



## Introducing the Modes and Developing Thinking through Translation in Iran

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**Abstract:** The major objective of translation instruction is to improve the efficiency of thinking through translation. To this end, the research on thinking through translation is a prerequisite. According to cognitive psychology, cognitive linguistics and psychology of thinking, this paper first explicates the characteristics of thinking through translation process, the types of transfer thinking and the structure of thinking through translation. Then we summarize the Main differences in thinking through translation because of Experience in Translators. Based on these research findings, this paper proposes that the introducing translations priority should be given to know and optimize the thinking habits and the development of the ability of monitoring thinking. No matter in Iran or somewhere else Suggestions on translation instruction concepts are the same.

[Moloud shagholi. **Introducing the Modes and Developing Thinking through Translation in Iran.** *J Am Sci* 2020;16(11):83-90]. ISSN 1545-1003 (print); ISSN 2375-7264 (online). <http://www.jofamericanscience.org>. 7. doi:[10.7537/marsjas161120.07](https://doi.org/10.7537/marsjas161120.07).

**Keywords:** modes of thinking, translation, characteristics, instruction

### Introduction

Traditional and Text-based translation instruction always focuses on various translation skills and imposes “right” answers on students. It cannot meet learners requirement of efficiently developing their translation competence. Directed at this problem, this paper, from a cognitive perspective, proposes that the priority in translation instruction should be given to optimizing habits of thinking through translation and developing the ability of monitoring thinking about translation process.

Commonly believed that translation process is mean while a complex thinking process (Shreve & Koby, 2003; Dimitrova, 2005). In addition, an expert translator must experience a stage of thinking training, but the established thinking pattern always influences his/her translation process (Chesterman, 1998). Therefore, if we want to teach learners how to translate, we should firstly guide them to learn how to think procedurally and efficiently when translating. A common phenomenon is that many novice translators often think at random and thus are eager to know about certain effective methods of thinking about solving different types of translation problems. In this light, it is obvious that effective thinking through translation becomes the basis of developing translation competence.

Education is the dominant approach to thinking development according to developmental psychology of thinking (Floyd & Carrell, 1987). Therefore thinking through translation can be well developed

and optimized by systemically-designed training. Developing thinking ability is a major objective of education, which is as important as knowledge acquisition. The previous researches into thinking through translation mainly involve the following issues:

(a) The sciences importance in thinking through translation studies (Tourey, 1995).

(b) Some thinking patterns and their characteristics (Gideon, 1991).

(c) Certain differences of thinking underlying the differences between Chinese and English in translation studies (Lörscher, 1997).

(d) Certain aspects of thinking through translation ability in translation instruction (Tirkkonen-Condit, 1997).

In summary, the first three issues seldom refer to translation teaching although they can be beneficial to it. The last aspect for now is only confined to the discussion of translation skills, with little concern with certain guiding principles and methodologies of translation instruction.

Therefore, the present situation of the research into thinking through translation and translation instruction needs to be greatly improved, especially when we are facing increasing social requirements for qualified translators and interpreters. With this aim, we propose that instructors must design translation syllabi and curricula on the basis of a systematic methodological guidance in order to change the existing Text-based didactics and finally increase the

efficiency of translation instruction. The research on thinking through translation can exactly provide efficient methodological guidance for translation instruction.

The main research purpose of this paper is to help both translation instructors and learners to acquire systematic knowledge of thinking through translation and use it as effective guidance in the organization of their teaching and learning. It will facilitate the development of translation competence. To this end, in this paper we firstly research on thinking through translation with an interdisciplinary approach involving the following fields: translation studies, cognitive psychology, cognitive linguistics, and psychology of thinking. The main researched contents involves the basic characteristics of thinking through translation process, the types of transfer thinking, and the structural differences in thinking through translation between novice and expert translators. Further, applying those research findings to translation instruction, this paper puts forward certain guiding principles and methodological suggestions on the training of thinking through translation.

