Tabari Biomedical Student Research Journal

OPEN ACCESS

ORIGINAL: Exploring Van's Literature-Based Teaching Approaches and Gender Differences in Enhancing Reading Comprehension Among Medical Students: A Study at Gilan University of Medical Sciences

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ARTICLE INFO

Submitted: 01 Jul 2025
Accepted: 18 Aug 2025
Published: 21 Sep 2025

Keywords:
Gender Differences
Literature-Based Teaching
Reading Comprehension
Van's Approaches
Medical Education

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Citation:
Rahimipour S, Sharaj Sharifi Y. Exploring Van's Literature-Based Teaching Approaches and Gender Differences in Enhancing Reading Comprehension Among Medical Students: A Study at Gilan University of Medical Sciences. Tabari Biomed Stu Res J. 2025;7(3): 46-59.

ABSTRACT

Background: This study explores the efficacy of Van's literature-based teaching approaches in enhancing reading comprehension among medical students at Gilan University of Medical Sciences, with a focus on gender differences. Literature's integration into EFL teaching has gained attention for its potential to develop critical thinking and language proficiency.

Methods: A true experimental design was employed, involving 120 medical students (60 males, 60 females). Participants were divided into experimental and control groups, with the experimental groups taught using Van's six literature-based approaches. Pre-tests and post-tests were conducted to measure reading comprehension performance. Statistical analyses, including ANCOVA, were used to evaluate the data.

Results: Findings revealed that Van's approaches significantly improved students' reading comprehension, with the Reader Response, Language-Based, and Critical Literacy (RRLBLL) approaches outperforming the New Criticism, Structuralism, and Stylistics (NCSS) approaches. Female students consistently scored higher than males in both experimental groups. The control group, taught using conventional methods, showed significantly lower performance compared to the experimental groups.

Conclusion: Van's literature-based approaches effectively enhance reading comprehension and critical thinking among medical students, with a notable advantage observed in female learners. These findings underscore the potential of literature integration in EFL programs, particularly in academic contexts requiring advanced language skills. The study highlights the importance of tailored teaching methods to address gender-specific learning preferences and recommends incorporating Van's approaches into university-level English curricula to foster better academic outcomes.

Introduction

Language teaching and learning has always been a matter of academic concern for instructors and teaching and learning languages. English as a foreign language has received focal academic attention in Iranian academic centers. In the ministry of higher education in Iran, at least 5 to 8 academic credit courses on general and ESP English courses have been incorporated in the academic curriculum. The questions of teaching approaches and the appropriate materials have always been the center of researches respectively. A newly and hotly debated concern in this field has been the revival and introduction of literature and literary materials in TEFL. More recently, a

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few researches have been carried out on the applicability of this genre to TEFL in academic centers. Accordingly, literature studies and analyses have turned into a frequent trend of intellectual enlightenment in applied linguistics recently. The curriculum objectives in any society aim at training the learners for special purposes. In the majority of EFL settings, less care has been given to the role of literature in intellectual practice and activities. The role of literature in EFL situations has recently received a focal and pivotal attention and consideration as the results of research in this field have proved to be promising. A quick survey of its application and deployment in the dominant language teaching approaches reveal the status it has held in language teaching and learning. In the field of language teaching in the past when GTM and Audiolingual were in common practice, less or no attention was paid to language learning mental and effective powers. As the psychological trends changed, much attention was paid to the role of mind and materials which challenged different intelligences. From this era onwards, literature and literary materials again received interest and attention for learning but this time via the framework of literature characteristics and its applications not just as muscle challenging materials like those deployed by GTM proponents. Van [1] has introduced six categories of literary approaches whose analysis reveals that the first three can be viewed as behavioristic in nature and the second three can be classified under the umbrella term of humanism or cognitivism in scope and application.

Van and other intellectuals' works pave the way for the revival and application of literature to TEFL. Many researchers dealt with the introduction of literature teaching approaches and literary materials and their incorporation into the ESL/EFL teaching methodology. This research has dealt with content and levels of Van's [1] categorization of literature teaching approaches and its correlation with the appraisal of the male and female learners' performance on reading comprehension tests.

That is why the immediate need for the detection of the formation, clarification, and illustration of the most effective literature approaches of Van from the view point of male and female academic learners obsessed the researcher.

Van's [1] categorization of literature teaching approaches as taken from Oktan and Kaymakamoğlu [2] are as follows:

a. New Criticism: this approach specifically focuses on text and its accompanying characteristics; it disregards every other linguistic and non-linguistic aspects.

b. Structuralism: this one concentrates on the linguistic structures and leaves no room for the role of thoughts of the learners.

c. Stylistics: highlights the significance of elements of literature and literary works and educates the learners in accordance with the literary interpretation and understanding.

