

## Application of RST and Frame Net in Second Language Teaching

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### Abstract

*In Second Language Teaching (SLT), reading comprehension through literature is always a difficult task since it calls for numerous levels of understanding from both the learners' and the teachers' perspectives. The structural intricacy and underlying meaning of the text that the students are studying are frequently difficult for the students to comprehend. However, we must equally admit that one of the most well-liked methods of teaching a language is through the use of literature to teach reading comprehension. A literary text has a vast quantity of cultural knowledge, a rich vocabulary, and sophisticated sentence construction. It enables the student to broaden their knowledge in new areas. The study suggests a teaching-learning model using the flipped learning methodology after taking into account both the difficulties and the potential. It makes it possible for the student to successfully and effectively gain reading comprehension when learning a second language.*

**Keywords:** 1. Use of literature in Reading, 2. RST, 3. Frame Semantics, 4. Flipped Learning

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### 1. Introduction

Second Language Teaching (SLT), especially teaching reading comprehension through literature, is one of the most popular teaching techniques in practice. It has already been proven that reading comprehension, being an important part of SLT, adds a substantial amount of learning to the learning process (Alvermann and Earle, 2003). Ness (2009) notes that it is required in all stages of language learning for all learners as it enables them to overcome their linguistic challenges. Snow (2002) puts it as a simultaneous process of meaning-extraction and construction process through written texts, which enables the reader to interpret the text successfully. These written texts can be of anything, starting from a small piece of writing to a large document. A language teacher can use all these as a part of a comprehension lesson. But compared to other reading materials, his or her use of literature in teaching reading comprehension adds value to the entire

process; as it provides the learners an opportunity to expand their domain of learning by involving readers' experience and beliefs in the meaning formation of the texts. It allows them to create their understanding and new interpretation of that text. It motivates them to observe the culture and ethnicity of the community. It motivates them to build their language awareness as well.

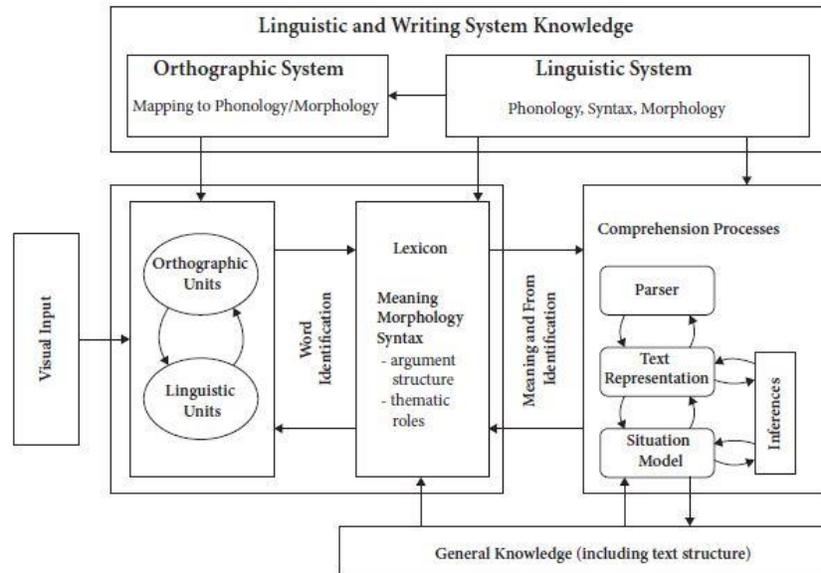
Apart from the benefits of teaching reading comprehension through literature, there exist some difficulties that we must not forget. Through extensive reading of literary texts, learners are exposed to complex grammatical structures and lexical items which are embedded under a linguistic structure. The comprehension of these requires a complex operation of cognitive processes that should operate in different levels of knowledge understanding. For second language learners, this entire cognitive process is a hard nut to crack and they face a problem with text comprehension, especially literary text. Alderson (1984) while dealing with this, identifies this problem of learners either as a result of a reading problem or a language problem. Even though his approach centered around the way how an L2 learner achieves language level proficiency the question that he posted becomes the principal question ever since. Robetson *et al* (2000) by performing fMRI confirm that sentence-level comprehension is associated with the left frontal lobe whereas the overall text comprehension is dealt with by the right frontal lobe. Later on, Walter (2004), in continuation of the mentioned research path, confirms a discontinuity between sentence-by-sentence comprehension of reading text and whole text processing. According to him, intermediate L2 learners who have proficiency in L1 find it difficult to comprehend a text as a whole, whereas his or her sentence comprehension works fine. Walter (2007) rejects the conventional idea that considers the success of L2 learners to comprehend an L2 reading text as a *transfer* of learner's reading comprehension skill from L1 to L2, rather he believes it is more of like *access* "to an already existing non-linguistic skill". This allows the language teacher to provide the necessary help, instead of teaching, to the learners in accessing L2.

