterate readers, who use supply strategies (code mixing, translation, use of cognates), which are believed to be unique and particularly useful for reading in a second language (JIMENEZ *et al.,* 1995, 1996; FENG & MOKHTARI, 1998; CALERO-BRECKHEIMER & GOETZ, 1993; VIDAL, 2002; SHEOREY & BABOCZKY, 2008; MALCOLM, 2009). The results are also in conformity with studies that found no statistically significant difference among participants of different categories of language competence when using support strategies (ZHANG and WU, 2009; KARBALAEE, 2013).

The study revealed a non-significant yet potentially interesting correlation between the reading strategies taught at UEM (CABINDA, 2013) with those inferred from the reading comprehension test (IELTS) and the claims regarding the usage of reading strategies in the questionnaire (CABINDA, 2013). However effective use of reading strategies can only be determined by means of the analysis and discussion to which I follow suit in the present section.

Despite the evident range of cognitive, metacognitive and support strategies participants claim to use and are aware of (in manuals, textbooks and data collected; evidence of a reasonably high volume of reading strategies taught at UEM), the IELTS results revealed very low levels of text comprehension (see above) for both high and low scorers (Cif. CABINDA, 2013). This trend was also observed with the reading task resolution results in the think aloud verbal protocols as shown below. In theory reading strategies COG 1, 4, 9,10, and MET 1, 3,4,7,8, and possibly all SUP 1-5 were necessary for a successful result in IELTS. Evidence showed that its use did not result in high levels of comprehension.

Insights to comprehend how reading is processed in multilingual EFL contexts like the present are of insurmountable importance and, perhaps, these can feed onto Bernhardt's 2005 and 2011 compensatory reading model. TAM helped confirm that L2 readers 'did not seem to psycholinguistically guess their way through a text, testing hypotheses', but it was clear from the verbal protocols and observations that 'once second language readers made an initial decision, they guessed their way through that decision – not through the text' (BERNHARDT, 2005, p.135).

Bernhardt further stated that:

> Readers sometimes used the knowledge they had, and sometimes they did not. In some cases, it appeared that readers had no appropriate background knowledge and, nevertheless, achieved a high level of comprehension. These two features, [one being the issue of readers psycholinguistically guessing their way through a text, testing hypotheses and the other, knowledge]—essentially strategic features—did not appear to be part of the development process of reading; they were either at play or they were not; they emerged at times; they do not emerge at other times throughout the second language reading process.

Evident enough in the study is the correlation with reading strategy use rather than simply content or domain knowledge. The issue here would be whether what needed to be in play and 'emerge', that is, the adequate and effective use of reading strategies and elevated use of language and test completion skills, did not emerge, and thus could not have helped with better reading performance. Further comparative analysis with the results from the reading task resolution (Table 5) indicates that the trend is similar: none of the participants, high or low scorers in IELTS, had all the answers correct despite evidence of use of similar cognitive and metacognitive strategies and an overwhelming use of supply strategies. This finds corroboration in the Jiang and Kuehn (2001) study: by looking at the correlation between metacognitive reading strategies (one of the assets that should have emerged), and the use of reading strategies by first and second-language readers of English (grounds to compare with FL readers), they found that successful readers use larger numbers of cognitive and metacognitive reading strategies (as evidenced above), using a number of very important reading strategies (setting the purpose for reading, prediction, summarizing, questioning, use of text structural features, self-monitoring and so on) which learners have been found to use to a greater extent to plan, control and evaluate their own understanding of text. However, this was not the case with the participants in my study. The wide range of reading strategies did not facilitate the reading comprehension and task performance that could have been expected; *au contraire.*

TABLE 5: Comparing IELTS and TAM reading task results[viii]

No	Code	IELTS Test result (out 40)	%	Results from section 33-35 in IELTS (out of 3)	TAM reading task results (out of 3)	Gender
11.	SMH002	09	22.5	1(f)	1(f)	M
12.	CMH003	09	22.5	0	2(d;f)	M
13.	MRM004	08	20.0	0	1(e)	M
14.	MDD017	14	35.0	0	2 (d;f)	M
15.	CMT021	19	47.5	1(f)	1(e)	M
16.	ARM022	20	50.0	2 (b;d)	2 (b;d)	M
17.	YIT024	20	50.0	1 (d)	1(d)	F
18.	DIT026	21	52.5	2(d;f)	2 (b;d)	F
19.	BSG027	23	57.5	2(d;f)	2(e;f)	M
20.	JMM028	20	50.0	0	1(e)	M

Surprisingly, two participants who had scored very low marks in the IELTS (CMH003 and MDD017) scored better in the section of the IELTS used in the TAM reading task compared to their initial score and to their high scoring counterparts (CMT, YIT, JMM, DIT). This is not conclusive as it was Vidal's (2001) TAM study on writing tasks with Portuguese L1 speakers in this regard. Possibly the use of the very same text and exercise in the IELTS may have played a role in the trend

shown by CMH003 and MDD017: familiarity with text content and long term memory ability may have kicked in and helped them achieve high scores. Or this may have been sheer luck.

