

Making Connections Through Knowledge Nodes in Translator Training: On a Computer-Assisted Pedagogical Approach to Literary Translation

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ABSTRACT

This study defines translator training as a pedagogical scheme to help learners build up a knowledge network that should sustain their professional competence. It explores specifically how a computer-assisted mode of training may contribute to systemizing such a scheme with special reference to literary translation. The tool used for such training is Textwells, an online translation teaching and learning platform that weaves textual and translation-related concepts, phenomena, and methods as “knowledge nodes” into a network to support teaching and learning in different settings. As such, different from the traditional way of arranging a literary translation course according to the subgenres of literature, this approach, facilitated by the online platform, organizes the teaching contents along a series of knowledge nodes that are deemed fundamental to the production of a literary target text. In particular, this paper gives a detailed report about the course design and teaching procedures, using the rhetoric component as an illustrating case.

KEYWORDS

Computer-Assisted Translator Training, Course Design, Knowledge Network, Online Platform, Textwells

1. INTRODUCTION

Translator training is by definition a pedagogical scheme to help learners build up a knowledge network that should sustain their translation competence. According to the well-established PACTE Translation Competence Model, bilingual sub-competence, strategic sub-competence and instrumental sub-competence are predominantly procedural knowledge among the five sub-competences, whereas the extra-linguistic sub-competence and knowledge about translation sub-competence are predominantly declarative knowledge (PACTE, 2003). As declarative knowledge is knowledge about the “what” and procedural knowledge is knowledge about the “how”, it is commonly believed that procedural knowledge is the main focus of professional training. Among the three kinds of procedural knowledge in the PACTE Model, instrumental sub-competence concerns

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the ability to make use of resources and tools, for example computer-aided translation tools. Thus, it usually requires specialized training and can hardly be integrated into the cultivation of other competences. In this regard, the core of the translation knowledge network that translator training aims to build in learners boils down to a bipartite combination, i.e. language-related knowledge and knowledge to make accountable decisions in translation.

For translator training with a view to building up such a translation knowledge network to operate effectively, the setup should incorporate two primary components: one is a series of “knowledge nodes” identified to designate key elements in text production in general and in text translation in particular; the other is a computer technology enabled mechanism to connect and weave these knowledge nodes into a network. The series of knowledge nodes, to be sure, has to remain open-ended and the network dynamic as a result, so as to reflect and capture the nuances of text production and the advancement of our understanding of language and translation. So, for the knowledge network to be scientifically reliable and practically feasible, identification of the knowledge nodes and design of the network have to be based on both theory and practice and facilitated by computer technology. Apart from displaying connections among knowledge nodes in a clearer and more systematic manner, computers have advantages in storage of large data and instant information retrieval. Hence, a computer-facilitated translation knowledge network has great potential to be applied to the training of translators. In this paper, we will illustrate a computer-assisted knowledge-node-based approach to translator training with special reference to a literary translation course.

2. COMPUTER-ASSISTED TRANSLATION TEACHING AND LEARNING

Against the backdrop of digitization and informatization, various computer-aided pedagogical approaches have emerged. MOOCs (Massive Open Online Courses), SPOCs (Small Private Online Courses), corpora, mobile apps, and online platforms are all currently applied in translation teaching. According to what computers exactly aid with such approaches, the functions of computer technology in translation teaching and learning can be roughly categorized into three kinds.¹

In the first kind, computers mainly provide an alternative medium where teaching and learning take place. In comparison to classroom teaching, this approach is theoretically free from the restrictions of time and space in conducting learning. Collection and organization of teaching content, however, still relies on individual teachers. MOOCs, SPOCs and the use of social networking software/applications belong to this category (see for example Blasco, 2016; Kim, 2017; Wang et al., 2017; Zhang & Tao, 2017). The second kind involves the application of corpora and all kinds of online learning recourses/mobile apps. This approach, taking advantage of computer technologies in data retrieval and sorting, excels in providing learners with abundant and targeted learning materials (Zanettin et al., 2003; Olohan, 2004; Wang & Qin, 2015; Zhu & Chen, 2015; Hu, 2016). Hence, it is highly effective in teaching specific language usage and linguistic features (See e.g. Tian, 2020). The third kind has the most intense involvement of computers in its operation. Apart from constructing online platforms and employing large authentic data, this approach features a knowledge management system based on domain-specific ontology for translation and substantiated with annotated parallel texts and exercises with in-depth explanations (Mu et al., 2018).

In recent years, a couple of Chinese-English translation teaching and learning online platforms were built and reported to be effective in helping learners acquire a deeper understanding of the fundamental knowledge about language, text, writing and translation and formulate more efficient translation learning strategies (Zhu & Yip, 2010; Zhu & Wang, 2011; Mu & Zhu, 2013; Zhu & Mu, 2013; Wang, 2015; Tian et al., 2018). Mu & Yang’s (2020) teaching experiment suggests that such a knowledge-network-based training model has contributed to learner’s better performance in translation practice, and positive feedback from the learners is also reported therein.