The idea of *access*, as Walter puts it, is based on Gernbacher's (1990, 1991, 1995, 1997) Structure Building Framework (henceforth SBF). As per this framework, comprehension is a general cognitive skill that is neither language-specific nor learning skill (reading, listening, speaking, writing) specific. It works in the same way regardless of how the learner is perceiving the language. Hence SBF believes that skill in comprehending a text is not linguistic rather it is purely cognitive which is developed simultaneously with L1, but independently. The current work deviates from this idea, even though it believes in Walter's concept of *access* in terms of comprehension. The paper, in this context, proposes that language comprehension majorly depends on linguistic knowledge and the way how we conceive a particular language. Therefore, the mentioned framework sees comprehension as a cognitive process that emerged through a language learning task-based knowledge system. To reach this desired goal, the paper is sliced it up into four sections. Section 2 will deal with the idea of *access* in terms of linguistic processes of reading comprehension. In Section 3 the paper while dealing specifically with the linguistic process, will introduce two frameworks, i.e. FrameNet and Rhetorical Structure Theory (RST), and how they can be used in teaching reading comprehension. Finally, in Section 4, based on Section 3, a theoretical outline will be proposed that will accommodate both the linguistic and cognitive processes together. This will also help the entire teaching process of reading comprehension through literature.

## 2. Linguistic Processes of Reading Comprehension

In reading, the comprehension process depends particularly on the way the learner is conceiving a literary text. So the language teacher needs to bring about the multiple cognitive layering that happens across the language. This layering starts at the word level and it goes up to the next level. Processes of word configuration, syntactic constructions, semantic mapping, and pragmatic understanding, all as one unit by

interacting with the reader's conceptual knowledge, introduce the situation model of the literary text (Adlof and Perfetti, 2011). This could be summarized in the following figure:



**Figure 1: A schematized model of comprehension components (Perfetti 1999)**

The framework in Fig1 describes that the knowledge source that reading comprehension requires, is of three types, (i) linguistic knowledge, (ii) orthographic knowledge, and (iii) general knowledge. The general knowledge includes the knowledge about the text (text genres, text forms, etc.) and also the world (context) in which it finds its relevance. The linguistic and orthographic knowledge, on the other hand, are primarily used to decode the morphological, syntactical, and semantic structures. The entire process starts with word identification which is the primary step of reading comprehension. But this process, alone, is not competent enough to grasp the overall comprehension of the text. As a result of which the framework further moves toward syntactic parsing and semantic modeling. These mentioned processes take place within a cognitive system that has a way that connects our perceptual and long-term memory.

With this overall schema of reading comprehension, if we now look into the process of teaching reading comprehension through literature we will see that the biggest challenge that comes in its way is, syntactic and lexical difficulty. This led Robson (1989) to argue that the mentioned teaching-learning process doesn't help the students in learning the target language. McKay and Moulding (1986) voice the same concern as they claim that reading through literature has minimal contribution to learners' desire in learning the functional command over the language. Schultz (2002), and Lin and Guey (2004), on the other hand, point out the language teachers' concern with practical skills as they claim that lack of practical skills in this particular technique discourages various ELT institutes and universities to consider this as one of the teaching-learning techniques.

But, despite these, we cannot negate the impact that this teaching-learning process carries as a whole. Language teachers should equip the learners in such a way that they can taste the rich cultural context that a literary text possesses. Özkan and Töngür (2014) rightly point out that culture is an inseparable part of language, then it should be an inseparable part of language teaching as well. Therefore, teaching reading through literature is not something that we can easily avoid. The current paper completely understands that while reading literary text learners will face problems in structural complexities, reading between the lines, in comprehending the writer's intention. But this should not refrain him or her to have literary experiences.