### Characteristics of Thinking through Translation Process

#### *Describing a Cognitive model of Thinking through Translation*

According to Psychology of Thinking, as a senior cognitive activity, thinking involves not just such junior cognitive activities as sensation, perception, and memory but the senior capability of generalization and inference (Tirkkonen-Condit & Laukkanen, 1996). The main approaches of the modern psychology of thinking involve Gestalt psychology (thinking is constant adaptation of the Gestalt), behaviorist psychology (thinking is silent language and behavior as well), information processing model (thinking is serial information processing), as well as connectionism model (thinking is parallel information processing of the neural network). Among them, the information processing model and the connectionism model have established relatively greater influence in recent years.

In the late 70s, with the rapid development of cybernetics, information theory and computer technology, the paradigm of information processing became a popular approach to human cognition. Applying the information processing model to the thinking through translation process thereby became an important research method. Fig. 1 (Liu, 2007) presents the information processing model of thinking through translation.

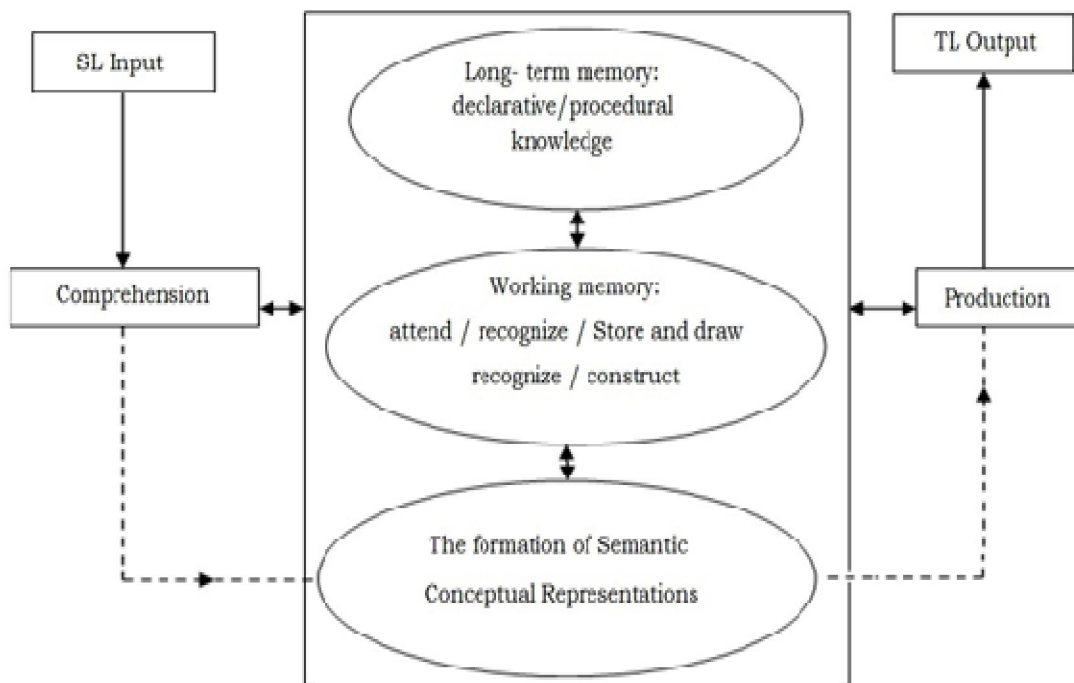


Figure 1 - Processing Modes of Thinking through Translation Process

Fig.1 displays the serial information processing from SL input to TL output<sup>1</sup>. the thinking process of translation in this way forms a process of information transference and reconstruction from comprehension to production with the cognitive system as the supporting mechanism.

#### ***Analysis of Thinking through Translation Process***

The cognitive model mentioned above can be regarded as a prototype of thinking through translation. It present both similarities and differences and reveal certain characteristics of thinking through translation process. In fact, supplemented by further details of translation information processing, the two prototype models have been developed into complex models of translation process, such as Bell (1991), Kiraly (1997), Danks & Griffin (1997). Although these models present certain differences in details, they all still display some basic characteristics of thinking through translation process.

Firstly, thinking through translation process involves serial processing. From SL input/perception to complex transfer process (the one-way sequence from long-term memory to working memory and to semantic representation), and then to TL output, the whole process presents the feature of serial processing.

