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Writing Strategies across Four Disciplines among Tunisian University Students

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Abstract

English is now widely established as the world language for information exchange, communication, and conducting research (Cenoz & Jessner, 2000; Wood, 2001); and developing satisfactory writing strategies is crucial. Writing is a challenging skill, the complexity of which is mainly felt at University Level. This paper investigated writing strategies among 147 Tunisian university students, majoring in Hard Science and Soft Science courses (English, French, Medicine and Engineering). Its objective was to verify to what extent factors such as academic field, gender, and proficiency interact with each other and with writing strategies. A Survey of Writing strategies was adopted as the main investigating instrument. Findings reveal that Language majors are higher users of strategies than other majors, yet this does not seem to impact their proficiency level. The results suggest raising students' awareness of Writing strategies by teaching them explicitly and drawing their attention to them.

1. INTRODUCTION

Writing skill is not less challenging than Reading. University students display much reluctance in completing a writing task (Turner, 2015). Much research confirmed that students' discourse comprehension and production levels are below expected standards of text (Parodi, 2007). Within higher education, learning is evaluated, especially through expository and argumentative writing. Students are expected to develop critical thinking through a correct synthesis of large amounts of information (Roerden, 1997). The aims of this study are a) To infer the range of writing strategies used by Tunisian university students, and b) To compare the proficiency level of students in writing an argumentative essay. This paper seeks to confirm or refute the following hypotheses that there is no difference between university majors in their use of Writing strategies and that Hard science is not more proficient than Soft Science students in producing an argumentative paper. Equally, it attempted to observe if there is a gender difference in the use of Writing strategies.

2. LITERATURE REVIEW

The argumentative writing process and strategies

In education, and especially at the academic level, learners are often required to develop written products, mainly argumentative ones. Producing an argumentative text consists in a display of the choices and justifications that occur in the reasoning process. The text will not describe the process but will present the first conclusions that are the product of the reasoning process. The reasoning structure contains a set of strategies that vary with the task: stating argument, stating assertion, stating fact, presenting specific case, stating reason,

stating outcome, comparing and/ or contrasting, elaborating and/or clarifying, stating conclusion, and stating qualifiers. These operators describe the protocol contents of the reasoning structure.

Walton (2006, p. 1) explains that the term "'argument' is used in a special sense, referring to the giving of reasons to support or criticize a claim that is questionable, or open to doubt. To say something is a successful argument in this sense means that it gives a good reason, or several reasons, to support or criticize a claim".

Writing argumentative essays and using suitable arguments require a good command of many skills. It is necessary for students to learn how to interpret, select, organize and use information in order to produce knowledge. De Pinho and Álvarez Pereira (2009) observe that persuasion plays a crucial role in our increasingly global and competitive society and argumentation is one of the most valued competencies in educational, academic, professional, political, and economic contexts. Dialogism, reflexion, processing, and appropriation of the information take place through argumentation and permit knowledge construction (Emmel, Resch & Tenney, 1990).

In some classroom contexts, little importance is given to the learning of these strategies, and students are limited to collecting and storing information. Students have revealed difficulties in structuring and organizing information because of several lacks in reading and writing competences (National Research Council, 2012). And in many situations, the teacher plays the role of a transmitter of information and students' evaluation is not taken into consideration despite its importance. Creme and Lea (2008) observe that transmission and storage of information are preferred over the processing of students' opinion and evaluation, which requires deeper and more extensive learning on the part of the student-writer. They argue that the teaching model implemented in the majority of classrooms within higher education is no longer sustainable.

Writing Strategies: Definitions

Writing strategies have been subject to different taxonomies and classifications (Goctu, 2017). In a synthesis of previous classifications, Mu (2005) established a complete list of ESL writing strategies. These were classified into 5 categories: rhetorical, metacognitive, cognitive, social, and effective. However, in relation to the current investigation, a higher interest will be on rhetorical, cognitive, and metacognitive strategies.

Cognitive writing strategies are labeled as "mental operations used by learners [writers] to learn new information and apply it to specific tasks" (Mu, 2005, p. 4). Mu (2005) explains that constituents of strategies may vary from one study to another, due to the variety of factors that might impact writing processes. Hsiao and Oxford (2002, p. 368) point out that "exactly how many strategies are available to learners to assist them in L2 learning and how these strategies should be classified are open to debate". Nonetheless, despite their disparity and their various labeling in the different studies, most studies seem to have identified the most recurrent cognitive strategies.

Ehrman, Leaver, and Oxford (2003, p. 317) define metacognitive writing strategies as "strategies that enable students to overcome writing difficulties and anxiety". These involve planning on writing, goal setting, preparing for action, focusing, using schemata, activity monitoring, assessing its success, and looking for practice opportunities by writers to help them plan, generate, process, and present information. In other words, these strategies permit the writer to raise his/her self-awareness in relation to the writing process and evaluate his/her written product. Goctu (2017, p. 86) describes planning, monitoring and evaluating as major Metacognitive writing strategies:

(i) Planning as a writing stage aims to focus on the purpose, audience and content and may also involve the choice of keywords and tense; while

(ii) Monitoring consists of controlling the writing process. It involves strategies such as verifying the organization, content and grammar structures, among other global features.

(iii) Evaluating occurs after the two previous strategies and involves the re-examination of the different features characterizing the written product.

Goctu (2017, p. 82) states "Among all the learning strategies, metacognitive strategy is a higher-order executive skill which contains planning, monitoring and evaluating". He perceives writing as a process the success of which is mainly based on the good command of the mentioned strategies since the latter permits the learner to develop efficiency. The writer uses these global strategies to think about and reflect on what she/he is writing.

Various scholars agree that cognitive and metacognitive strategies are not independent strategies but are used simultaneously by the writer while performing a task (Wenden, 1991, Mu, 2005). Diaz et al. (2017) confirm Cook's (2008) view that: "The difference between both strategies is that the former (cognitive) is used to support development in learning and the latter (metacognitive) to monitor and control learning. In fact, cognitive and metacognitive strategies are not independent from one another; they work together while the subject is performing a task." (p. 90). Raising students' and teachers' awareness about these strategies might have a significant impact on improving writing proficiency (Goctu, 2017; Diaz et al., 2017).

In an investigation of writing strategies among 21 EFL Chilean pre-service teachers, Diaz et al. (2017) observed that participants differed in their use of writing strategies before and after a process-based writing intervention. Before the intervention participants displayed a recurrent use of strategies such as reasoning, elaborating ideas (cognitive strategy), revising (metacognitive) and code-switching, and organizing (rhetorical). After the process-based writing, intervention participants displayed a different and more efficient use of writing strategies that led to better writing performance.

Writing Strategies and Variables

Since the mid-1980s, much of the literature has emphasized the relationship between factors and learning strategies. Politzer (1983), Politzer and McGroarty (1983) and Oxford (1989) point out that good language learners adopt strategies in relation to various variables, such as their learning stage, personality, age, and purpose for learning the language. As the main focus of the current study is on the independent variables, Gender, Specialism and Proficiency, the following section attempts to review the studies that have had similar interests.

Strategies and Gender

The impact of Gender on strategy use and choice has been statistically measured by different researchers (Oxford, Nyikos & Ehrman, 1988; Oxford & Nyikos, 1989; Oxford & Ehrman, 1995, Lee & Oxford, 2008). The vast majority of these studies revealed that strategies are more frequently used by females than by males and often with a larger variety of language learning strategies, with a preference for affective and social strategies. Lahuerta Martínez (2008) demonstrates the differences between male and female students in their self-assessed strategy use. The latter tend to report significantly higher frequency use of support reading strategy than the former. Yet, Lee and Oxford (2008) refute the confirmed claim. They investigated different variables, such as gender, major, educational level and importance of English in language learning strategies. Lee and Oxford (2008) explain that gender may predict strategy use if learning strategies interfere with other variables such as educational level or self-image.