3. LITERARY TRANSLATION PEDAGOGY

Literary translation has long been taken as the core of translation studies (Bassnett, 2011, 2013) as it is considered “the field where innovative theories and practices emerge” (Venuti, 1995, p. 41) and is thus further believed to be a good model for translation theory and practice (Tymoczko, 2014). Bush (1998) rightly pointed out that learning to translate literary works is “about writing creatively and imaginatively, about being sensitive readers and writers” (p. 3). However, as the commercial demand for literary translation is largely overshadowed by that for non-literary translation, the role of literary translation modules in a translation degree programme has aroused heated discussions (Lung & Yan, 2004). Despite the arguments, it is a common practice in Chinese universities to include literary translation in the curriculum. Given the fact that literary texts normally incorporate a wide range of text types and training in literary translation involves keen observation of how language works (Boase-Beier, 1998, p. 41), it is justifiable that literary translation be regarded as a core mode of training for translation majors. In China, the syllabus of a literary translation course is usually arranged according to the subgenres of literature, namely poem, prose, novel, drama, etc. (see Wang, 2007; Hu & Li, 2009; Zhang, 2011; Zhao, 2018; for example). Efficient as it might be, such a division runs the risk of cutting off the linguistic and aesthetic connections across different literary genres as they are all in essence about meticulous and oftentimes creative use of the target language in representing the delicacy of the source text. More importantly, neglect of the knowledge network in organizing teaching activities makes it difficult for learners to obtain a whole picture of the subject. And it is this whole picture that will guide the translator in paying focused attention to textual details without feeling lost in the midst.

Realizing the importance of style in literary translation, Ma (2018) proposed a stylistics-based pedagogical approach to literary translation. Inspired by Bernardini’s application of Widdowson’s distinction between training and education in translation pedagogy, Ma (*ibid.*, p. 410) construed literary translation as education to cultivate learner autonomy, i.e., to give learners instruments for gaining knowledge, rather than training that solely aims at imparting knowledge to learners (Bernardini, 2004, pp. 19–20). In this connection, Ma (2018) suggested that her proposed pedagogical approach to literary translation “foster an analytical ability transferable to specialized translation training in general” (p. 410). Yet since a literary translation course cannot be devoid of practical hands-on training, this binary view of education vs. training may urge one to question further, that is, whether there is a mode of training that will expose learners to ways of acquiring knowledge and skills of literary translation for themselves, apart from imparting the knowledge and skills as such.

4. A COMPUTER-ASSISTED KNOWLEDGE-NODE-BASED PEDAGOGICAL APPROACH TO LITERARY TRANSLATION

This study, therefore, investigates the feasibility of an ontological knowledge-network-based, knowledge-node-connected pedagogical approach to literary translation as facilitated by a computer-aided online system, with a view to exploring the possibility of combining knowledge transfer and skill training with the cultivation of learning autonomy in the teaching of literary translation.

4.1. About the Platform

The online system we used is *Textwells*, a translation teaching and learning platform featuring a unique network of conceptual knowledge nodes related to text production in translation. To facilitate translation teaching and learning in a systematic and sustainable manner with due pedagogical rigour, each knowledge node is specifically defined and the network is substantiated with a corpus of authentic texts and a database of exercises, informatively and critically annotated and conceptually interrelated by following the system of knowledge nodes. The platform also provides a pool of “topical boards” explaining in greater detail various grammatical, semantic, textual, and translational phenomena. With

all its modules computer-organized, the platform can also help teachers track and manage student users' learning behaviours. (See e.g. Mu et al., 2018; Mu & Yang, 2020).

Informed by theories in stylistics, rhetoric, text linguistics and translation studies, knowledge nodes on *Textwells* are identified under six categories to reflect translation-related issues and phenomena from six aspects, viz. lexical, syntactic, textual, informational, rhetorical, and intertextual. Under the category of Textual Operation, for example, there are knowledge nodes such as “Left Branching-Right Branching Alteration”, “View Point Alteration”, and “Textual Progression Alteration”; under Information Management, there are “Information Merging”, “Information Distribution”, “Focus-Topic Alteration”, etc. It is worth noting that these knowledge nodes are meant to be language-independent although the empirical evidence they are based on, for the time being, is confined to English-Chinese and Chinese-English translation. This is why the system of knowledge nodes has to be kept open-ended. If new translation phenomena which are not yet covered are found to be pedagogically interesting, relevant knowledge nodes can be incorporated into the system as appropriate.

