

Scientific Academic Writing: The Difficulties of Writing Abstracts of Theses and Dissertations in Biological Disciplines

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Abstract--- *In all scientific disciplines, academic writing has been a critical domain of research in general. Then, the necessity to develop academic writing raises and the process may be more significant and complicated as the students shift to a higher level of education. Although many studies have been devoted to examining the textual and phrasal characteristics of the dissertation and theses as academic genres, few have been concerned with substantive problems of EFL postgraduates during writing these genres, particularly in English for Specific Academic Purposes ESAP and scientific disciplines. The dissertations and the theses embody one of the powerful forms of scientific discourse and scientific communication so; the abstract of theses and dissertations is a crucial genre that has a vital role in scientific academic writing particularly for foreign learners of English language. The weight of this compulsory genre is strengthened by the important function that it performs in the academic practice in theses /dissertations, even though this function the abstract genre is neglected in the literature of ESAP studies. Abstracts are almost global in scientific theses /dissertations where there are fundamental similarities concerning language, significance, and structure. The current study sheds light on the characteristics of the language of the abstract as a scientific academic genre and considers its importance in theses /dissertations. The models of the abstract, as well as the common structures, are also highlighted in the study. It tackles and examines the obstacles faced by Iraqi EFL postgraduates in biological disciplines during writing the abstracts of their theses /dissertations in English language. To reach this goal, the researcher uses semi-structured interviews that answer the principal two questions of the study, the first is what are the main difficulties faced by Iraqi EFL postgraduates of biology during writing this academic genre? And the second is what are the causes that create these difficulties? The participants were 32 MSc and PhD postgraduates in seven biological disciplines at six different universities. To collect the data of the study a questionnaire with two parts was used the first involved closed questions while the second involved open-ended questions. The results showed that the Iraqi EFL postgraduate students in all biological disciplines as novice writers face similar difficulties in writing the abstracts of their theses /dissertations in English language. Some of these difficulties are related to language use and linguistic realizations like grammar, vocabulary, and words. Others are related to the structural organization of the abstract. These difficulties are contributed to the lack of previous experience and knowledge about academic writing and abstract writing models, in addition, the lack of integration between language development and academic development.*

Keywords--- *Scientific Academic Writing, Biological Disciplines, Abstract Genre, EFL.*

I. INTRODUCTION

Some years ago, the interest has increasingly emerged to the notion of different genres and their employment in

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language teaching and learning. This increasing interest has definitely assisted ESP teachers as well as the learners because it reveals the way language is employed in numerous contexts and how the earned knowledge can be also employed academically. According to the different requirements of study subjects, the academic writing diversifies to fulfil them thus; learners are required to carry out a variety of writing forms during their studies varying from short essays to long theses and dissertations. The academic writing is represented in a flexible course that identifies the variety of study demands and assists the learners of different subjects in all levels from foundation to PhD to practice those forms of writing which are most significant for their studies. Therefore, the abstract of theses/dissertations is one of these practices in academic writing, as it composes a gateway to reading and publishing various studies (Bailey, 2014; Hyland, 2004; Lorés, 2004). Salager-Meyer (1992) recognizes the abstract genre as a unique category of discourse aimed to communicate factual new knowledge for members of different academic communities. According to (Ventola, 1994a) because the abstract is the first portion of the theses/dissertations to be read, so they “have become a tool of mastering and managing the ever increasing information flow in the scientific community”. She affirms, “Abstracts should be taken as a serious object of linguistic study” and claims that they should not be restricted to theoretical studies but also to the applicability of such studies to exhibit their importance to scientific writers. Moreover, she (1994b) stresses that abstract to be examined in terms of textual and syntactic analysis concerning the problems of writing in English as a foreign language. English has been converted to be the principal language of international scientific communications and exchanges; this orientation leads to rapid advancement in science. Since English has been the fundamental medium of international specialized publication, non-English speaking scientists are aware of the importance of scientific literature in English to their work and start to understand that it is more effective to write and publish in English than in their native languages (Antic, 2009). The non-native speakers of English in scientific disciplines often encounter the academic writing demands of their study as very challenging tasks, hence in addition to learning academic English, they require comprehending the nature of the scientific text and new conventions of scientific style. Although many studies have been conducted to contribute to the investigation of textual and phrasal aspects of various academic genres among which the theses and dissertation, few have been concerned with actual problems of EFL postgraduates particularly in scientific disciplines (Ra’uf & Foo, 2017). Despite the critical role that the abstract genre plays in the academic practice in theses /dissertations, this genre is surprisingly neglected in the literature of ESAP and ESP studies. Therefore, the importance of abstract is highlighted by the results of surveys and the frequency with which it occurs in scholarly texts. It is a part of one of the most important academic practices and it constitutes the first portion of the dissertation to be written and read stated that serves a valuable source of interactional features that reveal how individuals work to position themselves within their communities. Thus, it is a device of mastering and managing the ever-increasing information flow in the scientific community (Hyland, 2000; Ventola, 1994b). The theses /dissertation represent one of the important forms of scientific discourse and scientific communication, moreover writing abstracts is a crucial genre that has an important role in scientific academic writing especially for EFL postgraduates in scientific disciplines who are non- speakers of English. This paper considers the importance of the abstract in theses /dissertation as an academic writing genre and simply illustrates the types, language, and structure of this genre. In this paper, the researcher investigates the difficulties that the Iraqi EFL postgraduates in biological