The impact of the academic speciality on strategy use

A great deal of previous research into learning strategies has also focused on the impact of academic major on strategy use. Peacock and Ho (2003) investigated the relationship that might exist between strategy use and different disciplines. In a large investigation of 1006 students majoring in eight disciplines (Building, Business, Computing, Engineering, English, Maths, Primary Education and Science), the research confirms the

results obtained by Oxford and Nyikos (1989). Peacock and Ho (2003) identified a strong correlation between language learning strategy use and the subject field. They found that English (N=79) and primary education majors (N=107) were the highest users of strategies in comparison to the other majors (Science, Math, Business, Engineering and Building); while Computer learners were the lowest users of strategies. The latter revealed a clear preference for cognitive, metacognitive and social strategies than majors of other disciplines. An interview with 48 students permitted to determine that motivation was a major factor explanation behind the discrepancy. Lee and Oxford (2008) refute the claim that Specialism has an impact on strategy use and have concluded that it does not significantly influence awareness. Even though Humanities students used metacognitive strategies (X=2.77) slightly more often than science and engineering majors (X=2.69), the difference between the two groups was not significant. Consequently, like gender, academic field "turned out not to affect strategy use and awareness alone, unless it interacts with other variables." (Lee & Oxford, 2008, p. 24)

Proficiency and Writing

Proficiency is one of the variables that have been largely investigated (Oxford & Nyikos, 1989; Peacock, 2001, Peacock & Ho, 2003, Lee & Oxford, 2008; Majid, Azman & Jelas, 2010). Most studies not only identified a correlation between proficiency and strategy use but also highlighted the role of other variables such as type of tasks, motivation or awareness of strategies. Peacock and Ho (2003) observed that low proficient students used fewer learning strategies, but they also correlated this result with students' lack of interest in the English language. On the other hand, high proficient students displayed a high use of learning strategies and motivation to improve their language abilities.

Due to students' significant problem with writing, much research has attempted to identify the relationship between writing strategies and proficiency level (Sasaki, 2004, 2007; Khaldieh, 2000, Raoofi et al., 2014). This issue has been investigated by different linguistic perspectives. Nonetheless, most studies compared L1 writing processes with L2, or attempted to delineate the difference between proficient and less proficient writers.

In a foreign language learning context, Khaldieh (2000) investigated written products by 43 American university students who were learning Arabic as a foreign language (AFL). The study aimed to determine writing strategies used by proficient and less proficient students when developing argumentative essays and to identify the main reasons behind the discrepancy. Strategies were classified according to Oxford's classification. They all used the strategies they considered to be necessary for persuasive writing, such as planning and outlining. Yet, discrepancy lies mainly at the psychological level where less proficient students experienced a high level of anxiety and frustration and unveiled a negative attitude towards the task. This attitude impacted their language proficiency level and resulted in low-quality writing. Khaldieh (2000, p. 529) reports: "Students' insufficient vocabulary intensified their frustration and contributed significantly to their inability to successfully complete the writing task. Less-proficient students tend to resort to translation as a writing strategy to develop their ideas, still, translation technique seemed to delay the writing skill development hence the low quality of written products.

Conversely, proficient students displayed more self-confidence and revealed to use strategies more consciously and effectively than their less-proficient peers. Proficient writers revealed a better command of language and linguistic structures. They employed a variety of vocabulary and new language structures and were aware of the rhetorical rules; which resulted incoherent writing and meaningful texts. Khaldieh (2000, p. 531) notes that "Taking risks, practising, and creating freely with the newly learned language structures were other characteristics that distinguished the proficient and less-proficient writers in this study".

The study by Khaldieh (2000) comes to refute the claim that less-proficient learners do not use suitable strategies. Despite the use of appropriate techniques, writing deficiency

may have psychological reasons which may hinder writing skill development and language proficiency, and generate in low quantity and quality written products.

Raoofi et al. (2014) investigated the use of writing strategies among L2 undergraduate University students. (N=21). Interviews with participants revealed that all participants reported using writing strategies such as planning, organizing ideas, monitoring revising and evaluating, in addition to effective and social strategies. However, proficient students used more metacognitive writing strategies than less skilled ones. Additionally, skilled students attempted to write longer texts, while low achievers reported having difficulties in putting ideas into paragraphs.

In line with previous research, Raoofi et al. (2014) maintain that awareness and efficient use of strategies by skilled learners are related to explicit writing instruction. They indicate it "to be very effective in helping less-skilled students/ writers to raise their metacognitive awareness about L2 writing" (p. 42). This would permit students, with low writing ability, to make better use of strategies related to efficient writing.

Obstacles to efficient writing might be due to "incompetence in syntax, coherence, idea expansion, content selection, topic sentence, rhetorical conventions, mechanics, organization, lack of vocabulary, inappropriate use of vocabulary" (Fareed et al., 2016, p. 82). Yet, these obstacles may also vary according to the aims of productive tasks. De Pinho and Álvarez Pereira (2009) strongly recommend adopting and implementing different classroom activities that will provide students with more localized didactic instruction and advice. They highlight the necessity to implement and develop within higher education explicit teaching of writing, imposing new dynamics, where the learning process is carried out "with" the student before being done "for" the student.

Though the different studies have been carried out at different points in time and investigated writing strategies from different perspectives, all scholars highlight the importance of explicit genre instruction. It is also necessary to mention that writing proficiency can also be affected by the interaction of writing strategies.

3. METHODOLOGY

Echoing Peacock and Ho's (2003), the current investigation attempts to identify the difference of strategy use across four academic disciplines among Tunisian university students. Yet, unlike previous studies, Mokhtari and Sheorey's (2002) classification of strategies is used in the current study. A multi-method design was adopted to reach valid and reliable results and address the research questions.

Population

147 Tunisian University students majoring in four different disciplines (Soft Sciences: English and French, Hard Sciences: Medicine and Engineering) participated in the Survey. At the University Level, the number of English hour sessions per week differs from one subject to another. All the students are exposed to English for a minimum of 2 hours per week in all their higher studies, apart from English majors whose all courses are presented in English.

Instrument

Research studies on learning strategies were predominantly quantitative in nature and were useful in identifying variables that seemed to affects strategies. Most research that evaluated Writing strategies was through the Strategy Inventory for Language Learning (Khaldieh, 2000; Al-Mashour, 2003). In the current survey, the investigator felt the need to design a questionnaire relative to writing strategies. The fieldworker focused on documentation that dealt with guidelines and techniques of the argumentative essay writing in order to identify strategies. The purpose of the questionnaire is to find out what kind of strategies students use when writing argumentative essays. In order to enhance the validity of the questionnaire, the fieldworker consulted various documents dealing with writing

strategies. Survey of Writing Strategies (SOWS) is an initial and very preliminary questionnaire (Appendix 1) which was designed on the basis of Mokhtari and Sheorey's Survey on Reading strategies (SORS). The SORS categorizes reading strategies into 3 parts: Global Reading Strategies, Problem Solving Strategies and Support Strategies. The SORS consists of 30 items, each of which is on a 5 point- Likert scale ranging from 1 ("I never or almost never do this") to 5 ("I always or almost always do this"). Students are asked to read each statement and circle the number that applies to them, indicating the frequency with which they use the reading strategy implied in the statement. Thus, the higher the number, the more frequent is the use of the strategy concerned. The writing strategies were classified similarly to the way reading strategies were in the SORS. They follow the steps students might go through when undertaking the writing skill, i.e. Before Writing, While Writing and After Writing. Still, some strategies are related to argumentative genre (strategies 28, 29 and 30) and the questionnaire may not be suitable for the examination of other writing tasks (summaries, narrative writing, or descriptive writings). In the current survey, the Cronbach reliability test indicated that the alpha coefficient for SOWS is .822.