Notwithstanding the fact that all participants were aware of and used similar cognitive, metacognitive and supply strategies, in line with Sheorey and Baboczky's (2008), i.e. the use of bottom-up and top-down strategies, these findings are not sufficiently clear and conclusive for me to make the same claims; the major difference between good and weak readers is the greater use of top-down strategies by good readers resulting in a higher tendency to achieve the overall meaning of the text more successfully than poor readers. Similarly, Meng (2006) and Karbalaee (2012) reached the same conclusions in relation to strong and weak advanced EFL readers.

My study, correlates results from IELTS and TAM task completion. The correlation between a participant's purported use of certain set of reading strategies and being a good or a weak reader cannot be deemed clear or conclusive at this point since both categories of readers have used mostly metacognitive and cognitive strategies similarly and these were supported by a set of supply strategies dependent upon the reading situation. Similar to the studies conducted by Meng (2006) and Karbalaee (2012), a correlation between weak readers and metacognitive strategies was carried out to confirm whether weak readers use meta-cognitive strategies more frequently than good readers, which in turn would seem to indicate that higher level strategies are brought to bear when text processing is most difficult.

My results would seem to show a trend that essentially depicts good (if test results are used as a variable for comparison) and weak readers to use reading strategies similarly but with a higher rate of use for metacognitive strategies. However, the reading performance (comprehension and task resolution) did not provide strong indications of effective comprehension. One aspect worthy of note is that these metacognitive strategies were still largely unsuccessful in assisting with text comprehension and task resolution, indicating that other variables play a crucial role in meaning construction and that these need to be extracted and comprehended in FL. Perhaps this shows that these other variables, one being language knowledge, and lack thereof, may play a stronger inhibiting role in FL than in L2.

Is it perhaps that those with stronger L1 (Portuguese) literacy are able to more effectively compensate for 'impoverished second language processes' (Bernhardt, 2005, p.140)? If this is the case, then there is perhaps the need to redefine theory and further develop Bernhardt's 2005 compensatory model of reading, particularly as she calls for this in her 2005 paper.

The Meng (2006) and Karbalaee (2012) studies also found that both good and weak readers knew and used the same strategies, and employed bottom-up and top-down approaches (cognitive, metacognitive and supply). Thus, my deduction is that if Mokhtari and Reichard's MARSI (2002) and SORS (MOKHTARI and SHEOREY, 2002) is used as a comparative platform, the subscales, Global, Support and Problem solving strategies, are similarly taken into account. From my study, however, one small difference emerged, that regarding levels of use of different reading strategies which showed an almost equal ratio in the greater use of metacognitive, cognitive and supply strategies by good readers resulting in a higher tendency to achieve better comprehension of text (but these are very few indeed). Perhaps even more interesting are the results of participants YIT and JMM who showed not only a very

good command of the language and a high use of reading strategies but also a highly elaborated approach to task resolution in the *think alouds.* While they scored reasonably well in the IELTS, their TAM reading task results (using the same exercise) were rather disappointing (numbers 7 and 10 in Table 4) Could this show a tendency where good L2 readers seem to use a range of reading strategies but yet lack processing skills to perform at excellent rates? Or would this indicate that the TAM interfered in participants' processing in some way for very good processors? For instance, the discussion of the results shows clear evidence of participants' claims regarding use of strategies and this is consistent with those used by good readers, ranging from **Language knowledge and processing ability,** i.e. word recognition, proposition formation, semantics awareness of text structure, etc. to **Cognitive ability, i.e.** the use of prior knowledge, mother tongue, etc., and to **Metacognitive strategic competence** where the respondent claims to monitor comprehension process, evaluating and regulating strategy use to achieve maximum comprehension (see numbers #24, 25 and 26 in the questionnaire in Cabinda, 2013). Additionally, the use of such strategies as setting the purpose for reading, prediction, summarising, questioning, use of text structural features, self-monitoring- all important strategies for reading comprehension and which are used to a greater degree to plan, control and evaluate their own understanding was clearly evident in the findings on these two participants and these findings are in line with those in studies by Sheorey and Mokhtari (2001), Mokhtari and Reichard (2004), Schoonen *et al.* (1998), and Stevenson *et al.* (2003).