Upon a close and delicate appraisal of scope of these approaches, it becomes clear that they are psychologically behavioristic and linguistically structural in scope from applied linguistics view point.

d. Reader Response: it prioritizes the reader and his interaction with the text; their experiences, culture understanding or feelings turn to crucial characteristics in this approach.

e. Language-based: it trains the learners to become active and communicative in the language which is being learned. Moreover, it targets both literary elements and the use of language as well. It lends itself to teaching four language skills.

f. Critical Literacy: this final approach aims at enhancing learners' critical awareness. Accordingly, it calls into question other aspects such as political, cultural, and social matters which are of great importance for the learners. Wholly, these three final groups target communicative and authentic aspects of language learning and sound to enable the learners to learn the language more native-like.

Thematically, the six approaches were codified into two major approaches. They were applied and deployed in the research groups to come up with their applicability in language teaching in academic centers, their

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efficiency in teaching English language, their impact on genders, and finally their priority for deployment in teaching and learning languages. In this research, the first three approaches were exercised in the first female and male experimental groups and the second three groups were practiced in the second male and female experimental groups. Their performances were compared with those of the control groups.

Recent scholarship has reaffirmed the pedagogical value of literature in EFL university programs. Integrating literary texts exposes learners to rich language and cultural contexts, engaging them in higher-order thinking [3, 4]. Van's [1] six-category framework– including New Criticism, Structuralism, Stylistics, Reader-Response, Language-Based, and Critical Literacy approaches– provides a useful taxonomy for organizing literature instruction. Contemporary studies show that effective EFL literature teaching often blends these approaches. For example, Lazar's stylistic (language-based) approach encourages students to analyze grammar and vocabulary in context, which Jabeen and Sarfira [5] report as boosting learners' comprehension and confidence. A personal-growth/reader-response approach [6] emphasizes students' emotional engagement, imagination and reflection, fostering critical thinking as learners interpret texts [5].) whereas a cultural or information-based approach foregrounds background knowledge about the text's context and themes. Each approach yields different benefits: Febriani et al. [7] found that Indonesian literature lecturers perceived the language-based, reader-response, and philosophical (moral-cognitive) methods each had distinct strengths and drawbacks in developing students' writing and thinking about texts.

Recent empirical work supports the continued relevance of Van's categories while advocating more integrated, eclectic pedagogy. Mary et al., for example, identified four primary modes in Myanmar universities: Paraphrastic (simplifying or summarizing texts), Information-Based (emphasizing content and context), Language-Based (focusing on linguistic form), and Integrated approaches. Teachers tailor these methods to learners' needs, using activities like guided discussion, role-play, or text-expansion to maintain engagement. In practice, literature curricula often blend approaches: stylistic analysis may be combined with personal response activities, or cultural discussions may be framed by explicit language exercises. Mary et al. report that a multifaceted approach caters to diverse learning styles and preferences. The payoff of this variety is substantial. For instance, Nuemaihom et al. found that integrating multiple literary genres (short stories, novels, poetry, drama) not only enhanced language proficiency but also fostered critical thinking and cultural awareness among university students. This echoes prior findings that well-chosen literary texts can motivate learners and provide authentic contexts for language use and inference. Regmi [8] likewise concluded that engaging with literary texts through meaningful activities sharpens students' inferential and intellectual skills and promotes critical reflection on plots and themes. In sum, Van's classification still underpins course design, but contemporary EFL instruction often emphasizes interactive, student-centered pedagogies that mix Van's elements to maximize language and thinking gains.

Gender Differences in Literature-Based Instruction

Gender is a salient variable in reading education, and recent studies have examined how male and female EFL learners respond to literature-based instruction. Several investigations suggest that female learners generally engage more with texts and often achieve higher comprehension scores. In one Philippine study, senior high students (ages 17–18) who read Edgar Allan Poe short stories scored significantly higher than male peers, with females demonstrating "a higher level of understanding" of the literary pieces. Similarly, Milal et al. [9] surveyed Indonesian EFL undergraduates and found that 82.4% of female students spent leisure time reading (particularly literary works), compared to

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51.1% of males. This gender gap in engagement was reflected in their preferences: both genders read social media most, but females read literary texts second most often, whereas males leaned more toward informational media. In terms of strategy use, Rianto [10] observed that Indonesian university students of both sexes differed in reading strategy use, with females outperforming males on overall metacognitive strategy scores, which in turn predicted higher self-rated online reading ability.