Before answering the SOWS, participants had to write an argumentative essay. The objective of this task was to assess informants' awareness of the different strategies they use in the productive skill. This task aimed to bring into the surface the different writing strategies students use when developing an argumentative essay.

The participants were asked to fill in the SOWS directly after they had written the essay while they still remember the strategies they had just used. The researcher not only wanted to prevent students from forgetting the strategies they had just used, but she also wanted to prevent disturbing their usual use of writing strategies, which might have affected the validity of the results. The score average was interpreted using the high, moderate, and low usage designations included on the scoring sheet. These three levels were suggested by Oxford and Burry-Stock (1995, p. 12) for general learning usage: High (mean of 3.5 or higher), moderate (mean of 2.5 to 3.4), low (mean of 2.4 or lower) and provide a convenient standard that can be used for interpreting the score averages obtained by the students.

4. RESULTS AND DISCUSSION

147 students majoring in four disciplines were investigated in Writing to determine if there is also a relationship between the independent variables SPECIALTY, PROFICIENCY, and GENDER and the dependent variables WRITING STRATEGIES (OVERALL STRATEGIES and its different sub-categories: GLOB, PROB and SUP. Following Mokhtari and Sheorey's taxonomy, GLOBAL (GLOB), Problem-Solving (PROB), and SUPPORT (SUP) strategies refer respectively to Metacognitive, Cognitive, and Support strategies.

A series of Spearman rank-order correlations (Table 1) has been conducted in order to determine if there are any relationships between SPECIALTY and Writing STRATEGIES. Results show a reverse relationship between SPECIALTY and WRITING STRATEGIES. Specialty_code correlates negatively with Overall_WR_AV.

Table 1. Correlation matrix between Specialty and Writing strategies (Overall, GLOB, PROB, and SUP)

Correlations

			Speciality_code	GLOB_Wr_Av	PROB_Wr_Av	SUP_Wr_Av	Overall_Wr_Av
Spearman's rho	Speciality_code	Correlation Coefficient	1,000	-,346**	-,192*	-,322**	-,353**
		Sig. (2-tailed)	.	,000	,020	,000	,000
		N	147	147	147	147	147
	GLOB_Wr_Av	Correlation Coefficient	-,346**	1,000	,634**	,519**	,893**
		Sig. (2-tailed)	,000	.	,000	,000	,000
		N	147	147	147	147	147
	PROB_Wr_Av	Correlation Coefficient	-,192*	,634**	1,000	,398**	,770**
		Sig. (2-tailed)	,020	,000	.	,000	,000
		N	147	147	147	147	147
	SUP_Wr_Av	Correlation Coefficient	-,322**	,519**	,398**	1,000	,754**
		Sig. (2-tailed)	,000	,000	,000	.	,000
		N	147	147	147	147	147
	Overall_Wr_Av	Correlation Coefficient	-,353**	,893**	,770**	,754**	1,000
		Sig. (2-tailed)	,000	,000	,000	,000	.
		N	147	147	147	147	147

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

As SPECIALTY is a variable that cannot be measured, it is measured in terms of exposure time to English language or the number of hours of English lessons students attend in their respective specialities. In other words, the fewer time students are exposed to English, the fewer strategies they use. The negative correlation is also reflected in the relationship between Specialty_code and the sub-categories GLOB_Wr_AV (Global writing strategies), PROB_Wr_Av (Problem-solving writing strategies), and SUP_Wr_AV (Support writing strategies).

A two-tailed test of significance indicates a significant negative relationship between Specialty_code and Overall_Wr_Av rs (147) =-.353, $p < .05$. The output in Table 1 shows that for the correlation between Specialty_code and GLOB_Wr_Av, r = -.346, p = .000, R^2=12%. Between SUP_Wr_Av and Specialty_code, the correlation coefficient is r=-322, p=.000, R^2=10% (statistical at α = .05 level) which indicates a negative correlation between the different variables. In both cases the effect size of correlation is medium as R^2 varies between [.1-.12]. There is also a negative correlation between Specialty_code and PROB_Wr_Av as the correlation coefficient rs= - 192, p= .020,

As SPECIALTY correlates negatively with writing STRATEGIES and as Soft Science students use more writing strategies than hard science students, it is worth looking in detail if specific use of strategies characterizes the different specialities. For that purpose, an ANOVA test with F-ratio is done to identify differences among specialities.

Table 2. Distribution of Writing strategies and proficiency per speciality

		N	Mean	Std. Deviation	Std. Error
Prof_in_Wr	English	36	2.5556	1.08086	.18014
	French	33	1.3030	.68396	.11906
	Medicine	38	2.2632	.97770	.15860
	Engineering	40	2.0000	1.17670	.18605
	Total	147	2.0476	1.09378	.09021
GLOB_Wr_Av	English	36	3.8694	.56540	.09423
	French	33	3.4718	.70534	.12278
	Medicine	38	3.3250	.62168	.10085
	Engineering	40	3.2180	.66644	.10537
	Total	147	3.4622	.68148	.05621
PROB_Wr_Av	English	36	4.2283	.64391	.10732

	French	33	3.7261	1.00486	.17492
	Medicine	38	3.8700	.77778	.12617
	Engineering	40	3.7885	.76845	.12150
	Total	147	3.9033	.81781	.06745
SUP_Wr_Av	English	36	3.3042	.51758	.08626
	French	33	3.2448	.58824	.10240
	Medicine	38	3.0626	.50289	.08158
	Engineering	40	2.7440	.78937	.12481
	Total	147	3.0760	.64817	.05346
Overall_Wr_Av	English	36	3.7453	.45210	.07535
	French	33	3.4194	.64935	.11304
	Medicine	38	3.3287	.50735	.08230
	Engineering	40	3.2050	.56783	.08978
	Total	147	3.4174	.57766	.04764

Table 2 indicates that all participants are high users of Problem Solving writing strategies (PROB_Wr_Av: X=3.9, SD=0.81), followed by Global writing strategies and (GLOB_Wr_Av: X=3.46, SD= 0.68) and Support writing strategies (SUP_Wr_Av: X=3.07, SD= 0.64). Since participants appear to use PROB Writing strategies more frequently than the other sub-strategies, it is worth investigating if this preference is also reflected inside each group of writing sub-strategies.

The ANOVA test (Table 3) reveals a significant discrepancy between groups in Overall-Wr_Av (Overall writing strategies) as F (3,143) =6.66, p=.000<0.05. In GLOB_Wr_Av (Global writing strategies) the main effect group is statistical F (3,143) =7.36, p=.000. There is also a statistical difference between groups in PROB_Wr_Av (Problem Solving Writing strategies) as F (3,143) =2.79, p=.042. One-Way ANOVA shows as well a statistical difference between groups in SUP_Wr_Av, F (3,143) = 6.37, p=.000

Table 3. ***Summary of results of ANOVA for writing strategies***

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Prof_in_Wr	Between Groups	29,440	3	9,813	9,663	,000
	Within Groups	145,227	143	1,016		
	Total	174,667	146			
GLOB_Wr_Av	Between Groups	9,074	3	3,025	7,365	,000
	Within Groups	58,730	143	,411		
	Total	67,805	146			
PROB_Wr_Av	Between Groups	5,409	3	1,803	2,795	,042
	Within Groups	92,236	143	,645		
	Total	97,646	146			
SUP_Wr_Av	Between Groups	7,231	3	2,410	6,370	,000
	Within Groups	54,107	143	,378		
	Total	61,338	146			
Overall_Wr_Av	Between Groups	5,974	3	1,991	6,662	,000
	Within Groups	42,746	143	,299		
	Total	48,719	146			

As in all the categories, there is a significant difference between sub-strategies in Writing, a post-hoc test has been run to identify exactly how each group differs from the other.