I would tend to agree with Vidal's (2002) claim that the relationships between [...] use of strategies and ratings of task performance when trying to correlate reading strategies use and awareness, and participants'/learners' test results are complex to explain and not as straight forward as they seem. Thus, while it is difficult for me to advance any conclusions at this stage, yet the data seem to have generated enough evidence to answer the initial research question What reading strategies are effectively used in an EFL multilingual context to construct meaning from text?

The data indicates that there is enough evidence to claim that the participants use a range of cognitive, metacognitive and supply reading strategies commonly used by bilingual and foreign language speakers, including code-switching (a feature considered to be unique to L2/FL biliterate learners; see Jimenez *et al.* 1995, 1996). Further, the data have shown that the participants use an array of top-down strategies and bottom-up strategies, also used by most students in multilingual and L1 contexts, but this evidence was not sufficiently conclusive for me to be able to claim that good readers used top-down strategies better or more effectively than their less competent counterparts and therefore comprehended meaning better. Here it should be borne in mind that the sequence of most and least used reading strategies (self-reported use) of FL readers in my study was inverse to that of L1 and SL readers in the Sheory and Mokhtari (2001) US study, and this is perhaps the reason for lack of adequate text comprehension evidenced by the participants in the present study. When Sheorey and Mokhtari's 2001 results are compared with mine, we can see that US and ESL students, in the context of academic settings, construe meaning as follows: they all attribute the same order of importance to cognitive, metacognitive, and support strategies in a descending order, irrespective of their reading ability or gender. This order is not reflected by FL readers in my study. The fact that they attribute importance to the types of

strategies in a descending sequence, from top to bottom, reveals a mixed trend that shows reading strategies reflected MRS and cognitive and supply strategies at the top, and at the bottom I found cognitive strategies. This is a significant finding given that the bottom five reading strategies of the FL participants in the present study are in the top five strategies in the study conducted by Sheorey and Mokhtari's (2001) with US and ESL students. These particular reading strategies are attributed to students (US and ESL) who are classified as having 'high' reading ability (SHEOREY and MOKHTARI, 2001, p. 442) and as such one could expect readers to rank them at the the bottom of the list rather than high on the list, and thus consider them as 'low' order reading ability strategies as the FL students in my study did. This suggests that reading strategies that are viewed as indicating 'high' reading ability may not necessarily be the same for FL students studying in a multilingual context with an array of languages, only one of which (L2) is used as medium of instruction in a formal education system.

Concluding, these findings show a negative trend: there is in fact a significant correlation between reading strategy use and awareness, and the dimensions and characteristics of good and successful FL readers, but no significant correlation with the RCT scores. So, recourse to Bernhardt's 2005 compensatory model that underlines a contemporary model of SL reading must firstly acknowledge the significant contribution of L1 reading ability to SL comprehension. Further, the model must enable a conceptualization of comprehension as consisting of different elements and influences, rather than simply raw grammar and vocabulary. She sees the reason for this being that linguistic codes from different social and educational settings 'realize their meanings with different surface structures (such as restrictive word order in English versus relatively free word order in German), and models have to acknowledge that to move toward higher levels of proficiency, readers must acquire processing strategies specific to the language at hand' (BERNHARDT, 2005, p.138).

Portuguese being a European Latin-based language, and deemed to be operating at levels similar to the examples Bernhardt has suggested above, but with the peculiarity of being a rather redundant and 'free style' type of language (my classification), I would expect similar conclusions to those drawn by Bernhardt (2005). Thus my question is whether, in terms of the particular kind of multilingual context of my study, with the array of Bantu languages (L1 for most participants but with no apparent formal instruction and oral rather than written based), could have played a role in the findings? Bernhardt (2005) points to an additional element for a 'viable model of second language reading'; as she puts it, 'this model must also concede that in the reading of cognate languages there is no such thing as "no knowledge" if the reader is already literate and, at the same time, admit that when switching to noncognate languages, the threshold is set at a very different point' (BERNHARDT, 2005, pp. 138-9). Thus if I take into account that Portuguese is to a certain degree a cognate language to English (word formation, word root, pronunciation of some words, subject-verb-object structure), one would expect comprehension by L2/FL readers not to faulter to the extent shown by the data. However, Bantu languages (oral) could have played a role so should be taken into account more seriously.