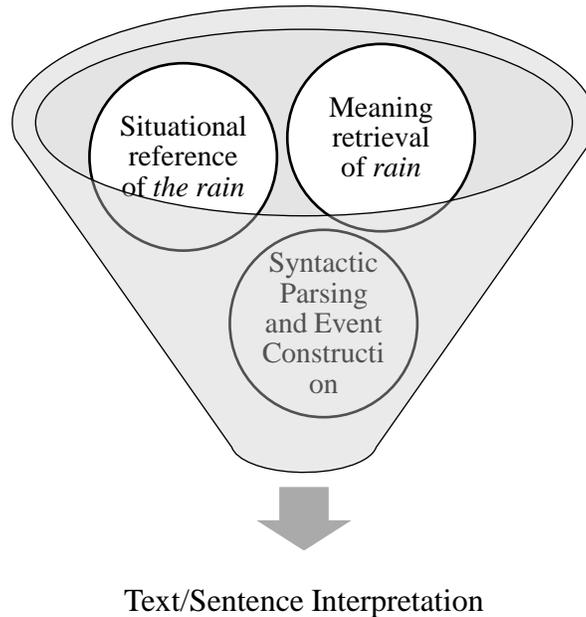
That's why this work, in Section 4, proposes a framework that will guide not only the teachers in teaching but also the readers in learning or comprehending a literary text. But before we get into this framework, we will look into two linguistic theories, i.e., (i) Frame Semantics, and (ii) Rhetorical Structure Theory (RST) for better understanding.

### 3. Text Processing and Comprehension

A text understanding always constitutes a mental representation of the *situation* or *context* in the readers' conceptual domain (Van Dijk&Kinstch, 1983). This could be explained in (1) through an example taken from Stafura and Perfetti (2014)

(1) The rain ruined her beautiful sweater.

In example (1), the noun *rain* is understood through lexical meaning retrieval, the noun phrase through the referential process, and the clause through lexical and parsing processes (Stafura and Perfetti 2014). Therefore, this could be summarized as below:



**Figure 2: Situation Modelling of a Text**

This modeling of text comprehension encourages the current work to dig in more not only at the word processing level but also in the relational structure of the sentence processing level. To deal with this we will deal with two theories here, i.e. (1) Frame Semantics and (2) Rhetorical Structure Theory (RST).

#### 3.1 Frame Semantics

Frame semantics, as the literature suggests, deals with the meaning of a particular text differently. Sometimes it creates new words and phrases to add new meaning to the words and assemble the meanings of the elements in a text to grasp the overall meaning of the text (Fillmore 1982). The word *frame* in frame semantics indicates a system of interrelated concepts. So, if a learner or hearer can understand or

comprehend any one of the concepts, (s)he will be able to grasp the whole structure where that particular text fits. Therefore, *frames* are nothing but an umbrella term for the concepts known as, 'schema', 'cognitive model', 'scaffolding' etc. (Fillmore 1981). The following example will help to understand it better.

(2) Angelica bought the flower from the shopkeeper.

Following Fillmore's (1982) example (2) could be described from the viewpoint of the *commercial transaction frame*. This frame allows the verb *buy* to represent a relationship between its syntactic and semantic structure. Consider the following:

(3)	BUYER	VERB	GOODS	(SELLER)
	Subj = Angelica	buy	object	from the shopkeeper

In terms of verb *buy* table (3) shows that it requires an obligatory BUYER, GOODS, and optionally SELLER. Now if we interpret (2) from the seller's point of view we will get (4):

(4) The shopkeeper sold the flower to Angelica.

Like (2), (4) will also have the same meaning slots but unlike (2) the ordering will be different in (4). It justifies the relationship that exists in Fillmore's relationship frames. Therefore, a combination of frames (2) and (4) results in (5) that validate the *commercial transaction frame*.

(5)	VERB	BUYER	GOODS	SELLER
	buy	subject	object	from
	sell	to	object	

The idea of *frame* in frame semantics, as discussed, helps to understand the sentences like (6) and (7) as well. The following examples are taken from Fillmore (1982):

(6) I can't wait to be on the ground again.

(7) I can't wait to be on land again.

A close analysis between (6) and (7) will indicate that both *land* and *ground* denote similar things, but they are different in terms of their *frame*. Fillmore (1982) points out that example (6) evokes that the speaker is in the airplane whereas in (7) speaker is in the ship. Hence, *the ground* is understood from the conceptual framework of air travel, by keeping *the air* in conflict within that framework, whereas *land* is understood from the conceptual framework of sea travel while keeping *the sea* in contrast. Therefore, the entire *frame*, by investigating the conceptual background of the word in concern, finds its validation by describing something hard to describe through words.