Global Writing Strategies

Descriptive analyses reveal that participants are Medium users of GLOBAL strategies (GLOB_Wr_Av: X=3.46 and SD=0.68). The ANOVA Post-hoc test (Table 4 below) shows a statistical difference between English, Medicine and Engineering groups (the significance level is shown as .000, but because the difference is not really zero we can say that $p < .005$). None of the other comparisons is statistically below $\alpha = .05$.

Table 4. ANOVA Post-hoc tests of Global writing strategies

Dependent Variable	(I) Speciality_code	(J) Speciality_code	Mean Difference (I-J)	Std. Error	Sig.
GLOB_Wr_Av	English	French	,39763	,15445	,066
		Medecine	,54444*	,14905	,002
		Engineering	,65144*	,14723	,000
	French	English	-,39763	,15445	,066
		Medecine	,14682	,15249	1,000
		Engineering	,25382	,15071	,566
	Medicine	English	-,54444*	,14905	,002
		French	-,14682	,15249	1,000
		Engineering	,10700	,14517	1,000
	Engineering	English	-,65144*	,14723	,000
		French	-,25382	,15071	,566
		Medecine	-,10700	,14517	1,000

ANOVA test reveals that English majors and Science majors displayed divergent differences in Global writing strategies. There is a statistically significant difference between English and Medicine groups (p=0.002), and between English and Engineering groups (p=0.000). So, it is worth investigating the difference in individual Global writing strategies.

Similar to the detailed analysis of Global Reading strategies, an analysis is run with individual Global writing strategies to find out if strategies vary according to specialities and if students majoring in different specialities have specific preferences.

As indicated by ANOVA tests of individual strategies, students differ significantly in nine Global writing strategies (Strategies: 2, 4, 9, 11, 12, 13, 25, 27 and 29). Nevertheless, despite that discrepancy, they seem to belong to the same subscale as they are considered as High to Medium users of the nine Global Writing strategies, except that English majors appear to be more frequent users as indicated by the means of frequency. English majors are closer to the higher limit of the category and Mean range between 2.74 and 4.43 with a global average of X= 3.86, SD=0.56. Science majors are closer to the lower limit of the category, as means vary between 2.00 and 3.58. French majors are ranked second in their use of GLOB Writing strategies (X=3.47, SD=0.70). Despite the irregular use of some specific strategies, there is a group movement characterizing the participants. In other words, all the participants regardless of the speciality, seem to prefer some strategies to others, as is the case with strategy 4 (I have a purpose in mind when I write), X=3.86, SD=1.11; strategy 7 (I think about what I know to define what I should write) X= 4.06, SD=.98, strategy 9 (Before writing an argumentative essay I prepare a plan) X=3.55,SD=1.32 and strategy 10 (Before writing, I identify the position I am going to defend) X= 3.91, SD=1.14. It is interesting to notice that students are aware of the metacognitive strategies they need to use before resuming writing argumentative essays. Participants display a little use of item 2 (I use tables or diagrams when I brainstorm) with X= 2.23, SD =1.27, and item 24 (I use typographical features like bold faces, italics or underlining when I want to focus on key ideas) X=2.75, SD = 1.35.

Though these strategies may be helpful in foregrounding key ideas in the writing process, participants are medium to low users of the latter.

Problem-Solving Writing Strategies

ANOVA test (Table 3) above indicates a statistical difference between the groups, F (3,143) =2.79, *p*=0.042 which is very close to 0.05. Findings also revealed that tertiary level students tend to use PROB writing strategies (PROB_Wr_AV) more frequently than the other sub-categories (X= 3.90, SD= .81). Thus, it would be worth investigating further differences in Problem-solving writing strategies to find out exactly the groups that differ in the use of these strategies, and which individual strategies show any discrepancy.

Table 5. ***ANOVA post-hoc test of PROB writing strategies***

Dependent Variable	(I) Speciality_code	(J) Speciality_code	Mean Difference (I-J)	Std. Error	Sig.
PROB_Wr_Av	English	French	.50227	.19355	.063
		Medicine	.35833	.18679	.342
		Engineering	.43983	.18451	.111
	French	English	-.50227	.19355	.063
		Medicine	-.14394	.19110	1.000
		Engineering	-.06244	.18887	1.000
	Medicine	English	-.35833	.18679	.342
		French	.14394	.19110	1.000
		Engineering	.08150	.18193	1.000
	Engineering	English	-.43983	.18451	.111
		French	.06244	.18887	1.000
		Medicine	-.08150	.18193	1.000

The One-Way ANOVA results (Table 5) indicate that there is no significant difference among students of different specialities in their use of different PROB writing strategies as *p* ranges between .063 and 1. To observe if any difference exists at the level of individual strategies another ANOVA test was undertaken.

Table 6. ***The output from ANOVA test of individual PROB- Solving Strategies***

		Sum of Squares	df	Mean Square	F	Sig.
PROB_Wr_15	Between Groups	7,888	3	2,629	2,221	,088
	Within Groups	168,085	142	1,184		
	Total	175,973	145			
PROB_Wr_16	Between Groups	4,526	3	1,509	1,139	,335
	Within Groups	189,325	143	1,324		
	Total	193,850	146			
PROB_Wr_17	Between Groups	4,060	3	1,353	1,238	,298
	Within Groups	149,742	137	1,093		
	Total	153,801	140			

	Between Groups	50,789	3	16,930	,890	,448
PROB_Wr_19	Within Groups	2606,914	137	19,029		
	Total	2657,702	140			
	Between Groups	14,262	3	4,754	3,691	,014
PROB_Wr_28	Within Groups	173,896	135	1,288		
	Total	188,158	138			
	Between Groups	3,102	3	1,034	,880	,453
PROB_Wr_30	Within Groups	159,833	136	1,175		
	Total	162,936	139			

Output from ANOVA (Table 6) shows a difference between groups in their use of strategy 28 "I read slowly and carefully to make sure I achieved cohesion", as PROB_Wr_28: F (3,135) =3.69, *p*=.014.

The two ANOVA tests (Tables 5 and 6) demonstrate that students majoring in different disciplines display no significant disparity in their use of PROB Writing strategies. In spite of their different profiles, participants have not demonstrated preference or inclination for any strategy over another. Though all majors are high users of PROB writing strategies, there seems to be a clear preference for strategy 19 "I resort to my experience and background knowledge to illustrate my argumentation" (X=4.12, SD=4.35), and strategy 30 "I reread the final draft to correct the grammar and vocabulary mistakes" (X=4.12, SD=1.08). The post-Hoc Test shows that English and Engineering majors differ in their use of strategy 28 (I read slowly and carefully to make sure I achieved cohesion,) mean difference=0.85, *p*=.009). This disparity can be due to Engineering majors' limited use of strategies as they have demonstrated all along with the analysis.

It is possible that at this level these students feel more comfortable with these strategies, as students are evaluated on their command of the language and coherence of argumentation. Instructors often encourage learners to re-read a word to guess its meaning from context and to re-read what they have written to edit and correct mistakes. In other words, this awareness of strategies may have impacted their answers in the surveys. The students maintain to frequently use strategies 28 and 30. Despite their claim, they seem unable to either formulate their ideas coherently or edit their writings and correct their grammar errors, which reduces the quality of their performance. Raimes (1987, p. 460) argues that "Students often exhibit these processes but their strategies are not efficient. This point raises the question of efficiency in using strategies".

