



LITERATURE-BASED ACTIVITIES IN ENGLISH LANGUAGE CLASSES FOR GEOLOGISTS

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Abstract

The primary aim of this paper is to promote and illustrate the educational potential of literature and literary texts in the English classes for geologists. Even though literary texts are not novelty in the classroom, not many educators utilize the creative potential that literature can provide to the language learning, particularly when it comes to the technical faculties such as geology. Academic and professional texts predominate in language textbooks, which rightly develop and encourage technical jargon and academic discourse. On the other hand, literary texts with its variety of styles and modern themes such as geology-based novels, are left unread and unknown to the academic student community. Therefore, in this paper we wanted to examine, in addition to the analysis of existing papers on the use of literary texts in language teaching, the students' attitudes about 4 different language activities based on extracts from the novel "Origin Story" by Christian David. The research was conducted through a closed questionnaire with a group of first-year students of the English language course for geologists. The results indicate that when the extracts are based on language quality texts related to geology, they are acceptable to both language learning and content learning. Additionally, literary texts contribute positively to motivation and increase interest in the topic being discussed.

Key words: *Literature, geology, language activities, students' views.*

Introduction

In support of positive interest to use literary texts many authors defined multitude of factors within their theoretical frameworks, such as [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]. In the words of Carter and Long [1], the use of literature for language study potentially offers a threefold model of teaching: the cultural model, the language model, and the personal growth model. In its core is the idea that students are taught to be reflective readers, likely to be intrigued to further explore, gain different perspectives, and deepen their understanding of culture and cultural diversity.

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However, in the past during the grammar translation practice, literature was considered the most important part of this method. Literary texts were selected in the target language in order to teach a grammar analysis and grammar rules, as well as to perform translation tasks. The method was mostly aimed at learning grammar rules and vocabulary according to their use in a given text. Put differently, the texts were chosen according to the need to learn certain elements of grammar by focusing on the form. According to Bakhshizadeh “the main purpose of grammar translation method is not to focus on the literary content but the surface structure of formal properties of the language that were adhered to. By the time the grammar translation method was no more in use, literary texts happened to be ignored in second language teaching” [12].

The theoretical aspects of literature-based activities

The application of a literary text in foreign language classes for the needs of engineering studies depends not only on the choice of texts but also on the appropriate scientific theory or the basis on which the application itself resides.

Our premise tends to bridge between certain language theories and theories of language learning, with such a pairing that might work in practice in almost the exact way as it reads in theory. In line with Gattegno’s writings [13], it is of pivotal importance to address learners’ needs to feel secure about learning and while learning, as well as to assume full and conscious control over learning. Many of the strategies and tools used to train students to bravely and responsibly use their intelligence to heighten learning are by means of reading, thinking and conceptualizing.

Learning by means of literature belongs to a practice that perceives learning as a creative, discovering activity, in which the learner is a principal actor rather than “a bench-bound listener” [14]. Bruner explains the benefits derived from “discovery learning” under the following headings: (a) the increase in intellectual potency, (b) the shift from extrinsic to intrinsic rewards, (c) the learning of heuristics by discovering, and (d) the aid to conserving memory [14]. Learners are expected to develop independence, autonomy, and responsibility. Independent students are those students who are aware that they depend on their own resources so that they can use the knowledge of their own language to open up some things in a new language. The absence of correction and repeated modelling from the teacher leads the students to develop “inner criteria” and to correct themselves, and in this way to come to their own conclusions and their own rules [15]. Having only themselves as individuals and the group of other students to rely on, they must learn to work cooperatively rather than competitively. They need to feel comfortable both correcting one another and being corrected by one another.