disciplines face during writing the abstracts of their MSc theses and PhD dissertations. The difficulties have been illustrated and analyzed depending on the graduate's responses to the questionnaire that was presented to them previously. This study has been carried out because of the growing numbers of Iraqi EFL postgraduates in scientific disciplines studying higher degrees for whom the abstract is becoming an important genre, and mainly because of what it reveals about students' perceptions of scientific academic writing and the way they deal with writing to overcome obstacles in the research process.

1.1 The Importance of Thesis and Dissertation Abstracts as an Academic Writing Genre

In writing academic theses /dissertations in many disciplines, the abstract occupies the second important place after the title. The abstract is "a smaller quantity containing the virtue or power of a greater"(Oxford, 2009). It helps the readers to pick up the most important information they need and to find out the thesis /dissertation that they are interested in, because sometimes the title may not illustrate much about subject being conducted. Therefore, in such cases the abstract gives the readers a chance to browse through it to get the information they need and then decide whether they are going to read the whole work or not. Therefore the attractive and good abstract functions as a factor to promote their research to readers (Buslz, 2005; Hyland, 2000). (Martín-Martín, 2005); Martín (2003) states that the abstract functions as a time saving device that inform the readers about the content of the work, indicates whether the full text merits further attention. Other importance of the abstract is that it functions as a reminder, Salager-Meyer (1992)) states that "abstracts are very important both as a pre-reading and a post-reading phase to the point that they should be the starting point of any professional reading". The dissertation abstract, as a genre, is a recognizable situated linguistic behavior in an institutionalized academic setting, having a set of communicative functions mutually understood by established members of the academic community. Irrespective of the subject it serves, the abstract functions as being "advance indicators of the content and structure of the following text"(J. Swales, 1990); and it functions as a representation, a front matter, and as a summary (Bazerman, 1984; Bhatia, 2014; Kaplan et al., 1994; J. Swales, 1990). Though, each thesis or dissertation and research is prefaced by an abstract and if all are prepared by the same author, meant for the same readership and share the same contextual configuration, the abstract is thought of as a distinct and independent discourse genre of an associated text (i.e. dissertation or research article).

1.2 Types of Abstract

Linguistically, scholars in linguistics compare two types of abstract the traditional abstract with a recently new form the structured abstracts. The structured abstract comprises sub-headings, such as background, aim, method, results, and conclusions; which are more appropriate to researches in medical disciplines and other scientific disciplines. Hartley (2008) examines the benefits of the structured abstract in comparison to the traditional one. The results of his work show that the structured abstract holds more information, it is easier to read, easier to search, facilitated peer review for conferences, and finally it is generally preferred by the readers and the authors. His conclusion reveals that the structured abstract is usually longer, more informative and found to be clearer by the readership, so it is more effective than traditional abstract. Another classification of abstract has been investigated by (Antic, 2009) who goes to classify abstract into two types Descriptive and Informative. Descriptive abstract, which is more appropriate to be applicable in papers rather than in theses and supply a general idea about the