Support Writing Strategies

This section aims to observe if the four major groups differ in their use of Support Writing strategies. The spearman rank order correlation (Table 1) shows a negative correlation between Specialty_code and SUP_Wr_Av that is statistically significant rs (147) =-.32, *p*=.000. This result confirms the explanation that the fewer students are exposed to English, the fewer strategies they use. Nevertheless, descriptive results (Table 2) show little discrepancy among all participants and frequency average varies from 2.74 to 3.3. Consequently, most students are considered as low users of Support Writing strategies. Despite being in the same category of users, one-way ANOVA test (Table 3) has determined a statistically significant difference between the four groups as F= 6.37, *p*=.000. A Post-Hoc test was run to determine the groups that differ from each other.

Table 7. ***The output from the One-Way ANOVA of Support – Writing Strategies: Post-Hocs***

Dependent Variable	(I) Speciality_code	(J) Speciality_code	Mean Difference (I-J)	Std. Error	Sig.
SUP_Wr_Av	English	French	,05932	,14824	1,000
		Medecine	,24154	,14306	,561
		Engineering	,56017*	,14131	,001
	French	English	-,05932	,14824	1,000
		Medecine	,18222	,14637	1,000
		Engineering	,50085*	,14466	,004
	Medicine	English	-,24154	,14306	,561
		French	-,18222	,14637	1,000
		Engineering	,31863	,13934	,142
	Engineering	English	-,56017*	,14131	,001
		French	-,50085*	,14466	,004
		Medecine	-,31863	,13934	,142

Tukey Post-hoc test (Table 7) shows a statistical difference between English and Engineering groups as the significance level is .001, and between French and Engineering majors since *p*=.004. None of the other comparisons is below α=.05. These results raise the interest in identifying the individual support writing strategies that illustrate the discrepancy. Similarly to previous analyses, a series of One-way ANOVA tests were run. This final test indicates a clear discrepancy in six items out of nine: SUP_Writing_1"I underline or circle the keywords of the topic to clarify the purpose of the essay", SUP_Writing_8 "I take notes while reading the topic to help me identify what I should write", SUP_writing_20 "I reinforce my arguments with quotations", SUP_Writing_21 "When I write, I use vocabulary seen previously in English courses", SUP_Writing_22 "While writing, I formulate ideas in my mother tongue and translate them into English", SUP_Writing_23 "I use reference materials (e.g. Dictionary) to help me use the adequate vocabulary and adopt the correct structures".

English students and the three other groups differ in their use of strategy 1 as English majors are the highest users of the latter strategy (X=4.32, SD= 1.09). A clear difference is also noticed between Medicine and French students as for the use of strategy 8, where French majors rank first (X=3.9, SD=1.43) and Medicine majors rank fourth (X=2.94, SD= 1.13). However, SD is close to the Mean in the case of French and English majors, which indicates the heterogeneous use of the strategy. In light of the multi-comparison test, we notice a difference between Engineering and English groups in four strategies: strategy 1 "I underline or circle the keywords of the topic to clarify the purpose of the essay", strategy 20 "I reinforce my arguments with quotations", strategy 21 "When I write, I use vocabulary seen previously in English courses" and strategy 23 "I use reference materials (e.g. Dictionary) to help me use the adequate vocabulary and adopt the correct structures". In these four strategies, English students are either high or medium users, as the mean varies from 4.32 to 3.17. Engineering majors are considered as low to medium users since X ranges between 2.23 and 3.46. Nevertheless, it is worth mentioning that English majors are low users of item 22 "Formulating ideas in the mother tongue and translate them into English" (X=1.63); while French students are medium users (X=2.73), though they are ranked first in this strategy. It is interesting to notice that English majors do not employ that strategy and this proves that they are "aware" of their teachers' instruction and advice to think in English and write in English. Tunisian EFL teachers correct written products that often read as the English translation of Tunisian Arabic words and expressions.

All groups reported to be high users (X=3.76, SD= 1.04) of strategy 18 "I go back and forth in my passage to check the relationship among ideas". This suggests that Tunisian University students are aware of the importance of coherence between ideas when developing a written product.

Relationship between Specialty and Proficiency in Writing

Hard science students have a better reading proficiency level despite their low use of reading strategies compared to Soft Science students. Nevertheless, the Spearman correlation test demonstrates that no relationship exists between the independent variables SPECIALTY and level of PROFICIENCY in Reading. As for writing, results (Table 2) indicate that proficiency level varies among participants regardless of their major. A Spearman correlation test was undertaken to confirm or refute the null hypothesis that there is no relationship between the field of specialization and writing proficiency and verify the claim that Hard science students are more skilled at literary tasks than Soft science students.

Results of the previous analyses (Table 1) demonstrated a negative correlation between WRITING STRATEGIES and SPECIALTY (r=-.353, *p*.000). The correlation was confirmed by the different ANOVA tests revealing that Soft Science students have a higher mean of frequency use than hard science students. Nevertheless, descriptive tables also demonstrated that there was no important discrepancy between Humanities students and Science students, in spite of the fact that English and French students have more opportunities to develop written products than science students do. The mean of writing proficiency varies from 1.30 to 2.55 (Table 2). The descriptive statistics for the groups are: English, X = 2.55, SD = 1.08; French, X = 1.30, SD = 0.68; Medicine X =2.26, SD =0.97 and Engineering X=2, SD =1.17. In other words, English majors are ranked first, followed by Medicine students and Engineering majors; and French participants can be considered as the least proficient in this population.

The Spearman rank order-correlation (Table 8) determined that there is no relationship between Specialty (Specialty_code) and Proficiency in Writing (Prof_in_Wr), and consequently, the relationship is not statistically significant (r (147) = -.083, *p*=.315).

These results in Table 8 verify the null Hypothesis, there is no discrepancy among the different students majoring in the different specialities at the level of proficiency, and it refutes the hypothesis that scientific students are "better" than Arts students in their writing performance.

Table 8. ***Correlation matrix between Gender, Specialty and Proficiency***

Correlations

			Speciality_code	gender	Prof_in_Wr
Spearman's rho	Speciality_code	Correlation Coefficient	1,000	,564**	-,083
		Sig. (2-tailed)	.	,000	,315
		N	147	147	147
	gender	Correlation Coefficient	,564**	1,000	,043
		Sig. (2-tailed)	,000	.	,605
		N	147	147	147
	Prof_in_Wr	Correlation Coefficient	-,083	,043	1,000
		Sig. (2-tailed)	,315	,605	.
		N	147	147	147

**. Correlation is significant at the 0.01 level (2-tailed).

To sum up, these results demonstrate that there is no relationship between SPECIALTY and PROFICIENCY in Writing. Participants display the same behaviour in Reading and

Writing and confirm that their respective fields of specialization do not impact in any way their performances. Nevertheless, it is worth checking if strategy use is related to proficiency.

Since the previous analyses refuted the claim that Hard Science students are better than Soft Science students in terms of proficiency, and indicated that there is no correlation between SPECIALTY and PROFICIENCY, the next two sections investigate the relationship between use of WRITING STRATEGIES and the independent variables, PROFICIENCY and GENDER.

The relationship between Proficiency and Writing strategies

Despite their different profiles and interests, students seem to adopt the same behaviour when it comes to reading and writing in English. The results show that English majors are ranked first in terms of strategy use followed by the three other groups. This may be due to the fact that English learners are more exposed to foreign language than the other groups. Nonetheless, French majors are ranked second in terms of strategy use but have a low writing proficiency level, while scientific learners display a lower use of writing strategies but a higher proficiency level. A Spearman's rank-order correlation was run to determine an eventual relationship between Writing strategie use and the independent variables PROFICIENCY and GENDER.