As mentioned above, all the learning materials on *Textwells* including texts and exercises are annotated with reasonably detailed explanations and connected by knowledge nodes. Users may access the text materials in two ways, either by picking directly from the text database's Table of Contents or by clicking on the chosen knowledge node to gather all the items of data annotated under the same knowledge node. Such study activities are meant to help learners cultivate awareness of specific translation phenomena, with annotated examples from published text pairs serving as illustrations to inform their own practice. And related exercises are there to help consolidate the knowledge learned, as well as assisting with learning outcome evaluation. Success rates of exercises, time spent, and frequency of online learning are all automatically recorded and can be displayed instantly on the platform for self-evaluation and for teachers to make assessment. Learners may pose their questions and comments either in the Q&A module or directly in the designated box at the bottom of the webpage the message refers to, to seek feedback from the teacher or responses from fellow learners.

4.2. About the Course

The course of literary translation under report and taught by the first author is an elective for MTI (Master of Translation and Interpreting) students with Chinese and English as their working language pair. MTI is a master's programme aiming to train professional translators and interpreters. Thus, the curriculum is practice-oriented. This course includes a fundamental stylistic component involving linguistic analysis of literary texts in translation and for translation, with a view to: (a) introducing the most essential concepts, principles and methods in literary translation and (b) exploring their applicability to literary translation criticism and practice. Upon completing the course, students are expected: (a) to be equipped with adequate knowledge for analyzing literary translation critically; and (b) to cope with problems by adopting appropriate strategies in literary translation practice.

The class meets for two teaching hours a week, 16 weeks in total. The teaching format includes classroom lectures, discussions, and students' presentations, with the online translation teaching and learning platform *Textwells* providing major resources for preview, in- and off-class discussions, and after-class exercises. Two textbooks, *Advanced Literary Translation* (Hu & Li, 2009) and *Translation Appreciation and Criticism* (Li, 2016), and self-collected materials serve as supplementary materials to extend the coverage of the corpora.

The assessment covers the following three activities: (a) regular day-to-day performance, weighing 30% of the total score. The score for this part is automatically generated by the platform reflecting learners' real-time achievements in self-learning and exercises. (b) group presentation, weighing 20% of the total score. The class is divided into eight groups of three students, and each group is required to give a 20-minute in-class presentation towards the end of the semester, discussing selected phenomena designated by one or a group of related knowledge node(s) with relevant text pair(s) analyzed as illustrations. (c) translation project, weighing 50% of the total score. This individual task

involves translation of a Chinese literary text into English. A commentary on the translation is also required to describe problems encountered and solutions adopted in its production.

4.3. Course Design and Teaching Procedure

Following the six categories of knowledge nodes on *Textwells*, the main part of the course is composed of twelve teaching units plus an introduction and a round-up session. Table 1 shows the detailed course plan.

Table 1. Course plan

Week	Topic	Main Contents
1	Introduction	briefing on the course and the platform; characteristics of literary translation; criteria of literary translation
2	Lexical concerns: content words	noun number, pronouns; frame, characterization
3	Lexical concerns: function words, word class alteration	articles, prepositions; nominalization, preposition-verb transfer
4	Syntactic concerns: sentence components	sentence components alteration, merging, distribution
5	Syntactic concerns: form	foregrounding, deviation, parallelism
6	Informational concerns: information	information addition, information omission
7	Informational concerns: information flow	topic & focus, sequence, suspense
8	Textual concerns: cohesion and coherence	left branching, right branching; textual progression
9	Textual concerns: stylistics	viewpoint, narration, speech & thought presentation
10	Rhetorical concerns: prosody	alliteration, rhyme, consonance, onomatopoeia, reduplication
11	Rhetorical concerns: figure of speech	metaphor, pun, parody, euphemism, humour
12	Intertextual concerns: culture	background knowledge, allusion
13	Intertextual concerns: mental association	image, schemata, context
14	Group presentations	four groups
15	Group presentations	four groups
16	Round-up	review, Q&A

Each teaching unit consists of three phases assisted by relevant modules on *Textwells*. Before class, students are assigned the topic of the week and related knowledge nodes for preview. Accessing data from the Knowledge Node module, students are urged to familiarize themselves with the characterizations of the knowledge nodes. In addition, the Topical Board module provides more comprehensive explanations about varied linguistic and textual phenomena, such as the three kinds of reference for a more cohesive text: demonstrative reference, comparative reference, and personal

reference, and the two ways to organize information of events: sequential narration and flashback. Apart from these materials on the platform, students are also encouraged to make use of other self-collected data, printed or digital, to explore further into topics of interest. During the in-class session, under the guidance of the instructor, students conduct critical analyses of specific literary text pairs in relation to the knowledge nodes in question. Parallel texts are selected from the *Textwells* corpus and presented on the platform for discussion, supplemented with the two textbooks and other materials collected by the instructor. After class, students do exercises on the platform in order to consolidate what is learned in class and have their achievements assessed. As noted above, all the topical boards, texts, and exercises on *Textwells* are labelled and connected following the terminology of the knowledge nodes to enable concerted learning efforts. Detailed annotations with descriptive and explanatory analyses and supporting exemplification function as scaffolding for such self-learning. Critical questions and reflections are encouraged as relevant function buttons can be found at the bottom of each webpage for follow-up communications. Moreover, the Q&A module enables all the users to post queries and comments on the platform and have interactions with peers and course instructors.