information inside the work body; what the reader will deal with rather than a summary of the actual results. It includes general statements; it fits more long papers and can be written previously before the paper itself is drafted. Informative abstract this type provides a summary of the main information, such as methods and materials, results and conclusions. This kind of abstract is more satisfactory to papers or reports about original research and is usually written after writing the complete paper. The theses and dissertations are often a high supported stakes genre at the top of the “academic genre ladder” (J. M. Swales, Feak, & Hixson, 2000) and the most significant piece of writing that most students will ever do. This is due to that in most cases writing a thesis or dissertation is only attempted once in a graduate student’s career. Therefore, abstract writing is an academic practice that all candidates in different disciplines have to adopt when they write a full MSc/MA or PhD work while doing their postgraduate course or research. The great majority of these /dissertations are prefaced by blending between an informative abstract, which contains a “factual summary of the much longer report, and is meant to give the reader an exact and concise knowledge of the full dissertation” (Bhatia, 2014) and structured one which contains sub headings serve the aims of the study.

1.3 The Language and Structure of Abstract

Writing abstract as a genre of academic scientific text should undergo the way of writing scientific text. Scientific text is characterized by being precise, impersonal, and objective. It is also distinguished by using the third person, the passive tense, complex terminology, and various footnoting and referencing systems. To communicate the ideas easily and apparently the scientific writers need to be conscious of many features and conditions in language and style like choosing short sentences to express ideas and stick to the same verb tense. In addition to that, the writers must avoid translation from their native language, and avoid unnecessary repetitions, questions, and unsolved problems (Antic, 2009; Hartley, 2008; Ra’uf & Foo, 2017; Rustam, 2006). Concerning the structure of the abstract, there are different structures that are constructed by scholars to fulfill the needs of the wide variety of academic writing in different disciplines. One of the models such as Swales’ CARS model (Creating A Research Space) (J. Swales, 1990) (CARS) which consists of moves to construct articles introductions and abstracts, each move consists of different constituent steps. The moves are Move 1 Establishing a territory: claiming centrality, making a topic generalization, reviewing items of previous literature. Move 2 creating a niche: counter-claiming, indicating a gap, question raising, continuing a tradition. Move 3 occupying the niche: outlining the purpose or announcing present research, announcing principle findings, indicating RA structure. The most familiar and common model that the theses and dissertations are structured with is the IMRAD model which has been a very standardized structure since the 20th century. The IMRAD model (introduction, methods, results, and discussion) has become the most used standards of today’s scientific discourse in scientific projects. Gradually, this structure has been considered the ideal outline for scientific writing and the works with this structure started to appear after 1935, for example, the field of physics had already adopted the model in the 1950s. In 1972, the IMRAD format became standard for the preparation of scientific papers for written and oral presentation and publication at organizations including chemical, biology, and medical disciplines. This model is a highly structured way of presenting that is devoted to the scientific community members and helpful to editors and readers because it makes the work clearly formatted to benefit readers. It facilitates the process of peer review facilitates modular reading, that

is the readers do not read in a linear way but browse in each section of the work, looking for particular information, which is normally found in pre-established areas of the work (Dominiczak, 2013; Sollaci & Pereira, 2004).

II. METHODOLOGY OF THE STUDY

III. TABLE 1: THE QUESTIONS THAT ARE PRESENTED TO THE STUDENTS TO COLLECT THE DATA

No.	Questions	
1	Do you have an idea about the importance of Abstract in academic writing?	
2	Did you take any English academic writing course includes how to write an abstract of thesis/dissertation during your (MA or PhD) education?	
3	Did you follow a standard model or guideline for writing the abstract of your thesis/dissertation? If yes, mention it in the comment space.	
4	Did you take other theses/dissertations as sample models during writing the abstract of your thesis/dissertation?	
5	Did you get assistance from your supervisor during writing the abstract of your thesis/dissertation?	
6	Did you get assistance from other persons like an English instructor / professor or professional translator, during writing the abstract of your thesis/dissertation?	
7	Did you have any idea about the language of scientific text before writing the abstract of your thesis/dissertation?	
8	Did you face difficulties in writing the abstract of your thesis / dissertation in the English language?	
9	Are the difficulties that you faced in writing the abstract of your thesis / dissertation in the English language due to some difficulties with grammar?	
10	Are the difficulties that you faced in writing the abstract of your thesis / dissertation in the English language due to some difficulties in vocabulary?	
11	Are the difficulties that you faced in writing the abstract of your thesis / dissertation in the English language due to some difficulties in selecting suitable words to the context?	
12	Are the difficulties that you faced in writing the abstract of your thesis / dissertation in the English language due to some difficulties in presenting and developing ideas?	
13	Are the difficulties that you faced in writing the abstract of your thesis / dissertation in the English language due to some difficulties in the organization?	
The open ended questions	1	Did you write the abstract of your thesis / dissertation in specific structure? If Yes, what is this structure?
	2	What are the procedures that you did to overcome the difficulties during writing the abstract of your thesis / dissertation?