Table 9. ***Correlation matrix between Gender, Proficiency and Writing strategies***

Correlations

			gender	Prof_in_Wr	GLOB_Wr_Av	PROB_Wr_Av	SUP_Wr_Av	Overall_Wr_Av
Spearman's rho	gender	Correlation Coefficient	1,000	,043	-,154	-,190*	-,193*	-,191*
		Sig. (2-tailed)	.	,605	,063	,022	,019	,020
		N	147	147	147	147	147	147
	Prof_in_Wr	Correlation Coefficient	,043	1,000	,198*	,166*	-,007	,162*
		Sig. (2-tailed)	,605	.	,016	,045	,932	,049
		N	147	147	147	147	147	147
	GLOB_Wr_Av	Correlation Coefficient	-,154	,198*	1,000	,634**	,519**	,893**
		Sig. (2-tailed)	,063	,016	.	,000	,000	,000
		N	147	147	147	147	147	147
	PROB_Wr_Av	Correlation Coefficient	-,190*	,166*	,634**	1,000	,398**	,770**
		Sig. (2-tailed)	,022	,045	,000	.	,000	,000
		N	147	147	147	147	147	147
	SUP_Wr_Av	Correlation Coefficient	-,193*	-,007	,519**	,398**	1,000	,754**
		Sig. (2-tailed)	,019	,932	,000	,000	.	,000
		N	147	147	147	147	147	147
	Overall_Wr_Av	Correlation Coefficient	-,191*	,162*	,893**	,770**	,754**	1,000
		Sig. (2-tailed)	,020	,049	,000	,000	,000	.
		N	147	147	147	147	147	147

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The results in Table 9 show that there is almost no correlation between Prof_in_Wr and Overall_Wr_Av, the effect size is r = .162, p = .049 (statistical at α = .05 level). Though not statistically significant, it reveals that Prof_in_Wr correlates positively with GLOB_Wr_Av (rs(147)=.198, p=.016, and PROB_Wr_Av (rs(147) =.166, p=.045 at the exception of SUP_Wr_Av r=-.007, p=.932.

It is possible that proficient students favor Global and Problem-solving writing strategies, over Support Writing strategies. This correlation suggests that GLOB and PROB writing strategies impact the level of writing proficiency more than SUP strategies.

Writing strategies and Gender

As for the independent variable GENDER, results indicate that females tend to use more writing strategies than males as there is a negative correlation, and a reverse relationship, between the two variables rs(147)= -.191, p=.020. However, a detailed analysis demonstrates no significant statistical correlation between GENDER and GLOB_Wr_Av

rs(147)= -154, *p*=.063>.05. Females appear to favor Problem solving strategies (PROB_Wr_Av, r= -.190, p=.022) and SUP writing strategies as (SUP_Wr_Av, r= -.193, *p*=.019).

Table 9 also analyzes the relationship between Gender and Writing proficiency. Findings indicate a statistically insignificant relationship (r (147) = .043, *p*=60) between the two variables (Gender and Prof_in_Wr). In conclusion, despite the high use of PROB and SUP writing strategies by female students, the discrepancy between genders is not reflected at the level of writing proficiency.

5. DISCUSSION

The present study intended to observe if Tunisian tertiary level students use different writing strategies that might be influenced by their speciality. Additionally, it sought to find out if the level of proficiency, which was measured on students' writing outcomes, varied according to academic disciplines. The third part of the research was devoted to the possible correlation between GENDER, PROFICIENCY, and different WRITING STRATEGIES.

In the current research, results revealed a strong association between SPECIALTY and STRATEGY use, but in terms of frequency not in terms of individual strategies. ANOVA results confirmed that the frequency of strategy use is higher among Humanities students than among Medicine and Engineering students. This result confirms previous research which concluded that English students are higher users of learning strategies in comparison to Science students (Peacock, 2001, Peacock and Ho, 2003).

In this study, the ANOVA test demonstrated a difference between the four groups of population in the different sub-categories, GLOB, PROB and SUP, and indicated no distinct association between any speciality and any sub-strategy group. This absence of difference suggests that Tunisian students, despite their different profiles and their choice of different specialities, do not differ much from each other when it comes to English language learning.
Peacock and Ho (2003) interviewed 48 students about their rate of recurrence and the different reasons behind students' choice and frequency of some strategies. Participants' responses permitted to recognize that frequency use of strategies mainly depends on motivation, shortage of time, priority, and interest in English language learning. In the current context, the frequency use of strategies is probably rather related to exposure time to English language and training. While English majors are more exposed to the instruction of learning strategies, French majors and Hard Science students have an exposure time of two hours per week, in a semester or an annual course, depending on the field of specialization, and the tradition of each institution. At the secondary level, Tunisian students are taught the same material despite their different fields of specialization (Arts, Economics, Science, Maths, and Computer studies). Arts pupils have one extra hour compared to their scientific counterparts, but the extra hour does not impact the quality of teaching or learning. Consequently, it is difficult to claim that Science students use specific strategies while Humanities students prefer others. Additionally, a Document survey outlined that most materials are either vocabulary oriented/ language-oriented (Medicine and Engineering documents) or tend to focus on the basic reading and writing strategies (English materials).

Nonetheless, it was observed that all participants were more comfortable with PROB strategies in Writing, with a specific interest in some individual strategies; followed respectively by GLOB and SUP strategies. In other words, Tunisian majors are inclined to use cognitive strategies, then, metacognitive and support strategies.

Though the teaching of strategies is not always explicit and students do not have specific strategy training, instructors teaching language majors claimed in the interview that they seek to raise their students' awareness on the different reading and writing strategies, and highlight their significance. This last point may explain why language majors are more frequent users of Strategies than Science majors.

As for Writing, participants frequently use the PROB (cognitive) writing strategies such as strategy 28 "I read slowly and carefully to make sure I achieve cohesion" or strategy 30 "I read the final draft to correct grammar and vocabulary mistakes". It is possible that at this level these students feel more comfortable with these strategies, as students are evaluated on their command of the language and coherence of argumentation. Instructors often encourage learners to re-read a word in order to guess its meaning from context and to re-read what they have written in order to edit and correct mistakes. In other words, this awareness of strategies may have impacted their answers in the surveys. The students maintain to frequently use strategies 28 and 30. Despite their claim, they seem unable to either formulate their ideas coherently or edit their writings and correct their grammar errors, which reduces the quality of their performance. Raimes (1987, p. 460) argues that "Students often exhibit these processes but their strategies are not efficient. This point raises the question of efficiency in using strategies".

In this study, findings of the different tests lead to the conclusion that despite Language majors' awareness of strategies, they do not make efficient use of them to improve their reading and writing outcomes. This questions the relationship between proficiency and the choice of strategies.

Proficiency and Writing Strategies

As mentioned in the introduction of this study, Tunisian tertiary level students are evaluated on different written tasks, but mainly on their proficiency in developing an argumentative essay. Evaluation of the participants' essays reveals that Tunisian tertiary level students have problems in expressing their opinions and arguments coherently by following an order such as thesis, arguments, and conclusion; hence their low proficiency level in writing, and some participants' refusal to complete the task. Holistic scoring of the written products reveals that very few students seem to have acquired the necessary writing principles at the structural and discourse levels. Additionally, the students in all the fields studied here revealed a low command of linguistic rules, and most of the essays were characterized by language errors (spelling, grammar, tense choice, word order).