Now the question, that becomes evident over here, is how to frame semantics helps in language teaching, especially teaching reading through literature. To answer this question, the paper moves to the next subsection for a better understanding.

### 3.1.1 Frame Semantics in Teaching Reading Comprehension

In our discussion in Section 2, it has already been pointed out that the major challenge of teaching reading comprehension through literature is to deal with structural complicacy, ambiguity, and many more. Frame Semantics in this juncture works perfectly. Consider the following example from L'Homme (2018):

(8) *The likelihood that a taxon will **DISAPPEAR** or die out within a given area (e.g., one country or the entire world) and over a definable period. Urbanization does not only destroy biodiversity, either, even if it leads to the **DISAPPEARANCE** of certain plants. The faster the rate of climate change, the greater the probability of ecosystem disruption and species **EXTINCTION**.*

In a reading lesson, words are grouped with a thought that the learners will learn together as they represent a single coherent framework of knowledge or experience. It is this framework of knowledge or *coherent schematizations of experience*, as Fillmore (1985) puts it, that holds these words together. Example (8) is a perfect instance of this thought.

While teaching (8) to the learners, a teacher can easily point out that there are three words in the text which are interrelated to each other, namely, *Disappear*, *Disappearance*, and *Extinction*. These three together denote a conceptual domain or a semantic frame *Cease to Exist*. Thus the teacher before introducing the text (8) to the learners can describe this frame. (S)he can introduce the frame with a note that it takes some obligatory and some optional participants. Obligatory participants are the species (taxon, plants, and species as mentioned in (8)) that are undergoing the process of disappearing/disappearance/extinction. On the other hand, time/location are appearing as optional participants here. Added to this the words like *urbanization*, *biodiversity*, and *climate change* further establish the relationship between these participants. A learner with all this information in hand will be able to comprehend not only the word meanings but also the theme of the text, which is in this case *endangered species*.

Likewise, to describe an *eating* situation, the *Ingestion* frame will be helpful for the learners. This frame will be based on verbs, like, *breakfast*, *dine*, *drink*, *eat*, etc. The obligatory participants for this frame will be the *agent(s)* i.e. *ingestor* (+animate) and also the eatable products, i.e. *ingestibles*. Other elements are optional in this case.

Therefore, it won't be wrong to say that while teaching reading comprehension frame semantics will be a useful platform for all sorts of learners and also for teachers. It provides answers to morpho-syntactic questions which ultimately lead the learner to grasp knowledge-driven ones. The paper believes that in teaching reading through the literature, frames offer descriptions of the linguistic element that further allows them to represent the knowledge they express. It allows the learner to comprehend the text more convincingly.

Word identification and disambiguation are critical initial components of reading comprehension. Frame semantics also confirms the same. But we must not forget that this skill may be necessary for comprehension but certainly not the sufficient condition. It has been seen that for some learners' word identification and disambiguation are not enough for text understanding. As they show low comprehension ability despite their adequate word identification skills (Hart, 2005; Landi, 2010). To bridge this gap, the current paper is specifically interested in Rhetorical Structure Theory or RST.

### 3.2 Rhetorical Structure Theory

Rhetorical Structure Theory or RST is a discourse modeling theory that primarily provides a framework for analyzing the coherence of a particular text. Mann and Thompson (1988) through their theory express discourse structure in terms of discourse trees. Their primary intention was to describe the text rather than process and create them. As a result of which, they, through RST posits a range of possibilities of structure, i.e. the *building blocks* that can be observed to occur in texts. These *blocks* denote three objects, i.e., (i) Relations, (ii) Schemas, and (iii) Structures. These three are very much dependent on one another, while relations serve as a connecting thread to the entire framework (Mann and Thompson 1988).

#### (i) Relations

RST divides a text into a series of clauses like structures termed *Elementary Discourse Units* or *EDUs*. These EDUs get connected through discourse relations. Consider the following:

RST Relations	
Circumstance	Antithesis and Concession
Solution hood	Condition and Otherwise
Elaboration	Interpretation and Evaluation
Enablement and Motivation	Restatement and Summary
Evidence and Justify	Sequence
Relations of Cause	Contrast

**Table1: RST Relations (Mann and Thompson 1988)**

RST classifies the EDUs mainly into two parts, i.e., (i) nucleus (N) and (ii) satellite (S). The relations that have been described in Table1 attach a nucleus to its corresponding satellite. Every relation will specify the reader’s judgment of the text which will ultimately lead to the overall comprehension. Following Manna and Thopson (1988), the paper presents the N-S relation in Table2:

Relation	Nucleus	Satellite
Background	a text whose understanding is being facilitated	text for facilitating understanding
Elaboration	basic information	additional information
Preparation	text to be presented	text which prepares the reader to expect and interpret the text to be presented.