Secondly, thinking through translation process involves recursive thinking as well. From SL input/perception to transfer process (the two-way sequences of long-term memory, working memory, and semantic representation), and then to TL output, the whole process is also a reversible process, which shows the interaction of bottom-up and top-down thinking processes, although the interactive process may present different cognitive costs at different stages. The recursiveness of thinking through translation process has been verified by the empirical research (Buchweitz & Alves, 2006).

So it is clear that the representational perspective in fact refers to the cultural-situational context and the thinking model closely relevant to it. Gommlich (1997) also argued that for a translator the ability to switch from one representational perspective to the other is a basic process that may be supported or hampered by various factors. So, we can see that translation is not only the transfer between languages but the transfer between two different thinking models, which are closely related to the respective cultural-situational contexts.

In addition, the complex relationship between language, culture and thinking shows that the

difference in thinking modes closely related to certain cultural contexts has become the deepest and most dominating element of the linguistic disparity. Seemingly, translation transfer is a transfer between languages, and yet a deeper layer of transfer is in fact a transfer between different thinking modes underlying L1 and L2. In this light, we can conclude that unlike in the case of single language information processing, the most important characteristic of thinking through translation process is bilingual interactive thinking.

#### **Types of Thinking Trough Translation**

Having discussed the characteristics of thinking trough translation process, in this section of the paper we will make a detailed study of the types of thinking through translation on the basis of the research findings of cognitive linguistics and psychology of thinking. The significance of this section lies in its detailed analysis of the specialty of thinking through translation different from the general single-language-thinking.

The types of thinking through translation, including abstract thinking, visualized thinking, intuitional thinking, monitoring thinking, presupposing thinking, creative thinking, and so on. All these types of thinking should belong in general ones. Thinking through translation in fact presents not just the general properties of thinking but its specialty different from the general ones.

The specialty of thinking through translation lies in its feature as the transfer between two languages and cultures. In this sense, thinking through translation should be a transfer thinking. And the general properties of thinking through translation mentioned above must center on this feature. Kussmaul (1995) once discussed the creativity in translation. He argued that “creativity is not a gift of the select few but a basic feature of the human mind and that we can all be creative when we translate” (ibid: 52). In addition, Kussmaul (2000) put forward five psychological types of creative translation in the process of transfer with such cognitive linguistic ideas as figure-ground, sense-frame, 3 as well as prototype and category. The five psychological types include chaining categories, picking out scene elements within a frame (i.e., a scene of TT replaces a frame of ST), enlarging a scene, framing a scene (i.e., a frame of TT replaces a scene of ST), and creating a new frame. They constitute five types of transfer thinking of translation, which describe the translator’s different strategies in matching ST with TT.

<sup>1</sup> SL is the abbreviation of source language, TL is target language, ST is source text, TT is target text and finally TAPs is think aloud protocols

Table 1 - Types of transfer thinking through translation and their contents

The types of transfer thinking of translation	The types of the match between ST and TT
ST Frame into TT scene	An abstract frame of ST was transferred into a concrete scene in TT
ST Scene into TT frame	A concrete scene of ST was transferred into an abstract frame in TT
Creating a new TT scene	A scene of ST was transferred into a new scene in TT
Creating a new TT frame	A frame of ST was transferred into a new frame in TT
Enlarging the ST scene	A scene of ST was transferred into an enlarged scene with additive elements
ST scene to TT scene	Equivalent match between scenes of ST and TT.
ST frame to TT frame	Equivalent match between frames of ST and TT

The multiplicity of transfer thinking indicates that in the process of translation the translator needs to employ different ways of thinking when he or she matches ST with TT because of certain social, cultural, linguistic and thinking differences involved. In terms of its function, the research on the types of transfer thinking, investigating in cognitive-linguistic perspective, integrates language with thinking organically and thereby effectively explains the psychological mechanism of the thinking types of language transfer involved in translation.

#### **Differences of Thinking through Translation Because of Experience**

Empirical researches with modern computer technologies have revealed certain structural differences of thinking through translation between novice and expert translators, which can be reflected not just in various ways of dealing with textual

materials but in different stages of translation process. Before our discussion about these structural differences, this section firstly offers a detailed analysis of the structural elements of thinking through translation in light of the psychological research into the structure of thinking.