The findings indicate that Proficient students favor Global and Problem solving (metacognitive and cognitive) strategies over Support strategies, in writing. Informants revealed little use of support strategies in Writing as there is no correlation between the writing outcome and SUP strategies. Students tended to write sentences that read like a direct translation from Tunisian Arabic to English. Though, data analysis revealed an awareness and high frequency of strategies related to cohesion and accuracy, most argumentative sentences are bare assertions. This fact might be related to students' low level of language proficiency that prevents them from detecting their language errors, and by low motivation. As mentioned previously, the latter variable seems to have a strong predictive impact on frequency use and proficiency.

The different ESL language instructors who were interviewed stated that most strategies are taught implicitly, except the ones mentioned in the materials. They all agreed that explicit teaching instruction is of significant help to learners, though. They also asserted to highlight the various composing strategies that characterize different writing task. In the same vein, Dreyer and Nel (2003) stress that strategic reading instruction allows learners to reach statistically and practically higher marks on the reading comprehension tests in comparison to those who do not follow strategic reading instruction. Since explicit and strategic reading instructions are proved to have a positive impact on reading proficiency, it is highly probable that explicit and strategic writing instruction might have a similar effect on the quality of production.

Gender and Writing Strategies

In Writing, the correlation test identified a negative correlation between OVERALL WRITING STRATEGIES and GENDER (rs(147)=-.191, *p*=.020). Females are higher users of strategies in comparison to Males. They also display a neat preference for seven individual strategies in writing that are strategy 11(GLOB) "The first step I do is to write down ideas that I will directly develop in a final draft", strategy 18 (SUP) " I go back and forth in my passage to check the relationship among ideas, strategy 21(SUP) "When I write, I use vocabulary seen previously during previous English courses", strategy 25 (GLOB) "While writing I keep in mind that I try to persuade the reader", strategy 28 (PROB) "I read slowly and carefully to make sure I achieved cohesion", strategy 29 (GLOB) "after writing I critically evaluate what I wrote", and strategy 30 (PROB) "I reread the final draft to correct the grammar and vocabulary mistakes". While no individual strategies were identified for Males, Tunisian Female students revealed a preference for support strategies that aim to facilitate the comprehension and production of argumentative texts and may lead to a high proficiency level. These results are in line with previous studies that revealed the higher use of strategies by Females in comparison to Males. Goh and Foong (1997) also report that Females use compensation and affective strategies more often than Males. Mochizuki (1999) reinforces the claim and demonstrated that Females significantly use all six (memory, cognitive, compensation, metacognitive, affective, and social) categories of learning strategies in comparison with Males. Peacock and Ho (2003) verified the results and identified that females display a higher use of strategies in the six categories, with the main inclination for affective and social strategies.

6. CONCLUSION

The study had the primary purpose of exploring whether the independent variables, SPECIALTY, PROFICIENCY, and GENDER, impacted the frequency and the use of the dependent variables WRITING STRATEGIES in a Tunisian Tertiary level context. Similarly to previous studies, findings demonstrated that language majors tend to be higher users of Overall strategies, in comparison to Science students. All students belong to the same category of users (High-Medium-Low), except that Science students have a slightly lower frequency use of writing strategies. In contrast to some reports, majors are not delimited in their use of Writing strategies, and unlike some particular studies (Peacock & Ho, 2006; Mochizuki, 1999) it was not possible to determine a difference between Science and Language majors in their use of strategies. In other words, majors differ in terms of frequency but not in types of strategies. All students, regardless of the field of specialization, displayed a clear preference for Problem Reading Strategies (Cognitive), while they were medium users of Global (Metacognitive) and Support Writing Strategies.

Findings unveiled students unawareness of some strategies which highlights the importance of explicit instruction. The latter should provide students with multiple opportunities for independent practice, prompt and specific feedback on their strategy attempt, and class time for strategy debriefing sessions. Students need to be taught how to reflect on and evaluate their performance and the strategies they used in Writing. The teachers' interviews and document survey revealed that little interest, time, explicit explanation, and instruction are devoted to the content and production of writing and more particularly argumentative essays. It is then advisable for EAP / ESP teachers to re-conduct a content analysis of the curriculum, prepare course objectives and design teaching materials which highlight the importance of Academic Writing.

EAP teachers need not only to emphasize the strategies related to proficiency but also point out those that are often neglected (Global and Support strategies), and highlight the effective role in developing Writing skills. Integrating strategies, such as the use of tables or diagrams while brainstorming reformulating the topic into questions, and the use of

references materials to use the adequate vocabulary, and adopt the correct structures, are deemed useful in improving writing performance.

An EAP syllabus designed for students with low-level English proficiency should first work to help them reach the linguistic threshold level. The instructional goal at this level should be on vocabulary acquisition and grammar in order to help the students reach the required linguistic level. Outputs of Tunisian students' argumentative essays reveal that they have not reached a high level of critical thinking and they are unaware of the interaction between reader and writer. Students do not have the same linguistic competence and teachers need to find ways of catering for mixed abilities classes. In other words, instructors and curriculum designers have to adapt students' literacy levels, wants, and needs to academic requirements and not adapt the materials to students' level. This procedure may lessen the quality of academic education.

REFERENCES

Al-Mashour, M. M. (2003). Learning strategies and writing processes used by Jordanian EFL University learners in an argumentative writing task. Retrieved from https://www.academia.edu/19527115/Learning_Strategies_and_Writing_Processes_Used_by_Jordanian_EFL_University_Learners_in_an_Argumentative_Writing_Task

Cenoz, J., & Jessner, U. (Eds.). (2000). *English in Europe. The Acquisition of a third language.* Clevedon, UK: Multilingual Matters.

Creme, P., & Lea, M. (2008). *Writing at university: A guide for students*. McGraw-Hill Education (UK).

Cook, V. (2008). *Second language learning and language teaching*. Newcastle, UK: Hodger Education

De Pinho, A. D. S., & Pereira, L. Á. (2009) Organization of the argumentative text in a blended-learning environment. DOI: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.212.7528&rep=rep1&type=pdf

Díaz , C., Ramos Leiva, L., & Ortiz Navarrete, M. (2017). Rhetorical, metacognitive, and cognitive strategies in teacher candidates' essay writing. *PROFILE Issues in Teachers' Professional Development, 19*(2), 87-100. DOI:https://doi.org/10.15446/profile.v19n2.60231.

Dreyer, C., & Nel, C. (2003). Teaching reading strategies and reading comprehension within a technology –enhanced learning environment. *System 31*: 349-365.

Ehrman, M. E., Leaver, B. L., & Oxford, R. L. (2003). A brief overview of individual differences in second language learning. *System, 31*(3), 313-330.

Emmel, B., Resch, P., & Tenney, D. (Eds.). (1996). *Argument revisited; argument redefined: Negotiating meaning in the composition classroom*. SAGE Publications, Incorporated. Retrieved from http://halshs.archivesouvertes.fr/doc/00/08/36/92/PDF/Erlischspiralesder.pdf,p.119.

Fareed, M., Ashraf, A., & Bilal, M. (2016). ESL learners' writing skills: Problems, factors and suggestions. *Journal of Education and Social Sciences, 4*(2), 81-92. Retrieved from https://www.researchgate.net/publication/311669829_ESL_Learners'_Writing_Skills_Problems_Factors_and_Suggestions

Farrokhi, F., & Ashrafi, S. (2009). Textual metadiscourse resources in research articles. *Journal of English Language Teaching and Learning, 52*(212), 39-75. DOI: http://elt.tabrizu.ac.ir/article_640_4555d507f42bdf7f37a631e6c227332b.pdf

Goh, C., & Foong, K. P. (1997). Chinese ESL students' learning strategies: A look at frequency, proficiency, and gender. *Hong Kong Journal of Applied Linguistics, 2*(1), 39-53.