These findings imply that male and female students may respond differently to literature activities. For example, higher female engagement with fiction might translate into greater gains when literature is used in class. Teachers should be mindful that female learners often report more intrinsic motivation for reading and may benefit readily from interpretive tasks, whereas male learners might need different stimuli or supports. However, other research cautions against overgeneralization. Rianto found that gender differences appeared mainly among less-skilled readers, with no gender gap among more proficient students. Moreover, the nature of the text matters: Febriani et al. [7] note that since each literary approach has its own effect on students' critical thinking and writing, teachers might offer varied tasks or scaffolding when using literature, being attentive to how different learners (including by gender) engage with reader-response versus analytical activities. Taken together, while evidence leans toward a female advantage in literary reading and comprehension, the pedagogical focus should be on using a range of approaches to meet all students' needs and on encouraging equal participation in interpretation and discussion.

Literature in Developing Reading Comprehension and Critical Thinking

Across contexts, researchers emphasize the dual language and thinking gains from literature study. By grappling with complex narratives and poetic language, learners must infer meaning and connect ideas, which builds reading comprehension skills. Mary et al. point out that literature integration has "long been recognized as a valuable approach to enhancing critical thinking, language skills, and cultural understanding among students". In fact, recent evidence shows that curriculum interventions centered on literary texts can raise test scores. For example, Kaowiwattanakull [11] and Karlsson [12] (cited in Nuemaihom et al.) found that students in literature-rich EFL programs significantly improved their reading comprehension and critical thinking measures. In practical terms, literature provides contextualized input: as students read stories or poems, they encounter new vocabulary and syntax in memorable settings, which aids retention and inferencing. Moreover, discussing literature trains them to justify interpretations with text evidence and to consider multiple perspectives – hallmarks of critical literacy. Regmi's qualitative study [8] highlighted that tasks "between the lines" and "beyond the text" invite learners to hypothesize, debate, and create, activities that sharpen both linguistic and analytical skills.

The impact is especially notable among pre-service teachers. In teacher-education settings, literature classes serve a dual purpose: they improve future teachers' own reading proficiency and demonstrate pedagogical methods. Setiawan and Nurbani [13] studied Indonesian EFL pre-service teachers and found that they perceive literary works as crucial for developing critical literacy. In group discussions, these student-teachers reported that engaging with literary texts enhanced their critical thinking, creativity, and open-mindedness. In other words, literature acts as a "bridge" to higher-order skills: by analyzing character motivations or thematic issues, pre-service teachers practice the very reasoning they will later teach to their own students. Other studies echo this sentiment: literature-based tasks (portfolios, journals, peer discussions) encourage reflection and interpretive writing, strengthening self-regulation and analytic reading habits [14]. Although much research on EFL critical thinking dates from before 2020, the core message remains that literary

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texts – whether classic short stories or contemporary narratives – can provoke discussion and debate in ways that purely informational texts often do not.

It exposes learners to authentic uses of English, varied stylistic registers, and cultural nuances beyond their daily experience. As Setiawan and Nurbani conclude, literary engagement cultivates "critical literacy through critical thinking"– a goal perfectly aligned with preparing reflective educators. By using Van's approaches within literature classes (e.g. a reader-response journal one day and a stylistic analysis the next), English instructors can both respect individual learner differences (including gender) and systematically build reading comprehension and critical reasoning.

In summary, Van's six approaches to literature teaching remain relevant in today's EFL higher-education contexts, although teachers often merge elements of multiple approaches to suit contemporary classrooms. Gender appears to moderate how learners engage with literature tasks, with female students tending to participate more actively, suggesting instructors should vary texts and methods to engage all genders. Crucially, scholarly evidence overwhelmingly supports literature's role in bolstering both reading skills and higher-order thinking among university EFL students. In medical training centers (such as those in Iran), using literary texts is thus pedagogically sound: it provides a rich context for language practice and models the analytical skills these medical students will need to foster in their professional activities and researches.