#### ***The Main Elements of Thinking through Translation***

According to psychology of thinking, the structural elements of thinking mainly involve its purpose, process, material, production, monitor, quality, as well as its cognitive and non-cognitive elements. Accordingly, the structural elements of thinking through translation can be further explored in these aspects and on the basis of an analysis of translation process. Table 2, as the result of this exploration, presents the concrete contents of the structural elements of thinking through translation.

Table 2 - The Main elements of thinking through translation

Main elements of thinking	Main contents	The structural elements of thinking through translation
Purpose	Comprehending and solving problems	Comprehending the ST, transferring the thinking models and linguistic signs, and producing the TT
Process	Basic process: analysis and synthesis	Analysis and synthesis of the ST and TT, (cultural-situational) context, and transfer strategies
Material	Perceptual material and rational material	World of works, subjective world, objective world
Production	Concept, judgment, inference	Logic and images, expressive ways, and linguistic representations of the TT
Monitoring or self-adjustment	Meta-cognitive function: focusing, controlling, and adjusting	Monitoring translation process, finding problems in time and adjusting and optimizing translation strategies
Non-cognitive elements	Motive, interest, emotion, attitude, volition, personality	The motive, interest, emotion, attitude, volition, and personality of the translator in translation process

The detailed description of the Main elements of thinking through translation in Table 2 helps both instructors and learners to develop clear and effective cognition of thinking through translation, and thereby greatly facilitate the improvement of their meta-cognition of translation process.

#### ***Differences of Thinking through Translation Because of Experience***

Exploring structural differences of thinking through translation between novice and expert translators will make instructors and learners become more aware of the gap in translation competence between learners and the expert in more detailed way. It thus will help them to establish clear and detailed objectives of learning and to design more efficient learning plans and methods as well. Of the

forementioned structural elements of thinking, the thinking process is most difficult to inquire clearly. But the new empirical research findings have revealed it to some extent. Since the mid-1980s, with the research methods of experimental psychology and such modern technologies of computer software as TAPs, Translog, and Camtasia recorder, the “black box” of the translator’s brain has won more and more attention.

Empirical research recently made by Alves and Gonçalves (2007), based on the relevance theory and connectionism theory, and contributes its findings about the cognitive model of translation competence. They find that expert translators display the following cognitive characteristics (ibid):

a) ability at a higher level to coordinate different demands of translation tasks and to integrate procedurally, conceptually and contextually encoded information into a coherent whole;

b) ability at a higher level to integrate the periphery with the central parts of their cognitive systems in an attempt to create a situated perspective for their cognitive functioning;

c) Contextually embedded information and meta-cognition drove their problem-solving and decision-making processes;

d) Reliance on themselves in passing judgment on their own decision-making processes.

Versus, the novice Translators display the following cognitive characteristics (ibid):

a) use of contextualized Insufficiently cues and too strong reliance on the dictionary-based meaning of words instead of contextualized meaning;

b) Failing to bridge the gap between procedurally, conceptually and contextually encoded information;

c) target and Source languages mutually affect one another;

d) at which level Being difficult to determine, a translation unit should be processed in order to generate strong contextual effects and a maximized interpretive resemblance;

e) An insufficient meta-cognition, which is connected only to the structural features of language and text production;

f) Being rather insecure when it comes to decision-making.

These research findings demonstrate that there exist obvious gaps between novice and expert translators in the meta-cognition, thinking material, thinking process, cognitive elements, and non-cognitive elements (especially confidence) of thinking through translation.

In another empirical research, by regulating (cognitive) effort and (contextual) effect relations, Alves (2007) found that expert translators present an

ability to monitor and measure their own thinking and language performance and thereby generate certain meta-representations which can strengthen the existing contextual information. This ability is exactly the function of meta-cognition. Jackobsen (2005) once explored expert translators’ thinking process of knowledge processing with empirical research (TAPS). He found that at the beginning of translating, expert translators could judge the range of knowledge with subject knowledge of ST and then build a semantic field to deal with some vague meanings of words with the subject knowledge. They could also employ various translation resources efficiently and develop multiple translation strategies (ibid: 179).