As Bernhardt (2005, p. 177) suggests, a more satisfying conceptualization of the second language reading process lies in the concept of compensatory processing: in other words, there is a need to understand and/or take into account the modelling of 'how knowledge sources assist or take over for other knowledge sources that are

inadequate or non-existent, i.e., what they use to compensate for deficiencies.' Could this be an issue to emphasize in SLA and FL curricula and could it perhaps assist curriculum designers and teachers in comprehending the hidden and more complex reasons behind the failure of students to do better in tasks and to construct meaning more competently? Bernhardt's three-dimensional model captures the current knowledge base regarding literacy knowledge, language knowledge with a particular emphasis on vocabulary and on dimensions of this knowledge under investigation but not yet explained. And one aspect to be borne in mind, and which is valid for my study, is that, as Bernhardt (2005) explains, 'knowledge sources are not additive, but rather operate synchronically, interactively, and synergistically' and this model 'intends to revitalize the conceptualizations of the second language reading process as a juggling or switching process in cognition' (BERNHARDT, 2005, p. 141). I would argue that explanations for my findings can be found in the progress made in research in the field of second language reading. Bernhardt (2005) has mentioned this field as having 'progressed at a remarkable speed and is no longer the mere imitator of first language research and models'. However, she warns of the continued existence of 'formidable hurdles' (BERNHARDT, 2005, p.142).

The holistic and mixed methods approach employed in my study was meant to deliberately shy away from studies that 'conduct literacy research variable by variable' and that, while remaining 'pristine', are rendered 'atheoretical', as Bernhardt put it:

> Several formidable hurdles still exist, however, that stymie research progress in the area. It remains much easier to conduct literacy research variable by variable. Although such research is pristine, it is also atheoretical. Future research must account for literacy knowledge and second language proficiency against the backdrop of an array of other variables. (BERNHARDT, 2005, p. 141)

Given Bernhardt's advocacy for more holistic – less 'pristine'- research which takes into account an 'array' of variables operating simultaneously, and in an interrelated way, one needs to take into account future trends in research in the field, and try to 'account for literacy knowledge and second language proficiency against the backdrop of an array of other variables'.

What of significance has in fact been revealed in the course of this research? Reading in FL, and the use of reading strategies to process text and task resolution, remains an issue to be handled with care. However, I hoped that, as a person who understands and speaks at least three of the languages at play in the study, and aware of the array of Bantu languages participants use in their daily lives, I would be in a position to bring a new dimension to the understanding of reading in a multilingual context such as mine.

Although not conclusive as yet, it has been clear from the findings that the use by participants in this study of a battery of reading strategies (confirmation of code-switching, translation, sight translation and cognates, and other supply strategies – 'basic support mechanisms intended to aid the reader in comprehension' (MOKHTARI and SHEOREY, 2002, p. 4) used by bilingual learners did not necessarily result in better comprehension, but indicated that these strategies were activated by participants as a means to compensate for some kind of lack on their parts. Bernhardt (2005) had already warned of the complexity of this process, and the dangers of ignoring or underestimating this:

> A huge portion of the second language reading data base, the variables introduced by these multiple languages have never been acknowledged. The field will not know truly rich research and have confident knowledge until the data base acknowledges and reveals cross lingual information. (BERNHARDT, 2005, p. 142).

It could be that this was lacking in my study, that I needed to capture more effectively and sensitively what goes on in the mind of the participant when he/she switched to using/or called upon her L1 Bantu language in order to help her to construe meaning. It was evident that this switching occurred mostly when new lexical items and/or ones that did not have similar structures to those in Portuguese were encountered and could be confounded and send mixed signals to the brain, resulting in inadequate processing of meaning. Sounding out words (the ones mentioned above) also aided participants with processing meaning and provided them with the confidence to continue reading, but did I capture sufficient of these data to feed the 50% unexplained variance in Bernhardt's three-dimensional model? The answers are inconclusive as yet but I feel that a small step forward has been made.

Although representing a small step forward in FL reading research, with a certain degree of confidence I would claim that the study has produced sufficient additional evidence (additional to that from recent studies based on Bernhardt's 2005 model) regarding the level of participants' awareness of the strategies they use when reading in the foreign language. However, I would argue that, despite the use of the TAM, not enough evidence was produced to show whether these reading strategies were used effectively, thus making it hard to provide a conclusive and definite answer to question (b) for all participants, both good and weak readers. There is however, evidence showing that the reading strategies (self-reported and actually used in the TAM) did not aid poor readers (the majority in the study if the scores can be used to distinguish good from poor readers). Only a very small number of participants yielded results that can be deemed reasonably significant; these only just surpass the borderline of 50%. Participants having L1as Portuguese and/or a Bantu language did not seem to influence the results, and apparently neither did the gender issue. It was clear though that, no matter how well these reading comprehension strategies seemed to be used by participants, their use did not result in good results in the reading comprehension tasks (IELTS and TAM task completion). This indeed constitutes a complex picture which appears to raise more questions than answers and could be attributed to the complexity of the text and/or the task (the nature of IELTS and TAM task resolution vs excellent results on the Trial Pilot Test which is more like the normal assessment participants undergo at university in their English classes), and perhaps on the participants' knowledge of, or familiarity with, English and/or academic genres. While, as has been mentioned, the use of reading strategies was evident, the question arises as to whether this was adequate, and effective enough.