**Table2: Nucleus and Satellite Relational Framework**

All these relations shown above are semantically motivated. It also shows how every EDUs are semantically relative to each other across the text.

## (ii) Schemas

According to Mann and Thompson (1988) schemas are a format that allows relations to happen. They have talked about five schemas that demonstrate how nuclei relate to their respective satellites. These schemas are as follows.

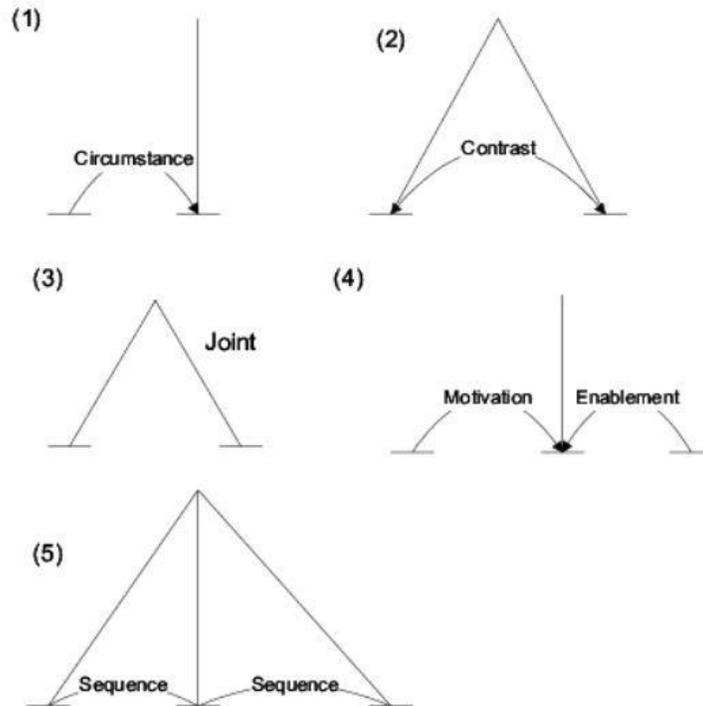


Figure 3: Schemas (Mann and Thompson 1988)

## (iii) Structures

Following the relations and schemas, the final stage of RST analysis is structure. The RST tree will establish the relationship among its EDUs and finally, it will show the inter-sentential relationship. This will help the reader to understand not only the writer's intention but also it will give a better understanding of the text. Consider the RST tree of example (9) from Das and Taboada (2017) in Fig4.

(9) President Bush insists it would be a great tool for curbing the budget deficit and slicing the lard out of government programs. He wants it now.

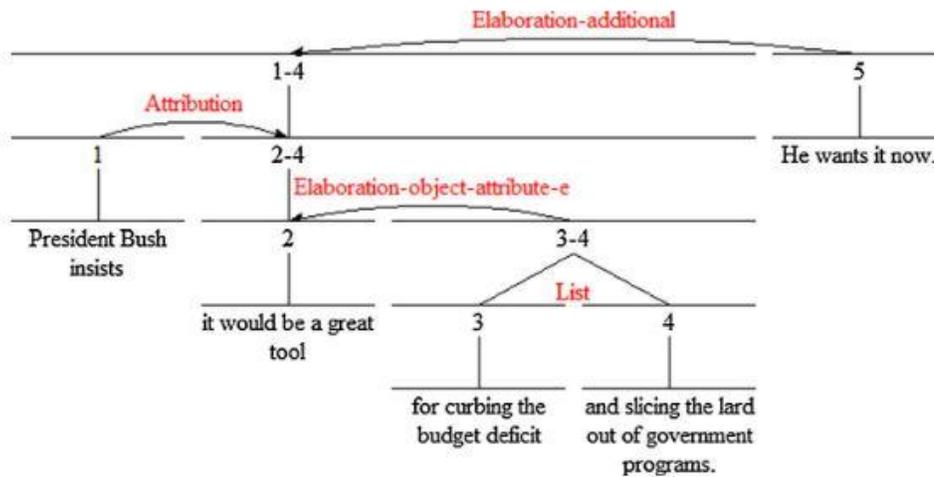


Figure 4: RST tree of (9) (Das and Tabaoda 2017)

The discussion that the paper has made in this section portrays that, in teaching reading comprehension through literature, RST is a very useful tool to have. If the language teacher can understand the text in terms of its EDUs and their corresponding relations, it will be easier for him or her to teach the sentential complexities and the embedded meaning to the learner. On the other hand, the learner will get a better grasp on it, and (s)he will be able to interpret not only the writer’s intention but also its silences. This will help him to form his or her interpretation of the text that (s)he is dealing with.