In addition, Jakobsen (2005) observed that there is a great difference in time allocation between novice and expert translators. Compared with novice translators, expert translators used less time at drafting stage and used more time at revising stage. This indicates that expert translators think much more fluently and profoundly than novice translators. Besides, expert translators used more time at both the beginning stage and the final stage in translation process, because expert translators took a comprehensive view of the translation task and thus considered it more widely and deeply while novice translators considered partly at these stages.

Now a days, the empirical research into translation process has made great achievements. The research subjects involve the cognitive differences between expert and novice translators, translation expertise, translation strategies (Shreve, 2006; Ericsson, 2002), the development of translation competence (Séguinot, 1991), and so on. These empirical researches present certain differences in the thinking through translation and strategy between novice and expert translators. Besides, in the non-cognitive elements, expert translators also hold commendable professional ethics, such as their strong sense of responsibility for the TL readers. all the above research findings about translation expertise can be good guidance for translation didactics.

### Discussing the Result

#### Knowing and Optimizing Thinking Habits and Developing Monitoring Thinking trough Translation

According to the above research of thinking through translation, it is proposed that the main objective of cultivating thinking through translation ability is to optimize thinking habits (including optimized thinking procedural/process and good thinking qualities) and at the same time to develop the ability of monitoring thinking step by step.

Every learner is an individual with independent thinking. In translation instruction, all the learners in a class present both similar and diverse characteristics in thinking through translation. So before instruction, under the guidance of aforementioned research findings of thinking through translation, instructors should firstly investigate learners' cognitive features with some practical methods, such as questionnaire, interview, empirical research, and so on. With certain concrete problems of thinking through translation in mind, the instructor has made a good preparation for his/her design of translation instruction.

Even more important than all the above research findings (the basic characteristics of thinking through translation process, the types of transfer thinking and the structural elements) can be effective guidance for developing thinking through translation ability in translation instruction.

#### ***Characteristics of Thinking through translation Process for Optimizing Thinking Habits***

For knowing and optimizing the habit of thinking through translation is both to optimize the process of thinking through translation and to develop the good qualities of thinking through translation. We have discussed the Main characteristics of the thinking through translation process in the first part of this paper. They involve serial processing and recursive processing (simultaneously), the interaction of neural units, and the bilingual interactive thinking.

Recursive processing of the thinking through translation process and the characteristic of serial processing requires instructors to guide learners to think both procedurally and divergently in translation process. For example, the instructor can teach them (Douglas, 1988):

(a) how to integrate subject knowledge, text types, translation brief, readers' expectation, and possible relationship between ST and TT into a whole as reference for translation decisions, that is, how to coordinate the different demands of the translation tasks at the beginning stage.

(b) how to optimize thinking through translation at the stages of comprehending, transferring and producing, that is to learn the mutually complementary thinking of the three stages, to be aware of prior elements that should be considered in transferring, and to avoid mutual interference of languages, and so on.

The characteristic of recursive processing of the thinking through translation process indicates that instructors should guide learners to form the habit of the repeated and careful thinking about and comparison between ST and TT (in terms of linguistic, structural, and stylistic aspects), SL culture and TL culture, ST readers and intended TT readers in translation process, and then make decisions on the

basis of those thoughtful considerations. With this thinking training, learners can be fully aware of the complexity of thinking through translation and thereby improve the profundity and criticalness of their thinking.

The interaction between the neural units of thinking through translation indicates that translation process, as a comprehensive thinking process, requires the translator to integrate the procedurally-conceptually and contextually-encoded information into a coherent whole in the translation process with flexible employment of various types of thinking through translation. Thinking training in this aspect can help learners to improve the originality of their thinking. In the meanwhile, instructors should try to foresee possible difficulties and problems in translation process according to learners' cognitive characteristics, and thereby guide them to build positive neural interactions and avoid negative ones. For example, the linguistic, cultural and thinking comparison between languages can help students to discern the differences clearly and thereby avoid negative transfer between the two different language structures and thinking styles.

The thinking of translation through bilingual interactive also require us to lay emphasis on a comparative study of languages, cultures, and thinking styles, making the differences clear to learners. With this help, the learners will then build flexible and agile transfer thinking when translating.