The results seem to indicate otherwise despite these evident traces of the use of a battery of cognitive, metacognitive and supply reading strategies. Responses to the subset of questions below may shed some light on this apparent contradiction. In view of the set objective (one of them), to shed light on the '50% unexplained variance' in Bernhardt's model, one could be tempted to advance here that participants' insufficient exposure to the type of reading task, together with their lack of adequate and effective use (practice) of reading strategies to source out information/data from text could in

part explain the findings. Thus the findings could indicate that, in order to improve students' FL reading competency, issues pertaining to the provision of a uniform and/or similar educational background or reading experience to tertiary learners would be required to be addressed, and perhaps a radical post-colonial change on the type of assessment tools required initiated. Bernhardt (2005), for instance, called our attention to this aspect:

> It is clear that the language of assessment with L2 populations is critical (Shohamy, 1982, 1984, for example). If readers are assessed in comprehension tasks in their stronger language (almost always L1 until the highest proficiency/fluency levels), their comprehension seems to be much more significant than when it is measured within the context of their impoverished second language skills. (BERNHARDT, 2005, p. 141)

How this could be done presents a serious stumbling block. Yet evidence collected in the course of the present study has clearly shown participants' recourse to L1 (Portuguese) during text reading to build comprehension prior to the TAM task completion, the issue of compensation mentioned in Bernhardt's 2005 review. This leads me to the next section which presents an additional set of questions, and where I explore how participants' performance could have been influenced by their L1 origin.

CONCLUSIONS

At the onset of this study I proposed to provide an additional lens through which to view and explore issues related to reading comprehension strategies. TAM verbalizations showed an evident pattern regarding the constant use of reading strategies. Data from actual thought disclosure revealed that all participants used cognitive, metacognitive and supply reading strategies and were aware of their use of these reading strategies and problem solution skills, which is in consonance with studies that have correlated success in reading with the use of metacognitive and cognitive reading strategies by successful first and second-language readers of English (SHEOREY and MOKHTARI, 2001; MOKHTARI and REICHARD, 2004; SCHOONEN *et al*., 1998; STEVENSON *et al*., 2003; MENG, 2006; PANG, 2008). Yet lack of success in task completion (RCT, IELTS; TAM) is an issue to bear in mind when comparing FL readers in a multilingual context with an array of languages, and L1 speakers (English) despite the similar behaviours.

The identified strategies revealed to be suitable to fill in the gaps in Bernhardt's 2011 three dimensional model and as such part of the '50% unexplained variance' given the evident use of a battery of reading strategies by all participants (weak and strong), be it in different frequencies than L1 readers, and also used those known to be unique for biliterate and multilingual FL readers, i.e. code switching, translation and the use of cognates, and a novel supply strategy, i.e. sight-translation.

Further I can conclude that weak readers showed inconclusive patterns regarding the effective use of metacognitive, cognitive and supply strategies, but both good and weak scorers (readers) employed all identified strategies in almost the same manner where the greater use of metacognitive and supply strategies by good readers resulted in a higher tendency to achieve better comprehension of text, as Meng (2006) and Karbalaee (2012) had earlier observed for good and weak readers and the use of bottom-up and top down strategies.

There is, however, the need to more exhaustively compare these strategies using the taxonomies applied in the present

study and from this propose a much more conclusive suggestion and/or position. The effective use of reading strategies of participants in my study was, however, to some extent atypical of most studies regarding cognitive and metacognitive reading strategies use by proficient L1 and ESL speakers when grouped together to define a given pattern. The trend observed showed that FL non-proficient readers in my study tended to place and use those metacognitive reading strategies that are closely related to the improvement of reading ability rather the application of such ability to attain comprehension. FL participants used (top to bottom) metacognitive and cognitive and supply reading strategies (most relevant for good L1 and ESL readers) with less frequency, and as a result had difficulties in attaining good comprehension of text and results. This trend is also unique because supply strategies that were effectively and chiefly used during TAM by FL readers are also placed in the bottom rank (self-reported rank). There is an evident contradiction between what FL participants claim to use and what they actually use. The reality shows that they rely to a medium to high degree on supply strategies to construe meaning.