4.4. Demonstration: Rhetoric in Literary Translation

Rhetorical ingenuity is a distinctive feature of literary texts, and by extension, it should be regarded as one of the focal topics in the teaching of literary translation. In this section, we will specifically report on our teaching of rhetorical devices in relation to literary translation, to illustrate how a literary translation course might be designed and delivered in a computer-aided teaching environment.

Following the pedagogical philosophy of knowledge-network-based learning in literary translation training (in this particular case with a focus on rhetoric), all the components of the course including concept learning, text analyzing, and exercise attempting are linked and integrated by knowledge nodes key to the topic. Figure 1 illustrates the overall design for teaching rhetoric in literary translation.

As is shown in Figure 1, all the in-class and off-class activities are centred on knowledge nodes key to the topic of rhetoric in literary translation. Topical boards concerning concepts and knowledge basic to rhetoric are used as a lead-in to the topic. They also function as a ready information bank for easy reference to scaffold the whole learning process. Annotated parallel texts provide necessary learning materials to substantiate the “declarative” conceptual knowledge with “procedural” know-how, in both in-class discussions and after-class self-learning. Guidance implied in the annotations of specific rhetorical devices in texts is meant to cultivate in learners a stylistic awareness that employment of rhetorical devices is not simply a decorative operation of embellishment but a textual design to create certain effects, although perception of such effects may vary from reader to reader and from situation to situation. The exercises, designed with specific training targets and sorted by knowledge nodes, help learners consolidate their learning and assess its efficiency. The overall design represents an integrated system underpinned by the network of knowledge nodes.

4.4.1. Before-Class Self-Learning

In line with the idea of “flipped learning” (Fulton, 2012; Goodwin & Miller, 2013; Bergmann & Sams, 2014; O’Flaherty & Phillips, 2015), students are assigned three preview tasks to familiarize themselves with the topic:

1. To learn via the Knowledge Node module on *Textwells* the definitions and examples of the following translational operations: Rhetorical Device Retention, Rhetorical Device Addition, Rhetorical Device Omission, and Rhetorical Device Alteration;
2. To learn via the Topical Board module on *Textwells* the detailed explanations and illustrations of specific rhetorical devices including simile, metaphor, personification, repetition, prosody, rhythm, euphemism, etc.;
3. To look for the rhetorical devices adopted in both the Chinese original prose *Moonlight over the Lotus Pond* and its English version.²

Figure 1. Design for teaching rhetoric in literary translation

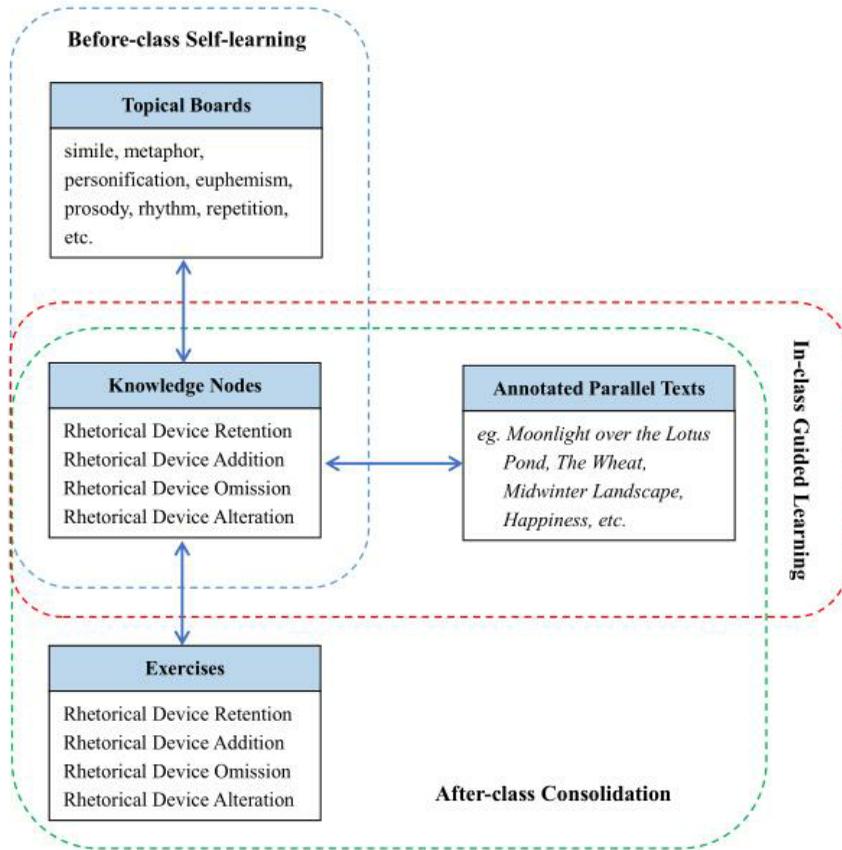


Figure 2 and Figure 3 are respectively snapshots of a knowledge node—Rhetorical Device Retention and a topical board—Chinese Prosody, both from *Textwells*.³

By completing the preview tasks, the students should have gained preliminary knowledge about these commonly used rhetorical devices and their implications for literary translation, and be prepared for class discussions as well as for self-initiated explorations for other devices discussed on *Textwells* and in the literature in general.