#### ***Guidance for Developing Monitoring Thinking***

The characteristics of the thinking through translation process and its clear self-conception, structure and types can guide learners to build metacognition of thinking through translation and strengthen their ability of monitoring thinking. It thus has become an important foundation of improving thinking through translation ability. The eight types of transfer thinking indicate that we cannot only emphasize "equivalence" in translation instruction. Instead, we should guide learners to be aware of those various relations of ST and TT and help them to put their theoretical awareness into translation practice with some selected translation exercises involving these types of transfer thinking. So with these translation exercises, learners' transfer ability between two languages will get improved effectively.

Additionally, the structure of thinking through translation and the structural differences between novice and expert translators suggest that we should help learners know clearly about both the structural elements of their thinking through translation and a certain gap in thinking through translation between them and expert translators. With a self-conception of their own thinking through translation and expert thinking through translation as well, they can try to

find effective training methods and objectives of their thinking through translation with the instructor's guidance.

Gideon (1991) In respect of translation instruction, argued that translation didactics constitutes a subarea of translation studies that employs the findings of theoretical and descriptive researches to develop teaching principles and methods. So in developing thinking through translation, instructors and scholars of translation teaching should consider how to turn some relevant theoretical and descriptive research findings into effective teaching principles and methodologies of thinking through translation training, which can help optimize learners' thinking process.

For example, the functionalism in translation theory emphasizes translation scopes and the functions of the target text. The documentary translation and instrumental translation connect translation scopes and text functions with text types and translation strategies. These theoretical ideas have very good implications for thinking through translation process. With these theoretical inspirations, instructors can guide students to think over how to think procedurally and interactively about the translation of different text types.

### Conclusion

Theory of Each translation is only a generalization of a certain aspect or layer of translation and has its own special range of application. So we may integrate different layers of theoretical ideas into coherent principles or methods of thinking through translation about different types of translation. It is very useful for learners to adjust their thinking process and methods to different cases of translation. And we believe that learners' thinking ability will be optimized and developed step by step with these theoretically-sensible thinking training and the selected translation exercises. Of course, at each stage of training, learners must do exercises of real translation material with real translation brief. And translation exercises can be assigned partly as team works and partly as individual works. In addition, instructors should arrange certain time for the class to discuss the thinking through translation process in dealing with those exercises in order for a wisdom-pooling purpose. Of course, the discussion can also proceed with web-blog and email, which has become highly economic and effective channels of communication today.

Helping cognitive psychology, cognitive linguistics, psychology of thinking, and developmental psychology of thinking, this paper developed the research findings of the basic characteristics of thinking through translation

process, the types of transfer thinking, as well as the structure of thinking through translation. It also puts forward methodological suggestions on translation instruction under the guidance of these research findings. Of course, these research findings of thinking through translation and the corresponding teaching suggestions must be applied to detailed teaching materials and teaching methods by each instructor according to the specific situation of his or her class. Instructors have the right to create effective teaching methods for their own lessons. For example, the psychological methods of thinking training can be applied to thinking through translation training; and the think-aloud research method can be put into pedagogical use. No matter what methods we use in translation instruction, we should follow these basic principles:

(a) Helping learners form a clear self-conception (metacognition) of thinking through translation and constantly optimize their own thinking habit or process according to that self-conception.

(b) Helping learners solve real translation problems with the optimized habits of their thinking of translation.

### References

1. Alves, F. & Gonçalves J. L. 2007. "Modelling Translator's Competence: Relevance and Expertise under Scrutiny". In Y. Gambier, M Shlesinger, and R. Stolze (Eds.). *Translation Studies: Doubts and Directions*, Amsterdam and Philadelphia: John Benjamins, 41-55.
2. Alves, F. 2007. "Cognitive Effort and Contextual Effect in Translation: A Relevance-Theoretical Approach". In *Journal of Translation Studies*, 10:1, 57-76.
3. Bell, R.T. 1991. *Translation and Translating: Theory and Practice*. London: Longman.
4. Biber, Douglas. 1988. *Variation across speech and writing*. New York: Cambridge University Press.
5. Buchweitz A. & F. Alves. 2006. "Cognitive Adaptation in Translation: an interface between language direction, time, and recursiveness in target text production". In *Letras de Hoje*, 41:2, 241-272.
6. Chesterman, Andrew. 1998. "Communication strategies, learning strategies and translation strategies". *Malmkjær* 1998: 135-143.
7. Colina, S. 2003. *Translation Teaching: From Research to the Classroom: A Handbook for Teachers*. Boston Burr Ridge: McGraw- Hill.
8. Danks, J. H. & J. Griffin. 1997. "Reading and Translation: A Psycholinguistic Perspective". In J. H. Danks, G. M. Shreve, S. B. Fountain and M. K. Mcbeath (Eds.). *Cognitive Process in*