Significance of the Related Literature

Reading skill has been considered as the prime purpose of teaching English in Iranian Universities. Students are expected to acquire required skills and abilities to read foreign texts on the line of their academic purposes. They are offered a few academic courses on general English when they are doing their own major. Many researches have been done on the finding and introduction of the best working approach and procedure for enabling university students to achieve this goal. When it comes to the question of providing English education for medical university students, the significance of these courses becomes more crucial as the students get involved in more English based texts, researches and educational materials in their official career. Although the curriculum suggests the nature of the courses to be general in nature, the real teaching profession of the learners call for English as an ESP course which would be based on and involved in English content which is mainly educationally-oriented. By education, I mean the lexicon and the content of the texts and the materials would centralize about teaching, learning, class, and related areas. Teaching approach is considered as one of the main stages of education. Generally, it is believed that as long as the teaching approach incorporate the full capabilities of the learners, they learn best rather than learning alone or using one single mental processing. Among the many available teaching approaches, we can introduce Van's literature teaching approaches which have recently attained promising attempts in academic circles. Van's literature teaching approaches are mainly founded on constructivism in nature as they can be justified in terms of Kalaian and Kasim [15] The major principles of constructivism underlying the background of Van' literature teaching approaches can also be grounded and interpreted in terms of Dewey, Bruner, Piaget and Vigotsky learning ideas. [16] To connect theory and real practice, a short introduction of theories of language learning and more specifically reading skill and the related researches and academic obsessions on language learning and reading skill training are provided. In accordance with Krashen's model [17] regarding the provision of appropriate input in his i+1 theory, one can see that, "since the 1980s, with the emergence of the communicative approach and the action-oriented method in the following years in foreign language teaching, the authentic documents such as novels, magazines, newspapers, poems, songs, postcards, newspapers, magazine articles, trains, plane

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tickets, etc., which are not prepared for the class and independent from the course books, have begun to be used in the classroom"[18] as materials to be used for capturing the above purposes and as tools for flourishing the learners' critical thinking capabilities.

Many intellectuals claim that the language used in "literary texts is common language with a high concentration of linguistic features like metaphors, similes, poetic lexis, unusual syntactic patterns, etc. These are not literature specific since these features also appear in ordinary language use and also in nursery rhymes, proverbs or publicity slogans, just to cite a few examples, however, in literature these show a higher incidence" [19].

Many imminent features exist in literature that can serve different purposes and functions for the teachers and learners. Literary materials lend themselves to different types of tasks which can be deployed for diverse orientations and assignments. For example, such literature-based tasks provide an authentic condition for language learning in which "practice entails educational planning that provides time and space for discovery, analysis, reflection, and intercultural exploration." [20].

With the advent of cognitive code approaches and their emphasis on communication and the use of authentic materials as well as great care for the meaningful, mental, cognitive and metacognitive learning of the language, a loud call for the incorporation of literature and literary genres on the line of enhancing the learners' critical thinking could be heard. To the researcher's best recollection, deployment of literature-based approaches "enable learners strive to maximize the efficiency of communication by using common language elements that will facilitate communication in the most efficient way". [21] Literature has been found promising for "extensive and intensive reading. Novels are good for extensive reading purposes. Students can be given a weak just to go through a novel without extensive use of dictionary" [22]. Accordingly, literary texts regained importance again to contribute to the development of communication and critical thinking skills alongside improving major and subskills of language like reading comprehension. Many other researchers have indicated that the advantages of literature are multifarious. They indicate "reasons for which implementing literature in junior high schools in Iran and elsewhere sounds quite plausible" [23]. That is why as cited in Atmaca & Günday [18] during that period, a lot of research have been done by researchers for the use of literary texts in foreign language teaching: Collie and Slater, 1987; Duff and Maley, 1990; Gower and Pearson, 1986; Hill, 1986; Maley and Duff, 1989; McRae, 1991; Carter and Burton, 1982; Maley and Moulding, 1985; Brumfit and Carter, 1986; Walker and Brumfit, 1989; Carter amd Long, 1991; Bassnett amd Grundy, 1993; İnan and Yüksel, 2013 [3, 24-37].

More pertinent to the scope of this research, literature equips the learners with "different styles and encourages thoughtful and purposeful learning. Structuring language lessons around the reading of literature introduces a profound range of vocabulary, dialogue, and prose which intrinsically flourish learners' reading comprehension. In addition to developing students' English language skills, teaching literature also exposes them to the practical use of language. It enhances cultural awareness and encourages critical thinking about characters, plots, themes, and so on" [34]. Shirzadi and Moheimany [22] have dealt with integrating literature into EFL classes: the case of bringing short stories into Iranian EFL classes to see its impact on the EFL learners' language learning motivation and their attitudes towards English literature.