To this theoretical framework it is indispensable to mention two hypotheses proposed by Krashen [16, 17, 6]: (a) the input hypothesis, and (b) the affective filter hypothesis. The former implies that the target level of difficulty should be challenging enough for a student to put in the most of their effort and yet not so difficult that they cannot attain the goal. To put simply, the language level should be slightly above, or one level



beyond the one the student possesses currently. In this way, reading a popular novel or literary hybrid such as the one we proposed, requires a type of practical and attainable effort. It is also the one that rewards them in the way they do some additional activities to fully appreciate and understand completely what they have read, learned and created.

The latter hypothesis implies that the less anxiety the student has, the better the progress. Put differently, the hypothesis proposes that student's needs, preferences and tastes should be met in order to make the learning more relaxed, joyful and successful. The selected literary passages can introduce the readers into the magic and beauty of the language entirely different from the academic one and the academic context altogether. According to Raasch: "that's why literature is so fascinating. It's always up for interpretation, and could be a hundred different things to a hundred different individuals. It's never the same thing twice" [18].

The practical aspects of literature-based activities

As for the application of literature in teaching English to geologists, we were guided by Cummins' ideas [19] that led us to important principles which we translated into our own classroom setting in the following way:

1. In defining course objectives, we must first consider the learners' proficiency and general development in their L1 at course entry; accordingly, expectations with respect to fluency in the target language and expectations concerning academic skills in the new language can be suited to the particular student population.
 - 1a Our attempt here is to put the students through a carefully sequenced and intensive practice period where positive feelings of progression through literary texts is reinforced by tasks that are not automated and require less cognitive effort.
2. In developing learning tasks, careful attention needs to be given to level of cognitive ability which is required for the fulfilment of the tasks. Tasks, therefore, should be presented in a graded sequence from those that are less to more demanding.
 - 2a Decontextualized learning and decontextualized use of language is necessary for students to be sensitized to all functions of language. Bearing in mind that students are used to tasks that are well-learned and requiring more cognitive involvement, here with extracts from literature, expressing one's own views and thoughts is encouraged and eventually leads to real communication and communicative competence.
3. In designing activities for language use, learners should be guided from context-embedded to context-reduced situations, enabling them to develop the necessary skills to interact in the latter. Also, in developing learning tasks, careful attention needs to be given to the level of cognitive ability which is required for the fulfilment of the tasks.
 - 3a In a continuum of context-embedded tasks with communication where the meaning is actively negotiated and context-reduced where students rely on



situational linguistic clues, here, with literature, discrete points in the language above all, avoid succession of similar activities, also termed, pattern practice, and favour situations in which emphasis is on totality of language learning. In this way, creativity, self-expression and personality traits are not overlooked but reinforced by shifting to socio-cultural appropriateness and communicative competence.

4. In planning the overall course, we need to incorporate both fluency-oriented work leading towards face-to-face communication and proficiency. The incorporation of both aspects of language acquisition will enable learners to develop both their interpersonal communicative strategies and the academic language skills needed for successful scholastic work.
 - 4a In pragmatic terms, literary texts draw from humanistic aspects and thus great emphasis is put on meaningful and authentic communication where outcomes are not predetermined. Our learners are viewed as highly valued individuals where learning is perceived as self-realization experience in which the learner has considerable say. The first language of the learner is viewed as a useful aid serving considerably in formulating linguistic focal points.

The literature-based activities for geologists

In inspiration is that literature is not "just" a quote here, and a line there. Literary texts are rather lights of one's own fires, to put it metaphorically, what literature truly in its core is. In the words of Pinar et al, participating in learning is a conscious and explicit participation in an aesthetic experience [20], meaning that the imagination that electrifies or gives life to a person's energy source flows from the selection of shocking but aesthetically pleasing sources. According to Doll "the teacher serves the function of introducing different cultural material with the intent of sparking student imagination and initiating the energy flow from within. Such processes should result in learning that has, as its root trace, an authenticity not discoverable by traditional teaching pedagogies [21]. An example of the novel "Origin Story" or the short textual passages provide students with the two-edged characteristic of fiction's unfamiliarity: its wonder and its truth. The not so favoured side of translation is slowness. However, giving students time to wonder over a passage, to dwell inside it, is a gift teachers can afford to offer in order to allow for silence to dramatically alter classroom dynamics.

