输出理论注意功能在英语医学单词学习之实证研究

张洁著

中国海洋大学出版社

输出理论注意功能在英语医学单词学习之实证研究

An Empirical Study on Output as a Method for Noticing in English Medical Vocabulary Learning

张 洁 著

中国海洋大学出版社
·青岛·

图书在版编目(CIP)数据

输出理论注意功能在英语医学单词学习之实证研究/张洁著. —青岛:中国海洋大学出版社,2019.8

ISBN 978-7-5670-2295-9

Ⅰ. ①输… Ⅱ. ①张… Ⅲ. ①医学—英语—词汇—教学研究 Ⅳ. ①R

中国版本图书馆CIP数据核字(2019)第146976号

出版发行	中国海洋大学出版社		
社　　址	青岛市香港东路23号	邮政编码	266071
出 版 人	杨立敏		
网　　址	http://pub.ouc.edu.cn		
电子信箱	44066014@qq.com		
订购电话	0532-82032573(传真)		
责任编辑	潘克菊	电　　话	0532-85902533
印　　制	日照报业印刷有限公司		
版　　次	2019年8月第1版		
印　　次	2019年8月第1次印刷		
成品尺寸	170 mm × 240 mm		
印　　张	5.5		
字　　数	130千		
印　　数	1—1000		
定　　价	28.00元		

发现印装质量问题,请致电0633-8221365,由印刷厂负责调换。

前　言

Preface

随着全球化的发展，我国与其他国家的交流越来越频繁。医药卫生事业的国际交流也更加频繁，势必促使医学工作者阅读大量的国外文献，学习国外的医疗技术，与国外的学者相互交流，因此，医学英语的重要性日益凸显。

医学是一门分支学科众多、涉及领域广泛的科学。而英语医学专业词汇，作为医务工作者必备的专业语言，其数量之庞大，拼写之冗长，令许多医学生和临床医师等专业人员望尘莫及。在理解和记忆单词上面往往要花费大量的时间和精力。众所周知，许多英语医学词汇来自希腊语和拉丁语，因此国内不少研究者都把注意力集中在构词法上，希望能借助构词法有效地输入英语医学专业词汇。但是想要记住众多的前缀后缀等的确不是一件容易的事情。有没有其他的方法更有效地学习英语医学词汇呢？

本书旨在通过写作的任务布置来验证输出假设之注意功能在英语医学词汇中的学习。来自某医科大学预防专业 102 名大三学生参与了实验。在为期三个月的教学实验期间，实验组和对照组课堂输入全部相同，实验班 34 人接受了课后以写作为主要输出方式的任务布置，而对照班 69 人无此要求。结果发现实验组的测试成绩明显高于对照组，且在词汇的认知能力和生成能力方面均超过对照组。

实验后又通过问卷的形式针对学习时间、策略、动机以及学习效果的评价分别做了调查。结果发现实验班和对照班在学习时间上不存在差异，即任务布置并没有使得实验班花费的时间比对照班花费的时间多。回归方程显示学习时间解释了成绩的 10.1%。其次对于学习策略的选择，两个班有不同偏好，但两个班在自我感知效果上不存在差异，尤其是实验班并没有表现出对于写作策略的偏向。但

是客观上写作策略确实存在于实验组，回归分析显示写作策略解释了学习成绩的5.6%。进一步调查还发现虽然学习者对于各种学习策略都比较认同，但是实践中却仅仅局限于一两种，除了构词法外，死记硬背法是两组学生共同的偏好。最后对于学习动机的调查结果显示实验班的学习动机要强于对照班的学生，回归方程也印证了这一点，学习成绩的14.9%受到了学习动机的影响。

本书论证了输出假设注意功能确实对英语医学词汇学习产生了良好效果，通过写作输出这一形式，学生能够有效地注意到交流中遇到的问题，进而更加关注之后的输入用来解决之前遇到的问题。最后本书提倡转变观念，重视输出，提高师生的输出意识，并利用各种任务和活动丰富写作输出形式，同时加强学生英语医学词汇的学习策略。