The qualitative data concerning the abstract genre in this study aims to examine the academic writing difficulties of the Iraqi EFL postgraduates in biological disciplines in different universities as an attempt to solve the problems encountered by a wide number of Iraqi EFL postgraduates in other disciplines. This is a qualitative study is supported by semi-structured interviews with students to gather qualitative and quantitative data. The participants are 20 MSc and 12 PhD total 32 postgraduates who have finished their high study at six different universities from seven academic disciplines represent a broad cross-section of practice, namely: Bacteriology, Genetic Microbiology, Parasites, Physiology Animal, Mycology, Plant Protection, and Plant Taxonomy. To gather the data of this study the students have answered a questionnaire consists of two parts the first part includes 13 close questions investigate the difficulties that they had faced in writing the abstracts of their theses/dissertations. The second part includes two open questions one of them is to consider the structure that the students had used in writing the abstracts and the other is to know the strategies they had followed to overcome the difficulties they faced. In the first part of the questionnaire Q1 & Q2 are used to gather the data about the importance of abstract and about academic writing, Q3 & Q4 about the guideline in writing the abstract, Q5 & Q6 about whether the students got an assistance in writing the abstract, and Q7 – Q13 about the difficulties they faced during the writing of the abstract. All these questions

had been answered with YES or NO, then the questionnaire ends with the two open-ended questions (table 1). Finally, after the students answered the total number of 15 questions of the questionnaire, the data were collected and all the questionnaires were reported as valid. Eventually, the information was analyzed, the findings were discussed, and some recommendations were suggested.

IV. RESULTS OF THE STUDY

The analysis of the collected data reveals that all 32 students in all the disciplines are aware of the importance of the abstract as a genre of academic writing (Q1). Their responses to (Q2) emphasize that only two of them attended an English academic writing course about abstract writing. Concerning (Q3) the use of a model or a guideline in writing the abstract 100% of the students answered with No, and their ways in facing such difficulty have been distributed on (Q4) using other theses 94% of the students answered with YES. Getting assistance (Q5)& (Q6) supervisor's help 62.5% of the answers were YES, and other persons, help 50% of the answers were YES. In (Q7) which concerns the difference between scientific text and literary text 87.5 % of the students answered with Yes. In (Q8) which emphasizes the difficulties in writing the abstract 100% of the students answered with YES. The difficulties have been varied distributing among different language concepts; however, in (Q9) which concerns difficulties with grammar 56.5% of the students' answers were YES, while in (Q10) that concerns difficulties in vocabulary 87.5% of the students' answers were YES. The students' answers about difficulties in selecting words within the context in (Q11) were 87.5% with YES, and the answers in (Q12) that is related to the difficulties in presenting and developing ideas were 62.5% with YES. The answers at the end of the first part in (Q13) which represent 56.5% of the students were with YES about the difficulties in the organization of thesis/dissertation as it is shown in (table 2) and (Fig.1). According to the data analysis of the open-ended questions, the results in the first question show that 100% of the students write the abstract in a specific structure. The results in the second question show that students did different procedures to overcome the above difficulties in that 50% of the students used others theses, 25% of them used articles, 40% of them selected used website programs translation, 85% of them used dictionaries, 35% of the students obtained the supervisors assistant, 35% from them depending on professional translators help and 10% of the students used other devices.