As in many of the other studies discussed above, the current non-proficient FL participants have shown, similar to their proficient bilingual and biliterate readers, a use of the same supply strategies, namely code mixing, translation, use of cognates (JIMENEZ *et al.,* 1995, 1996) to construe meaning, but in the current study these did not have a significant correlation with RCT scores per se. Similarly, there is no correlation with the trial pilot test and the TAM task completion exercise. Nor did gender or L1 factors have any specific correlation with participants' RCT scores or their effective use of reading comprehension strategies – there were very few differences indeed. Finally, this atypical (in terms of previous studies) picture evidenced in the current study, clearly revealed reliance on supply strategies (mainly on code-switching and translation), the inverse picture of the most and least used reading strategies when compared to L1 speakers, and ultimately the use of sight translation (a technique used in translation sciences) could be explored for pedagogic purposes but would need further studies to provide a solid ground for this.

REFERENCES

ALANEN, R. Input enhacement and rule presentation in second language acquisition. In R. Schmidt (Ed.), **Attention and awareness in foreign language learning and teaching**, pp.259-302. Honolulu: University of Hawai'I Press, 1995.

BERNHARDT, E. B. Challenges to reading research from a multilingual world. **Reading Research Quarterly***,* v.38, n.1, p.112-117, 2003.

BERNHARDT, E. B. Progress and procrastination in Second Language Reading. **Annual Review of Applied Linguistics***,* v.25, p.133–150., 2005.

BERNHARDT, E.B. **Understanding advanced second-language reading**. New York: Routledge, 2011.

BOWLES, M. A. & LEOW, R. P. Reactivity and type of verbal report in SLA research methodology. **Studies in Second Language Acquisition**, v. 27, pp. 415-440, 2005.

BLOCK, C.C. & ISRAEL, S.E. The ABCs of performing highly effective think-alouds**. The Reading Teacher**, v. 58, no. 2, pp. 154-167, 2004.

CABINDA, M. The need for a needs analysis at UEM: Aspects of and attitudes towards change. **Linguistics and Education**, v.24, pp. 415– 427, 2013.

CABINDA, M. Purported use and Self-awareness of Cognitive and Metacognitive Foreign Language Reading Strategies in Tertiary Education in Mozambique.

Afrika Focus, v. 29, 1, 2016 – pp25-47, 2016.

CALERO-BRECKHEIMER, A., & GOETZ, E. T. Reading strategies of biliterate children for English and Spanish texts. **Reading Psychology**, v.14, n.3, p.177-204, 1993.

COHEN, A. D. **Strategies in Learning and Using a Second Language**. Harlow, Essex: Longman,1998.

COHEN, A. D. Verbal Protocols as a Source of Insights into Second Language Learner Strategies. **Applied Language Learning**, v. 7, n. 1,2, pp. 5-24, 1996.

DAVEY, B. Think Aloud: Modelling the cognitive processes of reading comprehension. **Journal of Reading**, v. 27, n.1, pp. 44-47, 1983.

ERICSSON, K. ANDERS & HERBERT A. SIMON. **Protocol analysis:** Verbal reports as data (revised ed.**).** Massachusetts: MIT Press, 1993.

ERICSSON, K. A. AND SIMON, H. A. Verbal reports as data. **Psycholinguistical Review,** v.87, n.3, pp. 215-251,1980.

ERICSSON, K. A. & SIMON, H. A. **Protocol analysis: Verbal reports as data.** Cambridge, MA: MIT Press, 1984.

ERICSSON, K. A. Concurrent verbal protocols on text comprehension: A Review Text, vol. 8, no. 4, pp. 295-325, 1988.

ERICSSON, K. A. & HERBERT, A. S. **Protocol analysis**: verbal reports as data. Cambridge, Massachusetts: MIT Press, 1993.

ERICSSON, K. A. Towards a procedure for eliciting verbal expression of non verbal experience without reactivity: Interpreting the verbal overshadowing effect within the theoretical framework for protocol analysis. **Applied Cognitive Psychology**, v. 16, pp. 981-987, 2002a.

ERICSSON, K. A. **Protocol Analysis and Verbal Reports on Thinking: An update and extracted version.** 2002b. Disponível em http.//www.psy.fsu.edu/faculty/ericsson/ericsson.proto.thnk.html.

FENG, X, MOKHTARI, K. Strategy use by native speakers of Chinese reading easy and difficult texts in English and Chinese. **Asian Journal of English Language Teaching**, v. 8, p.19- 40, 1998.