At this juncture, the research work feels that a learner will get a maximum benefit of RST if we can add the Frame Semantics to it. This will help the L2 learner to get the knowledge of a literary text not only from the intra-sentential level but from the inter-sentential level also. With this thought, the paper progresses towards Section 4 to build a framework as mentioned.

#### 4. A Theoretical Framework of Reading Comprehension

While dealing with the problem of teaching reading comprehension through literature, the current research work feels the necessity to propose a theoretical framework that will help the learner to comprehend a text both at an intra-sentential and inter-sentential level. It has been confirmed in section 3 that comprehension only word-level or sentence-level understanding is not enough thus the current section proposes a framework that is an amalgamation of both. Therefore, the comprehension process of literature text will follow certain steps:

(I) **Identification of the Semantic Frames:** It is the most important process of text comprehension. The teacher should introduce various frames related to the text. So that a learner can comprehend the text in a better way.

(II) **Formulation of a list of frame elements:** After the identification of semantic frames teacher should help the students to list out all the possible obligatory and optional elements. This will help them not only to learn morphological structure but the syntactic structure, as well.

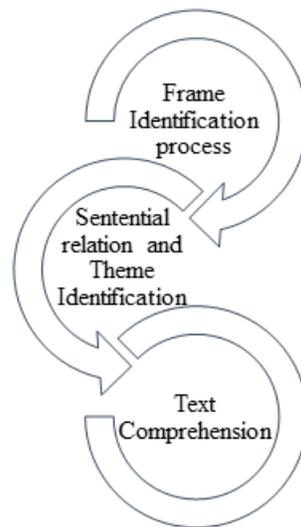
(III) **Simplification of the text through frames:** After identifying the frames and their corresponding elements, a teacher should help them to do a simplification of the text by grouping the entire text through the frame patterns. This will certainly help the learners to visualize the text at a glance.

(IV) **EDUs identification:** RST is the next step to follow here. A teacher will guide the learner in classifying the EDUs.

(V) **N-S relation through RST relation:** Once the learners have identified the EDUs, a teacher should introduce the nucleus and satellite relation among them. This will give a better idea of the inter-sentential relationship.

(VI) **Text Comprehension:** The fulfillment of 1-5 steps will enable the learner to comprehend the text successfully. (S)he will be able to understand the text not only intra-sentential way but inter-sententially as well.

Consider the following figure to understand these steps clearly.



**Figure 5: Teaching-Learning Framework of Text Comprehension**

The proposed framework in Fig5, by deviating from Perfetti's (1999) schematized comprehension model, initiates the reading comprehension through the frame identification process. The language teacher before introducing a literary text to the learners will introduce various frames related to that text. By doing this the teacher will not only help the learner to understand the semantic level but also it will be enabling him to understand the syntactic relation that it shares. After practicing those frames in various contexts teacher will finally introduce the text and will encourage the reader to build his or her understanding of the text. After exercising this technique, a teacher will move towards its second level where (s)he will introduce various inter-sentential relations through RST. As the learner is entering into the sentential relation domain with the prior knowledge of frames and word structure, (s)he will easily identify the topic sentence and thematic interpretation of the context. Hence the learner will be able to grip or comprehend the entire text successfully.

This particular technique of teaching-learning validates the flipped learning methodology which is one of the most exciting advancements in modern classroom teaching. The introduction of both frames and RST will enable the student to learn more effectively in-class time. Language teachers after discussing the frames and RST relations can give the literary text reading as a part of their home assignment. It will help the teacher to use the class time in engaging students in the application part. Thus the teaching-learning through this technique negates the previous view that teaching reading comprehension through literature does not incorporate into practical activity in the class. Finally, it can be said that the proposed teaching-learning framework of text comprehension certainly opens up a new window of knowledge to the entire process of second language teaching.

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