Goctu, R. (2017). Metacognitive strategies in academic writing. *Journal of Education in Black Sea Region*, *2*(2).

Hsiao, T. Y., & Oxford, R. L. (2002). Comparing theories of language learning strategies: A confirmatory factor analysis. *The Modern Language Journal*, *86*(3), 368-383.

Khaldieh, A. (2000). Learning Strategies and writing processes of proficient vs less-proficient learners of Arabic. *Foreign Language Annals, 30* (5), 522-533.

Lahuerta Martínez, A. C. (2008). Analysis of ESP university students' reading strategy awareness. *Iberica*, (15). DOI: http://www.aelfe.org/documents/10_15_Lahuerta.pdf

Lee, K. R., & Oxford, R. (2008). Understanding EFL learners' strategy use and strategy awareness. *Asian EFL Journal*, *10*(1), 7-32.DOI: http://70.40.196.162/March_2008_EBook.pdf#page=7

Majid, F. A., Azman, N., & Jelas, Z. M. (2010). The reading strategies of proficient and less proficient adult readers. *Journal of Adult and Continuing Education*, *16*(1), 21-40. Doi:https://s3.amazonaws.com/academia.edu.documents/39865760/Thereading_strategies_of_proficient_and_less.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1527720345&Signature=8O%2B8TaqPseW3hhMKARZG7HzL2a8%3D&response-content-disposition=inline%3B%20filename%3DThe_reading_strategies_of_proficient_and.pdf

Mochizuki, A. (1999). Language learning strategies used by Japanese university students. *RELC Journal 30* (2), 101-13.

Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education*, *25*, 2-10.

Mu, C. (2005) A Taxonomy of ESL writing strategies. *Proceedings Redesigning Pedagogy: Research, Policy, Practice*, pp. 1-10, Singapore. DOI: https://eprints.qut.edu.au/64/

National Research Council. (2012). *Improving Adult Literacy Instruction: Options for Practice and Research.* Committee on Learning Sciences: Foundations and Applications to Adolescent and Adult Literacy, A.M. Lesgold and M. Welch-Ross, (Eds). Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. DOI: https://doi.org/10.17226/13242

Oxford, R. L. & Ehrman, M. E. (1995). Adults' language learning strategies in an intensive foreign language program in the United States. *System 23*(3), 359-386.

Oxford, R. L., & Nyikos, M. (1989). Variables affecting choice of language learning strategies by university students. *Modern Language Journal*, *73*, 291-300.

Oxford, R. L., Nyikos, M., & Ehrman, M. E. (1988). Vive la difference? Reflections on sex differences in use of language learning strategies. *Foreign Language Annals, 21* (4), 321-328.

Parodi, G. (2007). Reading–writing connections: Discourse-oriented research. *Reading and writing*, *20*(3), 225-250.

Peacock, M. (2001). Language learning strategies and EAP proficiency: teacher views, student views, and test results. In J. Flowerdew and M. Peacock, *Research Perspectives on English for Academic Purposes.*(pp.268-85). Cambridge University Press.

Peacock, M., & Ho, B. (2003). Student Language learning strategies across eight disciplines. *International Journal of Applied Linguistics, 13*(2), 179-200.

Politzer, R. L. (1983). Research notes: An Exploratory study of self-reported language learning behaviors and their relation to achievement. *Studies in Second Language Acquisition 6*, 54-68.

Politzer, R. L., & McGroarty, M. (1983). *An Exploratory Study of Learning Behaviors and Their Relation to Gains in Linguistic and Communicative Competence.* Manuscript Stanford University.

Raoofi, S., Chan, S. H., Mukundan, J., & Rashid, S. M. (2014). A qualitative study into L2 writing strategies of university students. *English Language Teaching*, *7*(11), 39. Retrieved from http://www.ccsenet.org/journal/index.php/elt/article/view/41503

Roerden, L. P. (1997). *Web –Based Projects for Your Classroom,* Net-Lessons, USA, Sheryl Avruch.

Sasaki, M. (2004). A multiple-data analysis of the 3.5-year development of EFL student writers. *Language Learning*, *54*(3), 525-582.

Sasaki, M. (2007). Effects of study-abroad experiences on EFL writers: A multiple-data analysis. *The Modern Language Journal*, *91*(4), 602-620.

Turner, A.R. (2015). Motivating reluctant writers: A cumulative research project aimed to improve student motivation and writing outcomes.

Walton, D. (2006). *Fundamentals of Critical Argumentation*. Cambridge University Press.

Wenden, A. (1991). *Learning strategies for learner autonomy: planning and implementing learner training for language learners*. Hemel Hemstead, Hertfordshire: Prentice Hall.

Wood, A. (2001). International scientific English: The language of research scientists around the world. In J. Flowerdew & M. Peacock (Eds.), *Research perspectives on English for academic purposes* (pp.71-83). Cambridge: Cambridge University Press.

APPENDIX A

Survey of writing strategies

Name:

Specialization:

Statement	Never				Always
1-I underline or circle the key words of the topic to clarify the purpose of the essay.	1	2	3	4	5
2- I use tables or diagrams when I brainstorm.	1	2	3	4	5
3- Before writing I critically analyze the topic.	1	2	3	4	5
4-I have a purpose in mind when I write.	1	2	3	4	5
5-Before writing, I reformulate the topic into questions that I try to answer.	1	2	3	4	5
6- I think about the content of the topic, in both English and my mother tongue.	1	2	3	4	5
7- I think about what I know to define what I should write	1	2	3	4	5
8-I take notes while reading the topic to help me identify what I should write.	1	2	3	4	5
9-Before writing an argumentative essay I prepare a plan.	1	2	3	4	5
10- Before writing I identify the position I am going to defend.	1	2	3	4	5
11- The first step I do is to write down ideas that I will directly develop in a final draft.	1	2	3	4	5
12-I write a first draft, before a final one.	1	2	3	4	5
13-After writing the first draft I select, what to keep and what to suppress.	1	2	3	4	5
14- I think aloud when I have difficulties in expressing an idea.	1	2	3	4	5
15- When I meet difficulties while writing, I reread what I wrote in order to re-boost my argumentative process / my way of thinking.	1	2	3	4	5
16- I stop from time to time and reread what I wrote.	1	2	3	4	5

17- I get back to the topic to make sure what I am writing is coherent.	1	2	3	4	5
18- I go back and forth in my passage to check the relationship among ideas.	1	2	3	4	5
19- I resort to my experience and background knowledge to illustrate my argumentation.	1	2	3	4	5
20- I reinforce my arguments with quotations.	1	2	3	4	5
21-When I write, I use vocabulary seen previously during previous English courses.	1	2	3	4	5
22- While writing, I formulate ideas in my mother tongue and translate them into English.	1	2	3	4	5
23- I use reference materials (eg. Dictionary) to help me use the adequate vocabulary and adopt the correct structures.	1	2	3	4	5
24- I use typographical features like **bold faces,** *italics*, underlying, or different colours when I want to focus on key ideas.	1	2	3	4	5
25-While writing I keep in mind that I try to persuade the reader.	1	2	3	4	5
26- I use persuasive words.	1	2	3	4	5
27- In an argumentative essay, I make sure I formulate my opinion.	1	2	3	4	5
28- I read slowly and carefully to make sure I achieved cohesion.	1	2	3	4	5
29- After writing I critically evaluate what I wrote.	1	2	3	4	5
30- I reread the final draft to correct the grammar and vocabulary mistakes.	1	2	3	4	5

AUTHOR'S BIO

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