Table 2: The Percentage of the Students' Responses

<i>No. of Question</i>	<i>Percentage of Yes (%)</i>	<i>Percentage of NO (%)</i>
1	100	0
2	6	94
3	0	100
4	94	6
5	62.5	37.5
6	50	50
7	87.5	12.5
8	100	0
9	56.5	53.5
10	87.5	12.5
11	87.5	12.5
12	62.5	37.5
13	56.5	53.5

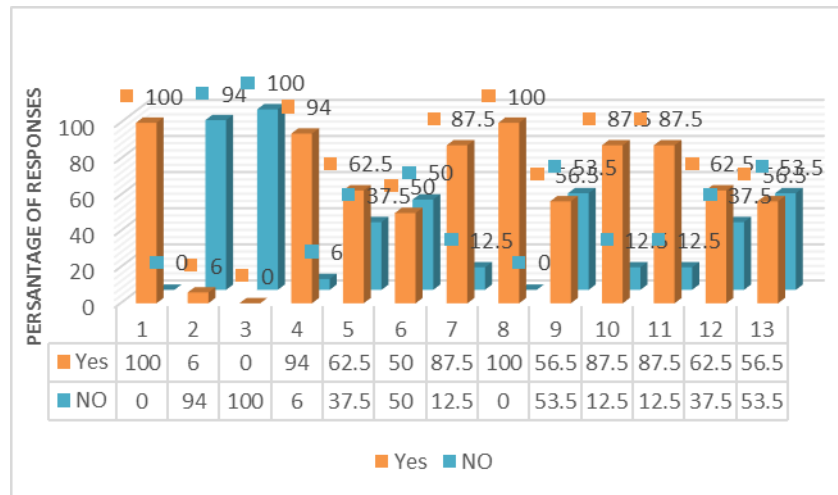


Figure 1: The Number of the Percentage of the Students' Responses and the Number of Questions

V. DISCUSSION OF THE STUDY

The abstract of thesis / dissertation is one of the most important genres that play a pivotal role in academic writing practice and the development of different scientific areas. Since it is not read without reference to the body of the thesis / dissertation, it cannot be considered as an independent part; so this characteristic and its functions facilitate the reading task by providing a brief preview. According to participants' responses, all the 32 postgraduates in all the biological disciplines are aware of the importance of abstract in writing their theses / dissertations, but they face many difficulties and problems during writing their abstracts. One of the reasons behind these difficulties is that the majority of the students did not attend any academic writing course about how to write an abstract and even to write a thesis or a dissertation during their study of MSc or PhD. This leads to the lack of background knowledge about the academic writing in general and the abstract as one of its important practice in particular. Therefore, the students did not have any idea about the standard models, guidelines, and types, of the abstract; moreover, they did not have a background about its structure and language as a scientific text except using jargons in writing the abstract. Thus, all the (32) postgraduate students emphasized that they were struggling to write their abstracts in English language because they faced great difficulties some of them are related to language and some are related to the organization of the abstract. The most frequent difficulty as it is shown in (Fig. 2) that (28) of the students faced is represented in selecting the suitable vocabularies. Although, the difficulty that had resulted from the lack of vocabulary is related to the previous challenge, it was a problematic issue in writing abstracts for most of the students while (4) of them found that vocabulary is not a difficulty. The same number of students (28) faced difficulty in choosing the appropriate words to the context even when they know the meaning. According to presenting and developing their ideas, (20) students do not know how to use language to elaborate their thoughts and how to derive the most important information from a huge scientific practical work in order to write a good and valid abstract. Based on students' responses, the data indicate that the majority of them (18) shared the same difficulty in writing their abstracts with correct grammar except (14) of the students who had overcome this problem. Organizing the abstract was among the difficulties faced by (18) of the students and this is due to the lack of the background knowledge in academic writing and abstract structure. Consequently, the students tried to get over