Activity 1. Critical thinking:

"Frankly, today we have no better answers to the problem of ultimate beginnings than any earlier human society had. Bootstrapping a universe still looks like a logical and metaphysical paradox. We don't know what Goldilocks conditions allowed all universes to emerge, and we still can't explain it any better than novelist Terry Pratchett did when he wrote, "The current state of knowledge can be summarized thus: in the beginning, there was nothing, which exploded". [22]

Activity 2. Linguistic learners:

"Electrons are key players. Like human lovers, electrons are unpredictable, fickle, and always open to better offers. They buzz around protons in distinct orbits, each associated with a different energy level. Wherever possible, electrons head for the orbits closest to an atom's



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nucleus, which require the least energy. But the number of spaces in each orbit is limited, and if no places are left in the inner orbits, they have to settle for places in an outer orbit. If that orbit has just the right number of electrons, everyone is happy. This is the situation of the so-called right-hand side of the periodic table. They don't combine with other atoms because they are more or less content with the status quo." [22]

Activity 3. Musical learners:

*"In those days the dwellings of Agade were filled with gold,
its bright-shining houses were filled with silver,
into its granaries were brought copper, tin, slabs of lapis lazuli, its silos bulged...
its quays where the boats docked were all bustle...
its walls reached skyward like a mountain ...
the gates – like the Tigris emptying its water into sea,*

holy Inoanna opened its gates. " Sumerian poem translated by S. N. Kramer [22]

Activity 4. Interpersonal learners:

"We arrive in this universe through no choice of our own, at a time and place not of our choosing. For a few moments, like cosmic fireflies, we will travel with other humans, with our parents, with our sisters and brothers, with our children, with friends and enemies. We will travel, too, with other life-forms, from bacteria to baboons, with rocks and oceans and auroras, with moons and meteors, planets and stars, with quarks and photons and supernovas and black holes, with slugs and cell phones, and with lots and lots of empty space. The cavalcade is rich, colorful, cacophonous, and mysterious, and though we humans will eventually leave it, the cavalcade will move on. In the remote future, other travelers will join and leave the cavalcade. Eventually, though, the cavalcade will thin out." [22]

Hypotheses and methodology

Hypothesis 1 postulates that learning geology through literature can be stimulating. Hypothesis 2 argues that geology-based literature can help develop vocabulary and language skills in an adequate way.

Hypothesis 3 takes the view that the translation activities of literary passages are beneficial and entertaining.

Participants

The study involved 66 respondents. Respondents hold mainly three levels of English language proficiency, from B1 to C1. Therefore, it is assumed that respondents will have different assessments when it comes to learning vocabulary given the heterogeneity of the group.



Instrument

A special questionnaire designed only for this research was used, and it consisted of 10 closed-ended questions. A Likert scale with values from 1 to 3 was used, where 1 denotes a positive attitude, 2 denotes a neutral attitude, and 3 denotes a negative attitude. The questionnaire was anonymous in order to contribute to the validity of the study. All students agreed to participate in the survey and research.

Procedure

Students completed the questionnaire during regular English classes. Respondents were given 30 minutes to complete the questionnaire offered to them on November 2, 2021. Respondents were instructed to make their answers as precise as possible, which is crucial for the success of the study. Also, students were asked to give honest and experience-rich answers, which was primarily the intention of the research

Results

Results are presented in the following table and the discussion is given separately.