4.4.2. In-Class Guided Learning

The in-class lecture begins with a brief check on the students' understanding of the phenomena and operations designated by the knowledge nodes and described in the topical boards assigned. They are encouraged to raise questions if there are any and share their thoughts. Then the class proceeds to critical analyses and discussions of the Chinese-English parallel texts of *Moonlight over the Lotus Pond*. *Textwells* currently identifies in the sample text pair eight examples of the kind with initial annotations. They are used as stepping stones leading to in-class elaboration and exemplification with regard to translation methods used and textual effects perceived. Moreover, as students' assignments and presentations show, in such an instructional scaffolding approach, learners may start to develop informed critical discernment in their study of other text pairs and their own translation practice.

Figure 4 shows the display of parallel texts on the platform, and Figure 5 is an illustration of annotations of the texts.

The annotation in Figure 5 reads in English to this effect:

Figure 2. Knowledge node: Rhetorical device retention

The screenshot shows a knowledge node titled "修辞格保留(RhetoricalDeviceRetention)". It includes a definition in Chinese, a list of common combinations, and associated annotations. Red boxes highlight several interactive features: "definition", "link to annotation", "link to full text", "examples", "comment", "favourite", "query", and "full screen". The interface also shows social interaction buttons like "0赞", "0评论", and "收藏".

Figure 3. Topical board: Chinese prosody

The screenshot shows a topical board titled "中文韵律 Chinese Prosody". It features a "延伸专题板" (Extended Topical Board) for "英语韵律 English Prosody" and a list of "关联知识点" (Related Knowledge Nodes) including "修辞格省略 (RhetoricalDeviceOmission)", "修辞格添加 (RhetoricalDeviceAddition)", "修辞格保留 (RhetoricalDeviceRetention)", and "修辞格变换 (RhetoricalDeviceAlteration)". Red boxes highlight "related topical board", "related knowledge nodes", and "explanation". The interface includes social interaction buttons like "0赞", "0评论", "收藏", "提问", and "query".

Figure 4. Parallel texts of *Moonlight over the Lotus Pond*

The screenshot shows a digital interface for comparing English and Chinese texts. At the top, there are tabs for '知识类别' (Knowledge Category) with sub-tabs for '词级角度 (3)', '句级角度 (5)', '信息角度', '篇章角度', '修辞角度', and '互文联想'. Below these are '中英显示' (Bilingual Display) options for '中英', '英文', and '中文'. The '修辞角度' tab is selected, and a red box labeled 'knowledge category: rhetorical' points to it. The main area is split into two columns: 'English text' on the left and 'Chinese text' on the right. The English text is a translation of Zhu Ziqing's 'Moonlight Over the Lotus Pond'. The Chinese text is the original. A red box labeled 'annotation mark' points to a red square symbol in the Chinese text. Another red box labeled 'query' points to a search icon at the bottom right of the interface.

The original text, by adopting reduplicated words such as ‘ququ zhezhe’, ‘tingting’ and ‘tiantian’, produces an effect of repetition and enhances the rhythm of the text. By comparison, the translated text, by using ‘winding/silken/dancing’ together with the non-predicate structure led by ‘reaching’ and the rhyming of ‘surface/grace’, tries to achieve a similar rhythm-enhancing effect.

Using reduplicated words to achieve a particular sound effect is a prominent feature of the Chinese source text (see Zhu, 2008, pp. 289-312 for a specific discussion), in which twenty-seven similar expressions can be found. How to render such a major rhetorical feature of the source text can thus be an interesting challenge for student translators. Analyzing and discussing the example shown in Figure 5 as well as other annotated ones in the text pair may sensitize students to differences in prosody between Chinese and English language in general and between the two texts in particular. And as a result, students may become better aware as to how methodological flexibility and ingenuity may bring about matching effects in translation or create certain effects unique to a target text as a work of literature in its own right.

Apart from prosodic features, the source text is found to employ many other rhetorical devices including parallelism, hyperbole, personification, simile, metaphor, etc. The students are asked to work in groups to share their findings and discuss losses and gains in their own translations (if any) as well as in the *Textwells* one.