the previous difficulties using various procedures in that the data indicates that a considerable number of them (16) used other theses or dissertations as a sample and imitate the writers in what they did. In addition to using other theses or dissertations, (8) of the students tended to use articles and literature of previous scientific researches whereas (10) of them solved their problems by selecting suitable words and phrases from sources and copying them to their abstracts. The results analysis revealed that only (28) students used dictionaries, but not all of them used scientific ones. And (12) students tended to use other procedures like using websites to get writing experience related to their fields, writing drafts and revising them with senior students or peers, and making discussion with them in terms of the language and the organization of their abstracts. On the other hand, some students decided to get help of others to avoid problems in writing their abstracts so, (10) of them asked their supervisors for assistance and (10) others asked other persons like English instructors or translators. Considering the responses about the structure of their abstracts, all of the (32) students declared that they had used a specific structure of abstract though no one of them had knowledge about any standard model or guideline in writing abstract. Therefore, the majority of the students' abstracts had written with structures that contain an introduction, aim, method, results, materials, results, discussion, and conclusions, sometimes the wording of these sub-headings vary a little, for example "objectives" for "aim" and "background" for "introduction", but the content is the same. Some of the students added more moves like the problem of the study and the procedures, whereas other students removed such moves and some other moves like background, discussion, and materials. There were only (2) students used a different structure in writing the abstract in which they are indicating thesis structure and content so by using these moves, they illustrate the thesis structure by using only aim, method, and results with numbers only without discussing them.

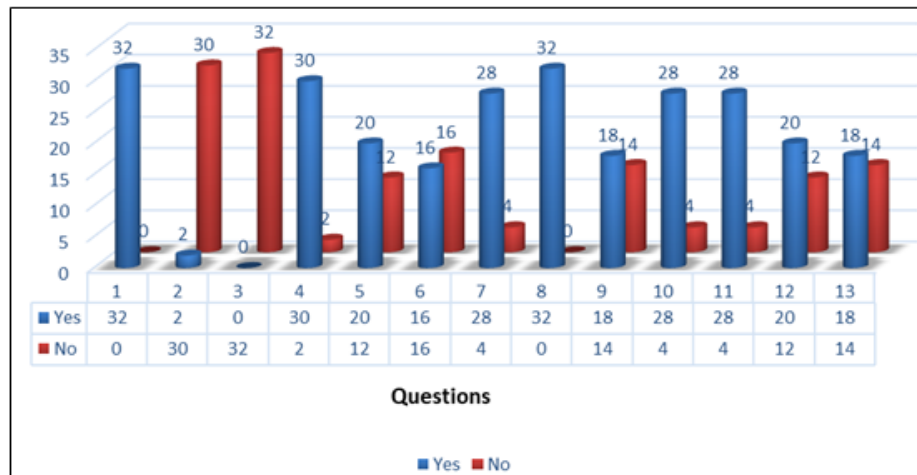


Figure 2: The Number of Students and the Number of Responses Representing the Difficulties in Writing Abstract

VI. CONCLUSION

The data analysis presented in this paper has shown that the abstract is a sophisticated and complex textual construct, which connects the personal and the public communicative, the professional and the academic experience. The widespread use of this genre in postgraduate theses and dissertations reveals its importance to students in all disciplines and underlines its significance in scholars' international cooperation. Through this genre, the writers are able to represent themselves in terms of their disciplinary practices and the use of language to achieve academic

aims. Despite the awareness of the abovementioned importance of abstract genre, the students in this study reported that they did not have any background about academic writing specifically abstract affirming that they took other theses / dissertations to get ideas for language, expression, content, and structure. The postgraduates in all biological disciplines faced difficulties in writing abstracts of their theses / dissertations, which range from difficulties in grammar, word selection, vocabulary, and developing ideas followed by difficulties in organizing and structuring the abstracts. In this sense they faced various syntactic, semantic and rhetoric difficulties in writing their abstracts. Since the postgraduate students do not have a standard model to construct abstracts, they had written the abstracts in a mixed form between the structured and the informative abstract in that they face difficulty to take decision about the priority and the necessity of the moves in the abstract structure. Yet, some of them removed certain sections and added others like discussion and problem that makes the abstract somehow undergoes the IMRAD model. Therefore, it is obvious that achieving a good and perfect written abstract is quite a difficult process to the Iraqi postgraduate students in biology because they do not have sufficient information about scientific text as an academic writing. Another reason is the lack of experience in English language and the lack of integration between the language development and the academic development. Although, the abstract is a representation of the theses / dissertations whose content is derived from the rest of the work and not from material, which is in other works, it cannot be written simply by cutting and pasting the sentences from the body of the theses / dissertations. Teachers can greatly assist the students by raising their awareness of the importance of this genre as an academic practice and the ways they can structure their abstracts to produce a valid and a perfect scientific communicative device. This can be achieved via various effective and controlled plans, for example curriculum designers should take into consideration many linguistic points when dealing with academic writing especially in EFL contexts. Thus, academic writing should be one of the important parts of universities programs, as students at this level need effective writing practice in their fields or even need to attend lectures or workshops. To assist novice writers to be successful in abstract writing, different types of models, guidelines, and samples should be presented to the students. Moreover, it will be helpful to expose the students to different types of writing references such as books, journals, and websites with which students can develop their lexicon, academic vocabulary, and expressions as well as can identify their structures and organizations. Therefore, such strategies will make the students able to express effectively their points of view and ideas in their own words in that they are able to know how to write not merely what to write.