由于本实验受众有限，数据采集并不能做到全面，加之理论也比较新，相关参考资料比较少，书中错误或疏漏在所难免，恳请广大读者批评指正。

编　者

2019年7月

目 录

Contents

LIST OF ABBREVIATIONS

CI	Comprehensible Input
CO	Comprehensible Output
IL	Interlanguage
L2	Second Language
MO	Modified Output
NS	Native Speaker
NNS	Non-Native Speaker
TL	Target Language
SLA	Second Language Acquisition

CHAPTER 1
INTRODUCTION

With the increase of global communication, the cooperation and communication between China and other countries becomes more and more frequent, so is communications in the medical and health field. Medicine not only involves various subjects related to health but also extends to different researching fields that explore life essence and matrix. And English medical terminology is a set of specialized medical terms essential for health care professionals in their effective and accurate communication. It is estimated that there are over 500,000 modern English vocabularies; whereas English medical terms embodied in *New English-Chinese Medical Dictionary* were more than 200,000 (Liu Hongtao,1994). With the fast development of health industry, the number of the English medical vocabulary is growing at a high speed, and it is estimated that 1500 new medical words appear every year (Huang Hua, 1998). Because of the tremendous numbers of vocabulary and most of the English medical words being long and hard to memorize, it is very difficult to teach or learn medical English, especially the English medical vocabulary.

On the other hand, 75% of English medical terms, especially the compound words, come from ancient Latin or Greek (Dorland's Illustrated Medical Dictionary, 24th edition). As reported in the *Journal of Medical Education* (1980 (55): 128-129), the average American medical students have to learn in their first year of study about 15,000 medical terms, approximately 94% of which derive from Greek or Latin. Thus, learning the meanings of the morphemes or word parts of English medical terminology and the combining principles that govern their arrangement is always regarded as the

key to English medical terminology learning. In this case English medical vocabulary is known to be vast in numbers, complicated in form and difficult in comprehension and memorization. English medical vocabulary learning and long-term memorization has always been a difficult task for both health professionals and medical students.

As an obligatory course in tertiary education, Medical English is offered for junior students in most medical colleges in China. Unlike the college English, medical English teaching, as one part of specialized English teaching, has no criterion for teaching and evaluation. With the limitation of class hours and the teaching materials, instructors find it hard to offer the medical English input efficiently. Another phenomenon is that most medical English classes consist of students of two to four different majors, which means that the number of the students probably accounts for 90 to 120 together for each class. Obviously, there are fewer opportunities for output in subject-matter classes where the teachers do most of the talking and the students have relatively limited opportunity to interact. Such a great number of students also provide a dilemma for teachers to organize the teaching activity, let along the effective interaction in class and evaluation of output after class.

Linguistic teachers and medical professionals have tried different methods and approaches in helping learners to understand and remember medical vocabulary, such as morpheme analysis, reading and translation as well as the content-based instruction, *etc*. And with the influence from Krashen's comprehensible input (CI) hypothesis, teachers also spend lots of time and efforts in CI in class. Lots of studies and effort have been focused on the CI of medical vocabulary as well (*i.e*. etymology). But the results are not satisfactory enough.

According to Dang Chenghua (2008), from the perspective of linguistics, students' attitudes, motivation, and even personality can decide the success or failure in their English learning. For medical English, the teaching effect is never satisfactory; students' attitudes towards the medical English also contribute to the current situation. For them, medical English is no more than an ordinary course and its significance cannot match that of the common core college English. Also, since it is a compulsory course, they have to learn without any choice even though they have no interest in it at all. With limited class hours and the above problems, how to teach and study medical English, especially English medical vocabulary effectively has been a focus for both teachers and students.