Table 1. Quantitative presentation of results

| | Question | Assessed positively (%) | Assessed as neutral (%) | Assessed negatively (%) |
|----|--|-------------------------|-------------------------|-------------------------|
| 1 | Do you rate literary texts as a positive or negative experience? | 94.8 | 4.2 | 1 |
| 2 | To what extent do literary texts support learning geology? | 92.8 | 4.2 | 3 |
| 3 | To what extent examples from literature affect your perception of geoscience? | 83.7 | 13.3 | 3 |
| 4 | To what extent do texts from literature suit your academic needs? | 92.8 | 6.2 | 1 |
| 5 | To what extent examples from literature provide an opportunity to enrich the lexical repertoire? | 88.7 | 9.3 | 2 |
| 6 | What is your view on the linguistic suitability of literary texts? | 90.9 | 6.1 | 3 |
| 7 | What is your attitude about the fact that literature refreshes language classes? | 83.7 | 13.2 | 3.1 |
| 8 | What is your opinion about the fact that geology can be learned through translation activities? | 73.5 | 19.3 | 7.2 |
| 9 | How do you evaluate translation activities through literary texts? | 85.7 | 12.3 | 2 |
| 10 | Do you recommend the translation activities of literary texts in the higher years of study? | 93.9 | 6.1 | 0 |



Discussion

Based on the results of the study, the researchers concluded that the use of literary texts can significantly improve foreign language skills. Literature can reduce the cognitive load associated with complex reasoning because it can present important information in a simpler and more symbolic way than equivalent scientific texts. Accordingly, the first four questions were related to the first hypothesis or whether students positively evaluate literary texts, if the texts support major studies in geology, whether they change their perception and if the texts accompany their academic needs (question 1: 94.8%, question 2: 92.8%, question 3: 83.7%, question 4: 92.8%). It seems that literary linguistic input is not too difficult, it can hold the reader's attention and it can also distract the reader from the linguistic complexity due to the fact that the same topics are taught in basic geology studies. Researchers claim that literary texts or activities are easier to process when the topic has already been learned in major studies and when mental notions of relationships are constructed on the basis of native language lectures that facilitate mental model building in foreign language classes. According to this logic, in order to construct an accurate mental model, readers need a mental structure in their mother tongue that would closely reflect and reinforce the literary structure and complexity.

The second hypothesis is related to the first because it investigates whether literature based on geology is helpful in the development of vocabulary and language skills (question 5: 88.7%, question 6: 90.9%, question 7: 83,7%) The results of the research suggest that literature is stimulating, but given the respondents' little experience in translation, the solutions offered in their attempts at translation contain a great deal of uncertainty and inexperience. Also, we have one dilemma when it comes to literature in general, not just novels, and that is to examine in the coming period how much students read as adults in general. Namely, our idea is to teach science and language as little as possible stereotypically and as multidisciplinary as possible at the same time, but the measure of success will greatly depend on the cultural habits of our students as lovers of written art.

The third hypothesis, which deals with the amount of usefulness and entertainment when it comes to translation activities, proved to be largely justified (question 8: 73.5%, question 9: 85.7%, question 10: 93.9%). The results of this research suggest, but do not fully reveal, that the effects of translating passages from literature on first-year students may be limited by a number of factors: general understanding of artistic text, especially those with low subject preferences, modest knowledge of translation techniques, linguistic complexity for students with a low level of verbal comprehension, as well as the level of knowledge of students' vocabulary in their mother tongue.



Conclusion

The application of literary texts in English language classes for geologists is an underestimated and insufficiently researched potential for learning. Therefore, the use of literary texts presents a special challenge for lecturers given the fact that the number of classes is limited, i.e. time per class is reduced to a small available fragment, students are often reluctant to cooperate, and the type of text should intrigue as many students as possible bearing in mind that they are inclined to a wide range of non-reading and non-analytical type of art. Aware that literature can only have an auxiliary, accompanying role in language classes, we approached the selection of literary passages based on interesting, stimulating and relevant content. Additionally, we set our educational goals to selection of four activities that can potentially yield pleasure of reading, a hybrid novel closely interwoven with geology such as “Origin Story” by Christian David. In summarizing the idea of applying literature as inspirational and beneficial technique in both learning geology and language, we seem to have managed to gain insight into the many levels at which language can be learned without being oversimplified, didactic, or demanding.

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