When we are training Medical University students whose future job would be research and practice, I came up with this inspiration that ideas from literature for teaching foreign language can be highly promising. This would enable the learners to become more critical in learning as the nature of English as a foreign language lends itself to this mode of thinking and learning. It becomes crucial for students to "develop their organizational skills of this

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genre for their audiences, engage in critical and analytic thinking to become independent thinkers, and become independent writers" [35- 38]. The use of literature and specifically the novel genre "increases students' motivation to read and gives students the prospect to make use of their creativity and critical thinking skills "[39] to become fluent and capable reader. In a similar setting like what is going on in this research setting, Nosratian and Zaker [40] systematically inspected the way teacher factors, i.e. reflection on practice and autonomous performance, can affect EFL teachers' success in teaching and the way EFL learners are influenced through this mechanism. This study particularly has attempted to detect the impact of authentic texts like literary materials based on Van's literature teaching approaches on learners' reading comprehension capabilities. As reading as a kind of decoding mechanism reminds the reader of the way the writer has coded the text and its theme, subconsciously or un consciously it enables the reader to get more acquainted with other language skills and also give the reader a hand with handling other academic areas other than English literature. This finding was achieved via action research carried out during the administration of this research by the researcher. This as researches have also highlighted would lead to a better training of the learners' directly. Additionally, provision of this sort of instruction via literature-based approaches would enable us to offer our learners intercultural communicative competence. This is because "Intercultural communicative competence (ICC) requires some qualifications such as skills, knowledge, attitudes, and awareness". As Christenbury [41 cited in 42] has indicated "through the study of literature, students acquire human approaches to examining thoughts and actions" the teacher is to be "a fellow reader and questioner" who "encourages the pupils to create the meaning themselves and to explore multiple interpretations" [42]. This type of activity serves the same purpose like what Reader Response theory of literature teaching and interpretation serves which has been appreciated as a highly updated and recent approach in reading skill training and literature analysis. Such activities enable the students to enhance their "their cognitive effectiveness in terms of reading comprehension". [43] The application and deployment of literary materials show that "literary works demands language learners to be able to comprehend literature not merely from its intrinsic features" [44]. As Whitener [45] has come up with, Van highlights that student motivation in the learning process can be directly linked to the material used in class and how the instructor implements those materials, suggesting that these considerations should be at the forefront of any instructor's mind when selecting materials or approaches. What acts as the best bed for the operation of Van's approaches to literature teaching, would rest on the selection of appropriate literary materials like novels, short stories, and the like. It goes without saying that the survey of the impact of different literature teaching methods would be of diverse impact which are worthy of accomplishment.

The above rationale and the related researches done on the line of the application and the impact of literature approaches and literary materials pave the way for the accomplishment of this research as no specific research has been carried out with this special population and this special setting. On this line, the following questions were addressed in this research.

Material and Methods

Research Design & Questions

This study has tried to deal with the quantative analysis and impact of Van's (1) categorization of literature teaching approaches and text appraisal of male and female learners' performance on reading comprehension tests. For this purpose, the following research questions were adopted:

1-Is there any correlation between Van's (1) categorization of literature teaching approaches and learners' performance on reading comprehension tests?

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2-Is there any significant relationship between Van's categorization of literature teaching approaches, gender and learners' performance on reading comprehension tests?
3- Is there any interaction between Van's literature teaching approaches, gender and learners' performance on reading comprehension tests?
For the purpose of collecting data, pre-test and post-test as well as treatment were conducted.

Participants

In this study, a total number of 60 male and 60 female first year academic students of a medical university college, aged 18-24, were selected as the subjects of the study. They were all taking their first year of academic education to become teachers in the future.

Prior to the Fieldwork

At the beginning of the term, the participants' prior knowledge of literature and literary genres as well as their command of reading comprehension skill were surveyed by the instructor as the researcher in this academic setting. A pre-reading test was administered to capture the initial differences between the subjects. As a part of their reading course accredited for four academic credit courses, they were assigned novel, short stories, and plays which were studied in and out of the class and were fully debated over based on Van's categorization of literature teaching approaches in turn respectively.

During the Fieldwork

Van's classification consists of 6 approaches. The first three ones as introduced in the previous sections can be classified under structuralism linguistically and behaviorism psychologically. The second three approaches can be classified as generativist linguistically and cognitivism psychologically. The introduced literature activities and literary genres based on the first three types of Van's Approaches (New Criticism, Structuralism, Stylistics, henceforth N.C.S.S.) were provided for first two male and female experimental groups and they were assigned related activities every Tuesday for 90 minutes during 16 weeks which started in September and ended in December. Van's second three types of approaches (Reader Response, Language-based, Critical Literacy, henceforth RR. L.B. L.L.) were practiced in the second two male and female experimental groups. The third two male and female groups were selected as control groups and their classes were run just based on the main text introduced by the ministry of science and higher education curriculum. In this process, the researcher analyzed the literature teaching approaches and applied them to the selected literary materials to the students. The approaches and their sub procedures and techniques including text analysis, linguistic elements, elements of literary language, students' personal response to the literary texts and the relation of the text to the students' experiences, culture or feelings, brainstorming and summarizing, discussing the literary texts for political, cultural, and social issues were the main activities during these teaching sessions respectively. The researcher involved the learners both orally and in writing in the mentioned activities on the assigned literary materials to come up with the enhancement of their reading comprehension skill. This treatment was carried out alongside the main textbook introduced by the curriculum in the ministry of health education. The control groups missed the administration of literary materials as well as Van's literature teaching approaches.