Swain's comprehensible output (CO) hypothesis seems to provide a good theoretical explanation for the dilemma of medical English teaching and learning in China. Aiming at the unbalance of input and output and separation of them in medical English class, the present study tries to investigate the feasibility of application of CO hypothesis in the English medical vocabulary learning.

Swain's CO hypothesis may complement Krashen's CI hypothesis in second language acquisition (SLA) research. Since English medical vocabulary plays a very important role in the medical English and how to make good use of Swain's theory is worth further studying and investigating. This study empirically conducts the task demands to investigate the correlation between CO hypothesis and English medical vocabulary learning and examines the extent of CO hypothesis with a condition of the same input.

The purpose of study reported is to investigate the extent of the CO hypothesis in English medical vocabulary acquisition. Specifically, this research will answer the following question:

Will output (essay-writing) intervention bring about a better result in the English medical vocabulary learning?

CHAPTER 2
LITERATURE REVIEW

This chapter contains a review of the literature relevant to the present study. This review begins with a survey of the theoretical constructs of memory model and lexical knowledge. Then, an overview of the theoretical and empirical investigations of CO hypothesis related to SLA is provided.

2.1 Memory Model

In a language classroom, learners get language input from a variety of sources. As teachers we want to help learners make the most of this language. Long *et al.* (1985) claim that "quality" input may trigger the mechanism of language acquisition and enhance the development of interlanguage (IL). Input that becomes part of the learning process is known as intake. In psycholinguistic research, there is a particular interest in the intake of grammar as a result of learners paying conscious attention to the input; this kind of intake is known as noticing (Schmidt, 1990). Schmidt, who termed the notion of "noticing" firstly, contended that not all "input" is in the same value and only the noticed "input" may be "accepted" and processed effectively. That is, "noticing" is necessary to information processing.

According to Peter Skehan's claim, there are three stages during the information processing: input, central processing and output. In the part of central processing, "noticing" is a very important conception. Skehan (1999) described the memory model in *A Cognitive Approach to Language Learning* which allows us to know how learners memorize and which factors influence the process of memorization. The following

figure illustrates that the four factors may influence "noticing".

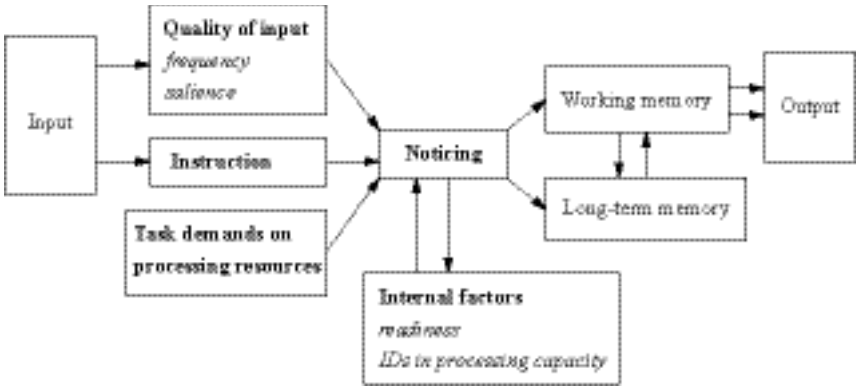

Figure 2.1 Noticing in the Central Processing of the Memory Model(Skehan,1999)

1. **Input**. According to Skehan's claim, the input of quality depends on "frequency" and "salience". A language feature may become common to a learner due to repeated instruction or by way of teacher talk. As such, when the item does appear more frequently in the input, the likelihood that an item will be noticed and integrated into the IL system is increased (Schmidt, 1990). Also, as Skehan (1998) suggests that at times learners' attentional resources are stretched and a form may, on occasion, go unnoticed. Therefore, the more frequently an item is made, the greater opportunity the noticing will happen. On the other hand, the more prominent a language form is at input, the greater chance it will be noticed (Skehan, 1998). It stands to reason, in turn, that the less salient a form is, the less likely it is to be noticed and such forms include those morphemes that are bound, contracted, or unstressed (Slobin, 1985).