- Translation and Interpreting. Thousand Oaks: Sage Publications, 161-175.
9. Dimitrova, B. D. 2005. Expertise and Explication in Translation Process. Amsterdam & Philadelphia: John Benjamins Publishing Company.
  10. Ericsson, K. A. 2002. "Expertise in Interpreting: An Expert-Performance Perspective". In *Interpreting*, 187-220.
  11. Floyd, P. and Patricia L. Carrell. 1987. "Effects on ESL reading of teaching cultural content schemata". *Language learning* 37:1. 89-108.
  12. Gommlich, K. 1997. "Can Translators Learn Two Representational Perspectives?" In J. H. Danks, G. M. Shreve, S. B. Fountain and M. K. Mcbeath (Eds.). *Cognitive Process in Translation and Interpreting*. Thousand Oaks: Sage Publications, 57-76.
  13. Jakobsen, A. 2005. "Investigating Expert Translators' Processing Knowledge". In H.V. Dam, J. Engberg and H. Gerzymisch-Arbogast (Eds.). *Knowledge Systems and Translation*. Hague: Mouton de Gruyter, 173-189.
  14. Kiraly, A. C. 1997. "Think-Aloud Protocols and the Construction of a Professional Translator Self-Concept". In J. H. Danks, G. M. Shreve, S. B. Fountain and M. K. Mcbeath (Eds.). *Cognitive Process in Translation and Interpreting*. Thousand Oaks, London, and New Delhi: Sage Publications, 137-160.
  15. Kussmaul, P. 1995. *Training the Translator*. Amsterdam & Philadelphia: John Benjamins.
  16. Kussmaul, P. 2000. "Types of Creative Translating". In A. Chesterman, N. G. S. Salvador, Y. Gambier (Eds.). *Translation in Context*. Amsterdam & Philadelphia: John Benjamins, 117-126.
  17. Liu, S. L. 2007. *Psychology of Translation*. Wuhan: Wuhan University Press.
  18. Lörscher, W. (1997). Translation as process. An empirical investigation into the translation process of professionals, bilinguals, and foreign language learners.
  19. Seguinot, C. 1991. "A Study of Student Translation Strategies". In S. Tirkkonen-Condit (Ed.). *Empirical Research in Translation and Intercultural Studies*. Tübingen: Narr, 79-88.
  20. Shreve, G. & G. S. Koby. 2003. "What's in the 'Black Box'?" *Cognitive Science and Translation Studies*". In J. H. Danks, G. M. Shreve, S. B. Fountain and M. K. Mcbeath (Eds.). *Cognitive Process in Translation and Interpreting*. Thousand Oaks: Sage Publications, xi-xviii.
  21. Shreve, G. 2006. "The Deliberate Practice: Translation and Expertise". In *Journal of Translation Studies*, 9:1, 27-42.
  22. Tirkkonen-Condit, Sonja and Johanna Laukkanen. 1996. "Evaluations: A key towards understanding the affective dimension of translational decisions". *Meta* 41:1. 45-59.
  23. Tirkkonen-Condit, Sonja. 1997. "Who verbalises what: A linguistic analysis of TAP texts". *Target* 9:1. 69-84.
  24. Toury, G. (1995). *Descriptive translation studies and beyond*. Amsterdam.
  25. Toury, Gideon. 1986. "Monitoring discourse transfer: A test-case for a developmental model of translation". *House and Blum-Kulka* 1986: 79-94.
  26. Toury, Gideon. 1988. "The coupled pair of 'solution + problem' in Translation Studies".
  27. Toury, Gideon. 1991. "Experimentation in Translation Studies: Achievements, prospects and some pitfalls". *Tirkkonen-Condit* 1991: 45-66.

11/22/2020