Results

In this research, a true experimental design including pre and post-test as well as control groups were deployed. The subjects were selected based on stratified random selection. Both groups were run using NCSS and RRLBLL literature teaching approaches. The classes ran for 13 sessions, 80 minutes each for a whole academic term. The pre- and post-reading tests were based on the nationally introduced textbook defined in the ministry of higher education curriculum. The students'

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performance on these tests were compared with each other using SPSS.

Analysis

To determine the impact of treatment and the variables as well as the possible impact they may have on each other and to answer the research questions, the following analyses were carried out.

Table 1. Descriptive Analyses, Mean, SD of Pre-and Post-tests of Control and Experimental Groups

Descriptive Statistics						
Gender	**Method**	**Mean post-test**	**Std. Deviation post-test**	**Mean pre-test**	**Std. Deviation pre-test**	**N**
Male	NCSS	14.50	1.27	9.05	1.87	20
	R. R	16.10	1.48	7.55	2.43	20
	Control	8.95	1.90	7.75	1.86	20
	Total	13.18	3.45	8.12	2.14	60
Female	NCSS	14.80	1.24	9.30	2.17	20
	R. R	17.25	1.51	8.60	2.06	20
	Control	9.30	1.72	7.00	1.29	20
	Total	13.78	3.66	8.30	2.09	60

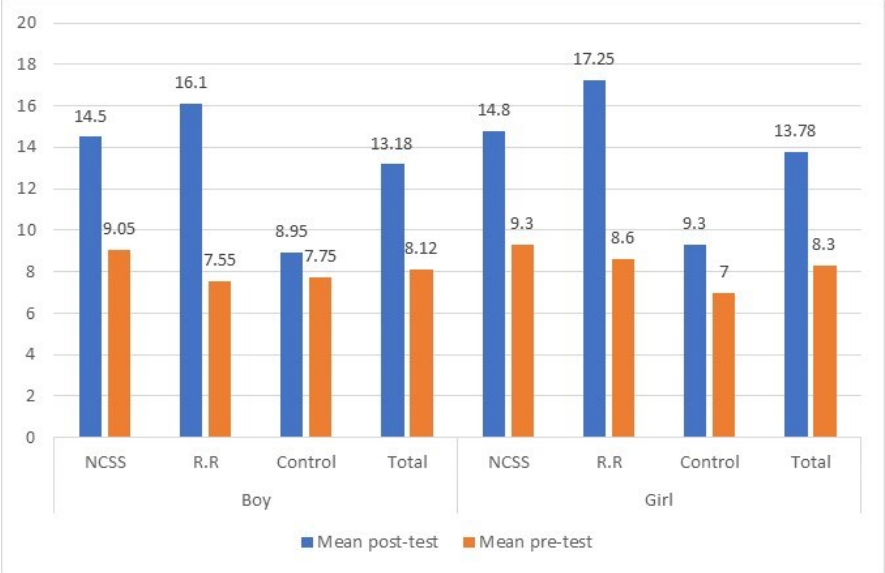


Figure 1. Mean effect of teaching approaches with regard to gender effect on control and experimental groups' performance on reading test

The results reveal that on pre-test, the mean score of male students in NCSS teaching approach was 9.05, in R.R. teaching approach was 7/55, and the control group was 7.75. As for the female students, on the pre-test their mean score in NCSS teaching approach was 9.05, in R.R. teaching approach it was 8.60, and the control group was 7.00.

The results also reveal that the mean score of the performance of male students on the post-test in NCSS teaching approach was 14.50, in R.R. teaching approach it was 16.10 and the mean score of the control group on the post-test was 8.95. The mean score of the of female students on the post-test in NCSS teaching approach was 14.80, in R.R. teaching approach it was 17.25, and the control group mean score was 9.30.

Prior to the investigation of the hypothesis, multi variable covariance analysis is carried out.