2. **Instruction**. Schmidt (1990) proposes that instruction may play an important role in priming learners to notice features by establishing expectations about language. In contrast, Ellis (1997) points out that instruction serves to draw attention to items that do not conform to expectations and may therefore not be noticed. We can see instruction, whatever it is, plays an important role in the noticing process (Schmidt, 1990; Schmidt & Frotal, 1986). In practice, input consists of different contents for information processing while a learner's task is to draw the relevant and needed contents. The contents that the learner draws on are significantly characterized. Then instruction provides structured, differentiated input that assists noticing by focusing attention on and enhancing awareness of language features (Skehan, 1998). But which content being of priority is decided by learners themselves with the principle

of convenience and benefit. So the role of instruction is that it triggers the learner's attention/noticing rather than the contents themselves that are explained or illustrated.

3. **Task demands on processing resources**. Task demands refer to the way in which an instructional task causes learners to notice particular features that are necessary in order to carry out that task (Schmidt, 1990). That is also related to the language performance of learners in the activity. To achieve this, Ellis (1997) suggests that language features may be made intentionally prominent or the task to be designed "forces" learners to process the language. Also, Skehan (1998) points out that noticing may be more or less likely depending on whether the level of processing that the tasks demand is low, such as in the exchange of familiar information, or high, as in a task that requires imaginative and abstract decision-making. The task demands, effecting "noticing", not merely provide the requirement for learners during their information processing but make certain language forms salient through tasks or activities.

4. **Internal factors**. They refer to the readiness of learner and individual difference in processing capacity. The readiness of learners is the prior condition for "noticing". That is to say, to some certain extent, "noticing" is the combination of current knowledge system and processing capacity. The readiness of learners could decide what the learner can notice and to which extent they notice. The noticed production could be integrated into learners' IL and be acquired by learners. Individual differences in processing capacity are manifested in forms and extent of input information. Some individuals process the information more effectively and they are rather easier to notice the new information among certain specific input than others.

Atkinson & Shiffrin (1968) claim that memory system is composed of three parts: sensory memory, short-term memory and long-term memory. And some researchers apply the "working memory" instead of short-term memory. From Figure 2.1, it can be seen that "noticing" influences not only working memory but also long-term memory and the working memory ultimately results in the output or production. So "noticing" plays a significant role in the memory model and indirectly influences output.

Among the four factors, input, instruction and task demands can be operated and controlled, whereas the internal factors mostly depend on learners themselves. Then in this study we'd like to manipulate the task demands for learners, ensuring the identical input and instruction, to check whether the output acts as a tool for noticing in English medical terminology learning. This is also the purpose of the study.

2.2 Lexical Knowledge

Lexical knowledge encompasses all the information that is known about words and the relationships among them. L2 vocabulary acquisition as the part of the SLA has received scant attention. This is because linguistics has historically predominated over the second language acquisition, not only in terms of theoretical frameworks, but also in terms of focus on various topics. Within linguistics, the lexicon has been on the second place in terms of theory construction (Gass, 1988).

The lexical knowledge is emphasized in a broad sense: that includes such aspect as the syntactic features that are part of a lexical item. Nation (1990) presented a list of aspects (see Table 2.1) that a learner has to acquire about a specific word, including different aspects of a word. According to Nation, a complete mastery of a new word includes two kinds of knowledge of the word: receptive knowledge (R) and productive knowledge (P). According to her statement, receptive learning refers to the ability to recognize a word and recall its meaning when it is met. Productive learning refers to what receptive learning need and the ability to speak or write needed vocabulary at the appropriate time. (Nation, 1990, P. 5) thus it can be seen that the receptive knowledge is the foundation, from which productive ability could derive. From this point, two sets of vocabularies are depended on enough input that makes it possible for learners to recognize a word and recall its meaning when it is met.