FREEMAN, Y. & FREEMAN, D. Struggling English Language Learners: Keys for Academic Success, 2003. Available at : https://www.researchgate.net/publication/234587599_Struggling_English_Language_Learners_Keys_for_Academic_Success/stats. Accessed 11/11/2019.

KODA, K. **Insights into Second Language Reading:** A Cross-linguistic Approach. London: Cambridge Universit Press, 2005.

GARCIA, G. N. **Lessons from Research: What Is the Length of Time It Takes Limited English Proficient Students To Acquire English and Succeed in an All-English Classroom?** Issue Brief No. 5, 2000. Availeble in https://www.researchgate.net/publication/234667553_Lessons_from_Research_What_Is_the_Length_of_Time_It_Takes_Limited_English_Proficient_Students_To_Acquire_English_and_Succeed_in_an_All-English_Classroom_Issue_Brief_No_5. Accessed 11/112019

JIANG, B. AND KUEHN, P. Transfer in the Academic language development of post-secondary ESL students. **Bilingual Journal**, 2001.

JIMÉNEZ, R.T., GARCÍA, G.E., & PEARSON, P.D. Three Children, Two Languages, and Strategic Reading: Cases Studies in Bilingual /Monolingual Reading. **American Educational Research Journal**, v.32, p. 67-97, 1995.

JOHNSTONE, C. J.; BOTTSFORD-MILLER, N. A.; & THOMPSON, S. J. **Using the think aloud method (cognitive**

labs) to evaluate test design for students with disabilities and English language learners (Technical Report 44). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes, 2006.

KARBALAEE KAMRAN, S. Does reading strategy use predict and correlate with reading achievement of EFL learners? **International Journal of Research Studies in Language Learning**, v. 2, n. 2, pp. 29-38, 2013.

KIBBY, M. W**.** Thinking Aloud and Reading Comprehension'. **Center for Literacy and Reading Instruction, Univ. Buffalo**, 1997. Disponível em http://wwwreadingcenter.buffalo.edu/center/research/think.html

KUCAN, L. & BECK, I. L. Thinking aloud and reading comprehension research: inquiry, instruction and social interaction**. Review of Educational Research**, v. 67, n.3, pp. 271-299, 1997.

LEOW, R. P. The effects of amount and type of exposure on adult learners' L2 development. **Modern Language Journal**, v.82, p.49–68, 1998a.

LEOW, R. P**.** Toward operationalizing the process of attention in SLA: Evidence for Tomlin and Villa's 1994 fine-grained analysis of attention. **Applied Psycholinguistics**, v.19, p.133–159, 1998b.

LEOW, RONALD P. Attention, awareness, and foreign language behavior. **Language Learning**, v.51, pp.113–155,2001a.

LEOW, RONALD P. Do learners notice-enhanced forms while interacting with the L2? An online and offline study of the role of written input enhancement in L2 reading. **Hispania,** v.84, pp.496–509, 2001b.

LEOW, R. P.; & MORGAN-SHORT, K. To think aloud or not to think aloud: The issue of reactivity in SLA research methodology. **Studies in Second Language Acquisition**, v. 26, pp. 35-57, 2004.

LEOW, R. P. A study of the role of awareness in foreign language behaviour: Aware versus unaware learners. **Studies in Second Language Acquisition**, v. 22, pp. 557–584, 2000.

YOSHIDA, M. Think-Aloud Protocols and Type of Reading Task: The Issue of Reactivity in: BOWLES, M. *et a.l* (ed.). **Selected Proceedings of the 2007 Second Language Research Forum**. Somerville, MA: Cascadilla Proceedings Project, 2008. Pp. 199-209.

MALCOLM, D. Reading strategy awareness of Arabic-speaking medical students studying in English. **System**, v.37, p.640-651, 2009.

MOKHTARI, K. & REICHARD, C. Assessing students' meta-cognitive awareness of reading strategies. **Journal of Educational Psychology**, v. 94, no. 2, pp. 249-259, 2002.

MOKHTARI, K. & SHEOREY, R. Measuring ESL students' awareness reading strategies**. Journal of Development Education**, v. 25, n. 3, pp. 2-10, 2002.

MOKHTARI, K.; & REICHARD, C. Investigating the strategic reading processes of first and second language readers in two different cultural contexts. System, v.32, pp.379–394, 2004.

MOKHTARI, K.; DIMITROV, D.; & REICHARD, C. Revising the Metacognitive Awareness of Reading Strategies Inventory (MARSI) and testing for factorial invariance**. Studies in Second Language Learning and Teaching**, v. 8, n. 2, pp. 219-246, 2018.