Table 2. Levene's Test of Equality of Error Variances: Dependent Variable: post-test

F	df1	df2	Sig.
0.088	5	114	0.99

To survey the equality of variances error, Leven's test was deployed. Leven's indicators revealed that error variances of NCSS and RRLBLL teaching approaches effects male and female students' performance on reading comprehension test.

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Table 3. Tests of Between-Subjects Effects: Dependent Variable: post-test

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1252.92[a]	6	208.82	92.52	0.00
Intercept	899.41	1	899.41	398.49	0.00
Pretest	15.85	1	15.85	7.02	0.00
Gender	9.57	1	9.57	4.24	0.042
Method	1108.48	2	554.24	245.56	0.00
gender * Method	2.49	2	1.24	0.55	0.57
Error	255.04	113	2.25		
Total	23324.00	120			
Corrected Total	1507.96	119			

a. R Squared = .831 (Adjusted R Squared = .822)

Multi variables covariance Analysis of the impact of Van's teaching approaches and gender on students' performance on pre and post-test in control and experimental groups.

As the results show there is a significant difference in linear dependent variables among Van's teaching approaches in experimental groups and the control group on pre-test. /822 of the performance variance of the students' performance on reading test was due to education interference of Van's teaching approaches (NCSS and RRLBLL) which is justifiable on the grounds of the results.

The results reveal that teaching approaches affect the students' performance on reading comprehension test. It also shows that there is a significance difference between NCSS and RRLBLL teaching approach compared with that of the control group performance on reading comprehension test.

The results also indicate that gender affects the student's performance on reading test and there is a significant difference between the male and female students' performance on reading test.

Table 4. Mean Comparison of gender Effect of students on posttest experimental and control groups using Tukey test.

Gender (I)		Mean Difference (I-J)	Std. Error	Sig. [a]	95% Confidence Interval for Difference [a]	
					Lower Bound	Upper Bound
Boy	Girl	-0.566*	0.275	0.042	-1.110	-0.022
Girl	Boy	0.566*	0.275	0.042	0.022	1.110

Table 5:Post-Hoc Test Results for Mean Differences Between Teaching Methods

(I) Method	(J) Method	Mean Difference (I-J)	Std. Error	Sig.a	95% Confidence Interval for Difference a
					Lower Bound
NCSS	R.R	-2.23*	.34	.00	-2.91
	Control	5.18*	.35	.00	4.47
R.R	NCSS	2.22*	.34	.00	1.54
	Control	7.48*	.34	.00	6.74
Control	NCSS	-5.18*	.35	.00	-5.89
	R.R	-7.41*	.340	.00	-8.09

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The results show that there is a significant difference between male and female students' performance on reading tests. Female students outperformed male students on reading comprehension test. Mean Score of male students was 13.201 and female students was 13.466. As the data show, the difference is not that much high but it confirms the better function of literature approaches with the female groups. NCSS teaching approach groups' mean was 14.468, RRLBLL mean score was16.700, and the control group mean score was 9.282.

The study involved 120 medical students (60 males, 60 females) randomly assigned to experimental groups (NCSS and RRLBLL approaches) and control groups. All participants completed pre-tests and post-tests, yielding a 100% response rate with no attrition. Descriptive statistics for pre-test and post-test scores by gender and teaching approach are presented in Table 1. The pre-test scores indicated comparable baseline reading comprehension across groups, with male students showing mean scores of 9.05 (NCSS), 7.55 (RRLBLL), and 7.75 (Control), while female students scored 9.30 (NCSS), 8.60 (RRLBLL), and 7.00 (Control).

Post-test results revealed significant improvements in experimental groups compared to controls (Graph 1). Male students in the NCSS group achieved a mean post-test score of 14.50 (SD=1.27), while those in the RRLBLL group scored 16.10 (SD=1.48). Female students demonstrated higher performance, with NCSS and RRLBLL groups scoring 14.80 (SD=1.24) and 17.25 (SD=1.51), respectively. Control groups showed minimal improvement, with males scoring 8.95 (SD=1.90) and females 9.30 (SD=1.72).

Levene's test confirmed homogeneity of error variances across groups ($F=0.088$, $p=0.99$), validating the ANCOVA assumptions (Table 2). The ANCOVA results (Table 3) indicated that the covariate (pre-test score) significantly influenced post-test performance ($F=7.02$, $p<0.001$). Both main effects were significant: teaching approach ($F=245.56$, $p<0.001$) and gender ($F=4.24$, $p=0.042$). However, the interaction between gender and teaching approach was non-significant ($F=0.55$, $p=0.57$), indicating that while both genders benefited from the interventions, the effect of teaching methods was consistent across genders. The model explained 83.1% of the variance in post-test scores (Adjusted $R^2=0.822$).