4.4.3. After-Class Consolidation

To consolidate what is learned in class, students are assigned two after-class tasks:

Figure 5. Annotation of parallel text segments

1. **On-platform individual work:** Finish at least fifteen exercises of rhetorical translation on *Textwells*;
2. **Off-platform group work:** Make a comparative analysis of three other English versions of *Moonlight over the Lotus Pond* in handling rhetorical devices. If interested, they can produce their own translations of the text for comparison.⁴

Figure 6 illustrates how exercises and explanations are presented on *Textwells*. For each exercise, a specific requirement is given in the instruction, to ensure that the training is always targeted. In this exercise shown in the figure, the requirement is to choose the one option which adopts reduplication in Chinese to re-present the plural forms of *groves* and *rows* in the English sentence. Once the learner's answer is submitted, the platform will automatically show the appropriate answer for his/her reference followed by detailed explanation of why it is appropriate while the others are not albeit they are not necessarily "wrong". The explanation in Figure 6 reads in English to this effect:

This exercise concerns the translation method of presenting plural forms of English words by employing reduplicated words in Chinese. Option A adopts the adjective "maomi" (lush) and the numeral-classifier compound "yi lian chuan" (a row of) to present the plural number respectively conveyed by the 'groves' and 'rows'. Option C uses the collective noun "shulin" (woods) to translate the 'groves'. Option D describes the 'groves' as "nongmi feichang" (extraordinarily dense) in its predicate part to suggest the plurality. In comparison, Option B is the only one that meets the requirement of the exercise. By adding the rhetorical device of reduplication, the plural number conveyed in the English source text is clearly presented in the Chinese target text. The answer is therefore B.

Figure 6. Exercise with detailed explanation of the choices

The screenshot shows a user interface for a language learning exercise. At the top, there are several filter tabs: '知识类别' (Knowledge Category) with sub-tabs for '全部', '词级角度', '句级角度', '信息角度', '篇章角度', '修辞角度', and '互文联想'; '知识点' (Knowledge Node) with sub-tabs for '全部', '修辞格交换', '修辞格保留', '修辞格添加', and '修辞格简省'; '题目类别' (Exercise Type) with sub-tabs for '全部', '选择题', and '填空题'; and '语言方向' (Language & Directionality) with sub-tabs for '全部', '纯英文', '纯中文', '英译中', and '中译英'. Below these filters, it says '当日已进行 30 组训练'. The main exercise question is: '请问哪个选项将英文句子中的名词复数形式groves和rows译成了汉语中的叠词形式?'. The original text is: '原文：They drove in a black limousine, past groves of birch trees and endless rows of identical new building'. The Chinese translation is: '译文：_____'. There are four options: A: '他们坐着一辆黑色轿车，经过茂密的白桦树和一望无尽的一连串一模一样的新建筑。'; B: '他们乘坐一辆黑色轿车，经过一丛丛的白桦树，一模一样的新住宅也一排排延伸开来，无穷无尽。'; C: '他们乘坐一辆黑色轿车，经过白桦树林和望不到边的一排彼此相像的新住宅。'; D: '他们乘坐一辆黑色轿车，经过的白桦树浓密非常，一模一样的新住宅又连成一片，无穷无尽。'. The correct answer is B. Below the options is the '参考答案' (Answer for reference) and a '详解' (Detailed explanation) in Chinese. Red boxes and arrows point to various elements: 'knowledge category', 'knowledge node', 'exercise type', 'language & directionality', 'exercise instruction', 'exercise text', 'answer for reference', and 'explanation'.

Although there is no inflexion in Chinese to show the plural form of nouns, the above exercise is designed to demonstrate that some “Chinese specific” methods may help achieve matching effects in translation. Those translations that are deemed “inappropriate”, to be sure, are not necessarily “wrong” but simply do not meet the requirement, and are explained as such to help students realize that there are usually more than one way to tackle a particular problem and a competent translator is supposed to remain sensitive to the nuances of “synonymous” expressions and the subtlety of their differences, and thus capable of making contextually accountable choices.

It is worth noting that all the exercises that are not answered correctly are simultaneously recorded by the platform so the learners can redo them at any time or remove any from the list. In addition, all the learning records are stored and analyzed automatically. From the Data Analysis module, learners can easily find the scores and success rates of their attempts as well as the overall time spent on each category. Teachers have access to the learning records of all the students in their respective classes, and the assessments can therefore be more objective and statistically evidenced.

As shown in Figures 2, 3, 4 and 5 above, to enhance communication and interaction among all the participants including both learners and teachers, at the bottom of the webpage there are function buttons or a box for learners to enter and submit their queries or comments about the content of the page. For other more general questions, they can always go to the Q&A module and seek help from the course instructor there. As such, any of the learners’ concerns unaddressed in the platform data, especially those about literature and language in general, can be resolved timely.

5. DISCUSSION AND CONCLUSION

A computer-assisted knowledge-network-based pedagogical approach to literary translation as is presented and demonstrated in this paper represents an experimental approach to optimizing the application of IT technology to translator training, and in our case with a focus on rhetorical operations in literary translation, which is generally believed to be a highly artistic, creative, and

perhaps idiosyncratic undertaking. As a training scheme, it is designed with a view to promoting learner autonomy and enhancing translation competence in a regulated and accountable manner.