O'MALLEY, J. M. *et al.* Learning strategies used by beginning and intermediate ESL students. **Language Learning,** v. 35, pp. 21-46, 1985.

O'MALLEY, J. M., & CHAMOT, A. U. Learning strategies in second language acquisition. Cambridge, UK: Cambridge University Press.

Language Learning, v.35, pp. 21-46, 1990.

OXFORD, T., BONGAERTS, T., AND KELLERMAN, E. The use of retrospective verbal reports in analysis of compensatory strategies. Faerch, C. and Kasper, G. (Eds.), **Introspection in Second Language Research. Clevedon.** UK: Multilingual Matters, pp.213-229, 1986.

PANG, J. Research on good and poor reader characteristics: Implications for L2 reading research in China. **Reading in a Foreign Language April** v. 20, n. 1, pp. 1–18, 2008.

PRESSLEY, M. & AFFLERBACH, P. **Verbal protocols of reading**: the nature of Constructively Responsive Reading. Hillsdale, NJ: Erlbaum, 1995.

SCHOONEN, R.; HULSTIJN, J.; & BOSSERS, B. Metacognitive and Language specific knowledge in native and foreign language reading comprehension: an empirical study among Dutch students in Grades 6, 8 and 10. **Language Learning**, v. 48, no. 1, pp. 71-106, 1988.

SHEOREY, R., & MOKHTARI, K. Differences in the meta-cognitive awareness of reading strategies among native and non-native readers. **System**, v.29, pp. 431-449, 2001.

SMITH, P.; & KING, J. R. An Examination of Veridicality in Verbal Protocols of Language Learners. **Theory and Practice in Language Studies**, v. 3, n. 5, pp. 709-720, May 2013.

SOI MENG, P. **Strategy use in advanced EFL readers**: Identifying and characterizing the patterns of reading strategies employed by tertiary EFL students. Unpublished Doctoral dissertation, Chinese University of Hong Kong, Hong Kong, 2006.

STEVENSON, M.; SCHOONEN, R.; & DE GLOPPER, K. Inhibition or Compensation? A multidimensional comparison of reading processes in Dutch and English. **Language Learning**, v. 53, n. 4, pp. 765-815, 2003.

VIDAL, R. T. Is there a relationship between reported language learning strategy use, actual strategy use and achievement? **Linguagem & Ensino,** v. 5, n. 1, pp. 43-73, 2002.

ZHANG, L. J.; & WU, A. Chinese senior high school EFL students' meta-cognitive awareness and reading-strategy use. **Reading in a Foreign Language**, v. 21, n. 1, pp. 37-59, 2009.

[i] The act of thinking aloud in this context potentially triggering changes in learners' cognitive processes while they are performing the task (Leow & Morgan-Short, 2004; Bowles & Leow, 2005; Yoshida, 2008; Cabinda, 2016)

[ii] "I pay attention when someone is speaking English" and "I think about my progress in learning English" were those most used, and the lesser used ones were "I plan my schedule so I will have enough time to study English". The following indicates the kind of Memory strategies most used by participants: "I think of relationships between what I already know and new things I learn in English", while "I use flashcards to remember new English words" indicated the lesser used strategies. such affective strategies as, "I try to relax whenever I feel afraid of using English", and "I encourage myself to speak English even when I am afraid of making a mistake" were both said to be more frequently used, while "I write down my feelings in a language learning diary" was reported as never, or almost never, being used Vidal (2002, p. 61-62).

[iii] See Table 2, Two females and eight males, who had scored among themselves a mean of -16.3 in the IELTS reading comprehension test which was

almost identical to the overall mean of -16.57 for the whole group (CABINDA, 2013 for further details).

[iv] A tool for measuring native English speaking students' awareness and conscious use of reading strategies while reading academic or related school materials; also a revised version, MARSI-R.

[v] 'to coach; coaching' can be understood in the present study as an innovative term to be used interchangeably with *train* and *trial, warm-up*; also, in the context of a study using think-alouds, as an act to provide explicit instructions to subjects/participants.

[vi] Stress placed by Cohen, 1996, p.16

[vii] Here one would be concerned with the effect of using the same text for task completion (to assess reading comprehension). Because literature (do the extent of the search carried) does not cover this aspect, it is hard to judge whether the results (TAM task completion) may have been affected or not. The use of the same text and task has however helped with a platform for comparative purposes (see Table 4).

[viii] Numbers in columns 5 and 6 represent the correct answers given with the respective choices (A-G).