Table 2.1 Knowledge of a Word

Category	Example	
Form		
Spoken form	R	What does the word sound like?
	P	How is the word pronounced?
Written form	R	What does the word look like?
	P	How is the word written and spelled?
Position		
Grammatical patterns	R	In what patterns does the word occur?
	P	In what patterns must we use the word?
Collocations	R	What words or types of words can be expected before or after the word?
	P	What words or types of words must we use with this word?

(*To be continued*)

Category	Example	
Function		
Frequency	R	How common is the word?
	P	How often should the word be used?
Appropriateness	R	Where would we expect to meet this word?
	P	Where can this word be used?
Meaning		
Concept	R	What does the word mean?
	P	What word should be used to express this meaning?
Associations word	R	What other words does this make us think of?
	P	What other words could we use instead of this one?

(Nation, 1990: 31)

However, some lexical knowledge can be controlled by the input only, whereas some are learner-controlled, such as productive knowledge. Compared with the receptive knowledge, productive knowledge is theoretically controlled and noticed by learners more easily in output than input since it is when L2 learners need to produce target language (TL) that they will naturally notice such problems like that how the word is written and spelt, in what patterns they must use the word and so forth. And by means of output the productive knowledge can be enhanced.

The pedagogical implication of the dichotomy of receptive and productive notion is that it is not enough for medical students only with CI during English medical vocabulary learning although the two sets of vocabularies are not known distinct for learners themselves. Rather, English medical vocabulary knowledge could be taught with the initial stage being recognition and the final stage being production. Thus the English medical lexical knowledge can be acquired completely. It is through output that students are pushed to produce English medical vocabulary to trigger the "noticing" mechanism, enhancing memorization and manipulation of English medical terminology.

2.3 Comprehensible Output Hypothesis

In an article, Swain (1985) argues that CI is not sufficient for successful SLA but that opportunities for nonnative speakers (NNSs) to produce CO are necessary. Swain

found that although immersion students were involved in a rich source of CI over a period of 8 years, their IL performance was still off-target; that is, they were easily identified as nonnative speakers or writers. In particular, Swain explained that the expressive ability of these students was much weaker than that of the native speakers (NSs) of French. Swain (1985) argued that the IL performance of these students was still off-target because they lacked chances for output in two ways. Firstly, enough opportunities were not given for the students to use the target language in class. Secondly, without enough cognitive or social pressure the students were not "pushed" to produce language to express their intended meaning. That is, what immersion students needed was not just CI, but also opportunities for CO in order to be more accurate and proficient in L2. Thus Swain insisted that understanding TL is not enough and learners must be provided with the opportunity to produce them. Based on findings from studies she conducted in immersion contexts in Canada, Swain proposed CO hypothesis related to the SLA. According to CO hypothesis, by means of production of language, no matter oral or written form, an L2 learner is "pushed" to make his/her output more precise, coherent, and appropriate especially when the learner experiences difficulties in communicating his/her intended messages successfully and SLA may occur in this process. By the same token, Swain assumed that the forces that make the learners to pay attention to the expressive meaning in order to express accurately and proficiently may be triggered by the output . Swain acknowledged the role of CI in SLA but argued that CO is also necessary. She concluded that comprehensible output (CO) is independent and different from the comprehensible input (CI) in the mechanism of the second language acquisition (SLA). CO, at least, provides opportunities to use the target language in the meaningful contexts, to test out the hypothesis about the target language, and to analyze the language syntactically rather than purely semantically .

Nearly 10 years later Swain (1995), refining the CO Hypothesis, proposed three functions of output in SLA:

1. Noticing-trigger function. While producing the TL, an L2 learner will probably encounter a linguistic problem with the following three responses: (a) ignoring the problem; (b) dealing with the problem with the existing language knowledge; or (c) recognizing the problem, and noticing the relevant input. On the third condition, the linguistic problem attracts the learner's attention to the operation of the specific input in order to find the solution to the problem. That is just the appropriate L2 knowledge