Compared with other literary translation teaching modes, our approach organizes the teaching along a series of knowledge nodes that are deemed fundamental to the production of a literary target text, with the aim to help learners build up a knowledge network that should sustain their professional competence. Facilitated by *Textwells*, the learning materials for both in-class discussions and after-class self-learning are systematically integrated and presented, combining “declarative” conceptual knowledge with “procedural” know-how. The teacher’s instruction and the guidance implied in the annotations on the platform are meant to cultivate in learners both awareness of specific textual and translation phenomena and adequate competence to make their own decisions in practice accountable in terms of knowing what is being done, how it is done and why it is done in such and such a way. Meanwhile, by exposing to informative knowledge and viable skills in literary translation as well as ways of acquiring such knowledge and skills, learners are eventually placed in the position to take the initiative in their learning with trained autonomy.

The implementation of the approach, as reported in this study, is facilitated by *Textwells*, a knowledge-network-based online platform for translation teaching and learning. Its unique knowledge network is established upon both theory-informed knowledge and empirical data, covering core knowledge nodes related to translation. Incorporating a wide range of texts of different genres and text types, *Textwells* is found to be technically supportive to teaching and learning of various translation courses although tailored adjustments and emphases are necessary in view of the needs of specific subjects and course types. As to the design of the platform itself, it is worth considering to include a function that may give course instructors more initiative in, and more specific guidelines for, selecting knowledge nodes and other materials provided by the platform to teach, as well as supplying additional knowledge nodes and teaching materials from their own collections to cater for the needs of courses of different subjects and classes at different levels. Further to that, with the platform being used more extensively in actual teaching, the developer may also consider incorporating in due course more modules and knowledge nodes into the system’s regular pool to increase its responsiveness to the needs of specific courses, for example, literary translation, business translation, media translation, and translation of political writings. As *Textwells* is meant to be a collaborative project, such expansion might invite participation and collaboration of interested parties on a global basis; for, being based on translation-related ontological knowledge network, it should have great potential for application to a wider range of courses and programmes in translator training and language study, promising a more convenient, reliable and efficient learning environment for larger groups of users.

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REFERENCES

- Bassnett, S. (2011). *Reflections on translation*. Multilingual Matters. doi:10.21832/9781847694102
- Bassnett, S. (2013). *Translation studies* (4th ed.). Routledge. doi:10.4324/9780203488232
- Bergmann, J., & Sams, A. (2014). *Flipped learning: Gateway to student engagement*. International Society for Technology in Education.
- Bernardini, S. (2004). The theory behind the practice. In K. Malmkjær (Ed.), *Translation in undergraduate degree programmes* (pp. 17–30). John Benjamins. doi:10.1075/btl.59.03ber
- Blasco, D. (2016). Student's attitudes toward integrating mobile technology into translation activities. *International Journal on Integrating Technology in Education*, 5(1), 1–11. doi:10.5121/ijite.2016.5101
- Boase-Beier, J. (1998). Can you train literary translators? In K. Malmkjær (Ed.), *Translation in undergraduate degree programmes* (pp. 33–42). John Benjamins.
- Bush, P. (1998). Introduction. In P. Bush & K. Malmkjær (Eds.), *Rimbaud's rainbow: Literary translation in higher education* (pp. 1–8). John Benjamins. doi:10.1075/btl.21.01bus
- Fulton, K. (2012). Upside down and inside out: Flip your classroom to improve student learning. *Learning and Leading with Technology*, 39(8), 12–17.
- Goodwin, B., & Miller, K. (2013). Evidence on flipped classrooms is still coming in. *Educational Leadership*, 70(6), 78–80.
- Hu, K. (2016). *Introducing corpus-based translation studies*. Springer/Shanghai Jiao Tong University Press. doi:10.1007/978-3-662-48218-6
- Hu, X., & Li, L. (2009). *Advanced literary translation*. Foreign Language Teaching and Research Press.
- Kim, D. (2017). Flipped interpreting classroom: Flipping approaches, student perceptions and design considerations. *The Interpreter and Translator Trainer*, 11(1), 38–55. doi:10.1080/1750399X.2016.1198180
- Li, M. (2016). *Translation appreciation and criticism*. Tsinghua University Press.
- Lung, R., & Yan, J. (2004). Attitudes towards a literature-oriented translation curriculum. *Babel*, 50(1), 3–12. doi:10.1075/babel.50.1.03lun
- Ma, Z. (2018). English stylistics in a Chinese-English Literary Translation classroom. *The Interpreter and Translator Trainer*, 12(4), 406–422. doi:10.1080/1750399X.2018.1540210
- Mu, Y., Tian, L., & Yang, W. (2018). Towards a knowledge management model for online translation learning. In T. Hao, W. Chen, H. Xie, W. Nadee, & R. Lau (Eds.), *SETE 2018* (pp. 198–207). Springer. doi:10.1007/978-3-030-03580-8_21
- Mu, Y., & Yang, W. (2020). A teaching experiment on a knowledge-network-based online translation learning platform. In E. Popescu, T. Hao, T. Hsu, H. Xie, M. Temperini, & W. Chen (Eds.), *SETE 2019* (pp. 319–328). Springer.
- Mu, Y., & Zhu, C. (2013). In-depth data processing in constructing an online platform for teaching/self-learning of E-C translation and bilingual writing. *Contemporary Foreign Language Studies*, 1, 56–62.
- O'Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The Internet and Higher Education*, 25, 85–95. doi:10.1016/j.iheduc.2015.02.002
- Olohan, M. (2004). *Introducing corpora in translation studies*. Routledge. doi:10.4324/9780203640005
- PACTE. (2003). Building a translation competence model. In F. Alves (Ed.), *Triangulating translation: Perspectives in process-oriented research* (pp. 43–66). Amsterdam: John Benjamins Publishing Company.
- Textwells. (n.d.). Available from <http://www.textwells.com/>
- Tian, L. (2020). Application of parallel corpus to teaching style and translation. In E. Popescu, T. Hao, T. Hsu, H. Xie, M. Temperini, & W. Chen (Eds.), *SETE 2019* (pp. 237–245). Springer. doi:10.1007/978-3-030-38778-5_26