REFERENCES

- [1] Antic, Z. (2009). Some implications for teaching scientific medical writing. *Acta. Fac. Med. Naiss.* 26: 55, 60.
- [2] Bailey, S. (2014). *Academic writing: a handbook for international students*: Routledge.
- [3] Bazerman, C. (1984). The writing of scientific non-fiction: Contexts, choices, constraints. *Pre/text*, 5(1), 39-74.
- [4] Bhatia, V.K. (2014). *Analysing genre: Language use in professional settings*: Routledge.
- [5] Buslz, M.G. (2005). The use of metadiscourse in abstracts: A comparison between Economics and Psychology abstracts. *Dialogue within Discourse Communities: Metadiscursive Perspectives on Academic Genres*, 28, 31.
- [6] Dominiczak, M.H. (2013). Art, Science, Words, and IMRAD. *Clinical chemistry*, 59(12), 1829-1831.
- [7] Hartley, J. (2008). *Academic writing and publishing: A practical handbook*: Routledge.

- [8] Hyland, K. (2000). *Disciplinary discourses: Social interaction in academic genres*. Harlow, UK: Longman.
- [9] Hyland, K. (2004). *Disciplinary discourses: Social interactions in academic writing*: University of Michigan Press.
- [10] Kaplan, R.B., Cantor, S., Hagstrom, C., Kamhi-Stein, L. D., Shiotani, Y., & Zimmerman, C. B. (1994). On abstract writing. *Text-Interdisciplinary Journal for the Study of Discourse*, 14(3), 401-426.
- [11] Lorés, R. (2004). On RA abstracts: from rhetorical structure to thematic organisation. *English for specific purposes*, 23(3), 280-302.
- [12] Martín-Martín, P. (2005). *The rhetoric of the abstract in English and Spanish scientific discourse: A cross-cultural genre-analytic approach* (Vol. 279): Peter Lang.
- [13] Martín, P.M. n. (2003). A genre analysis of English and Spanish research paper abstracts in experimental social sciences. *English for Specific Purposes*, 22(1), 25-43.
- [14] Oxford, O.E. (2009). *Oxford English Dictionary*: Oxford: Oxford University Press.
- [15] Ra'uf, M.M., & Foo, T.C.V. (2017). Academic Writing in Science: Iraqi EFL Postgraduates' Difficulties in Writing Abstracts of Theses and Dissertations in Physical Disciplines. *Advanced Science Letters*, 23(4), 2734-2739.
- [16] Rustam, A.H. (2006). Epidemic network and centrality.
- [17] Salager-Meyer, F. (1992). A text-type and move analysis study of verb tense and modality distribution in medical English abstracts. *English for specific purposes*, 11(2), 93-113.
- [18] Sollaci, L.B., & Pereira, M.G. (2004). The introduction, methods, results, and discussion (IMRAD) structure: a fifty-year survey. *Journal of the medical library association*, 92(3), 364.
- [19] Swales, J. (1990). *Genre analysis: English in academic and research settings*: Cambridge University Press.
- [20] Swales, J.M., Feak, C.B., & Hixson, V.S. (2000). *English in today's research world: A writing guide*: University of Michigan Press Ann Arbor.
- [21] Ventola, E. (1994a). Abstracts as an object of linguistic study. *Writing versus Speaking: Language, Text, Discourse, Communication*. Tübingen: Gunter Narr, 333-352.
- [22] Ventola, E. (1994b). From Syntax to Text: Problems in Producing Scientific Abstracts in L2. *The Syntax of Sentence and Text: A Festschrift for Franti ek Dane*, 42, 283.