Post-hoc Tukey tests (Table 4, 5) revealed significant pairwise differences between teaching approaches. The RRLBLL approach ($M=16.70$) outperformed both NCSS ($M=14.47$, $p<0.001$) and control groups ($M=9.28$, $p<0.001$). NCSS also showed superiority over control groups ($p<0.001$). For gender comparisons, female students ($M=13.78$) significantly outperformed males ($M=13.18$, $p=0.042$), though the effect size was modest (mean difference=0.57).

Discussion

The findings of this study reveal significant insights into the efficacy of Van's literature-based teaching approaches in enhancing reading comprehension among medical students, with notable gender-based variations. The data demonstrate that both experimental groups (NCSS and RRLBLL approaches) outperformed the control group, with the RRLBLL approach showing superior effectiveness compared to NCSS. This aligns with contemporary EFL pedagogy emphasizing student-centered, constructivist methodologies that prioritize critical engagement over passive reception of information.

The superior performance of the RRLBLL group (Reader Response, Language-Based, Critical Literacy) warrants particular attention. These approaches, grounded in cognitivism and generativism, foster active meaning construction by connecting texts to learners' personal experiences and sociocultural contexts. The statistically significant difference ($p<0.00$) between RRLBLL and NCSS groups (Table 3) suggests that approaches prioritizing critical thinking and personal resonance are more effective than text-focused, structuralist methods in developing reading

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comprehension. This extends Van's original framework by demonstrating that the psychological orientation of teaching approaches significantly impacts learning outcomes in medical EFL contexts.

The gender differences observed in this study carry important pedagogical implications. Female students consistently outperformed males across all groups (Table 4), with the most pronounced advantage in the RRLBLL approach. This pattern resonates with previous research (Milal et al.; Rianto) indicating female learners' greater engagement with literary texts and more effective use of metacognitive reading strategies. The statistically significant gender effect ($p=0.042$) suggests that female students may benefit more from approaches emphasizing personal response and critical analysis, possibly due to their stronger inclination toward reflective learning and collaborative meaning-making. However, the absence of a significant interaction effect between gender and teaching method ($p=0.57$) indicates that both genders benefited from the interventions, albeit to different degrees.

The ANCOVA results revealing that 82.2% of variance in reading comprehension scores was attributable to the teaching approaches (Table 3) underscore the transformative potential of literature-based instruction in medical education. This substantial effect size suggests that integrating literary materials with appropriate pedagogical approaches can significantly enhance language skills beyond conventional ESP instruction. The finding that both experimental groups surpassed the control group by wide margins (mean differences of 5.18 and 7.41 points) provides compelling evidence for replacing traditional, skills-based approaches with literature-rich methodologies in medical EFL contexts.

These results extend previous scholarship by demonstrating that Van's approaches, particularly RRLBLL, effectively develop not only linguistic competence but also critical thinking skills essential for medical professionals. The success of the RRLBLL approach in fostering inferential and analytical abilities aligns with Regmi's findings on literature's role in developing higher-order cognitive skills. Moreover, the gender differences observed here complement Febriani et al.'s research on approach-specific learning preferences, suggesting that female students may particularly benefit from methodologies emphasizing personal engagement and critical analysis.

Conclusion

This study provides crucial new evidence that Van's humanistic/cognitive teaching approaches (RRLBLL) are significantly more effective than traditional behavioristic methods (NCSS) for improving the reading comprehension of medical students in an EFL context. A key contribution is demonstrating that the psychological orientation of a teaching method—whether humanistic or behavioristic—is a critical factor in learning outcomes. This research fills a notable gap by validating Van's framework specifically within the specialized field of medical education.

Our findings align with previous work by Nuemaihom et al., confirming that integrating literature enhances language proficiency and critical thinking. However, our study introduces a significant variation by pinpointing the superiority of humanistic approaches over structuralist ones. Furthermore, we expand on the research of Shirzadi and Moheimany by showing that gender differences in learning persist and are a vital consideration even within a specialized medical curriculum. This emphasizes the need for gender-responsive pedagogy in designing EFL programs for medical universities.

Acknowledgments

Not declared.

Authorship

All authors jointly developed the concept, designed the review, performed the literature analysis, and wrote and revised the manuscript. All authors approved the final version.

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Conflicts of interest

No potential conflict of interest relevant to this article was reported.

Funding

The authors received no financial support for this article's research, authorship, and publication.

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