- Tian, L., Mu, Y., & Yang, W. (2018). Designing a platform-facilitated and corpus-assisted translation class. In T. Hao, W. Chen, H. Xie, W. Nadee, & R. Lau (Eds.), *SETE 2018* (pp. 208–217). Springer. doi:10.1007/978-3-030-03580-8_22
- Tymoczko, M. (2014). Literary translation is a good model for translation theory and practice. In J. Boase-Beier, A. Fawcett, & P. Wilson (Eds.), *Literary translation: Redrawing the boundaries* (pp. 11–31). Palgrave Macmillan.
- Venuti, L. (1995). *The translator's invisibility: A history of translation*. Routledge. doi:10.4324/9780203360064
- Wang, H. (2007). *A Translation coursebook of masterpieces in Chinese and world literature*. Higher Education Press.
- Wang, H. (2015). Incorporating an in-depth annotated corpus into the translation classroom. *Chinese Translators Journal*, 1, 50–54.
- Wang, K., & Qin, H. (2015). The use of parallel corpora in the teaching of translation. *Foreign Language Teaching and Research*, 47(5), 763–772.
- Wang, X., Wang, L., & Yin, H. (2017). The construction and application of the translation teaching model of mobile learning community. *Technology Enhanced Foreign Language Education*, 4, 31–37.
- Zanettin, F., Bernardini, S., & Stewart, D. (Eds.). (2003). *Corpora in translator education*. St. Jerome Publishing.
- Zhang, B. (2011). *Literary translation*. Foreign Language Teaching and Research Press.
- Zhang, W., & Tao, Y. (2017). A study on SPOC-based flipped classroom of translation course for English majors. *Technology Enhanced Foreign Language Education*, 2, 27–32, 39.
- Zhao, Y. (2018). *Literary translation*. Foreign Language Teaching and Research Press.
- Zhu, C. (2008). *New perspectives on translation: Words, texts, poetics*. Yilin Press.
- Zhu, C., & Mu, Y. (2013). Towards a textual accountability-driven mode of teaching and (self-) learning for translation and bilingual writing: With special reference to a CityU online teaching platform. *Chinese Translators Journal*, 2, 56–62.
- Zhu, C., & Wang, H. (2011). A corpus-based, machine-aided mode of translator Training: ClinkNotes and Beyond. *The Interpreter and Translator Trainer*, 5(2), 269–291. doi:10.1080/13556509.2011.10798821
- Zhu, C., & Yip, P. (2010). *ClinkNotes: Towards a corpus-based, machine-aided programme of translation teaching. META: Translators' Journal*, 55(2), 387–408.
- Zhu, Y., & Chen, J. (2015). The theoretical conception and engineering practice of a corpus-based computer-assisted translation. *Technology Enhanced Foreign Language Education*, 4, 52–57.

ENDNOTES

- ¹ As the teaching of computer-aided translation is not the focus of this study, cases as such are not included in the discussion.
- ² Handouts with both the original text and the translated version are sent to the students before class. The material is also available on the platform.
- ³ For the time being, the language on *Textwells* is Chinese and the language pair under concern is mainly Chinese and English. Should demands for other languages come up, it will be considered to provide multilingual interface choices.
- ⁴ The three other English versions of *Moonlight over the Lotus Pond* are respectively translated by Yang Xianyi & Gladys Yang, David E. Pollard, and Ming Li, all of which are available in Li (2016, pp. 136–145).

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