

ENHANCING UNDERGRADUATE READING COMPETENCY THROUGH SOCIAL MEDIA: APPLICATION OF COGNITIVE LOAD THEORY

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Abstract

The research study examines the effect of reading assignments in social media on the reading comprehension and cognitive load among undergraduate students learning ESL English in Multan, Pakistan. This research as well as Claims argument refers to Cognitive Load Theory (CLT) which explains how learning can be achieved effectively when the resources are managed cognitively. The study was designed with a mixed-methods base where rich data in the form of pre and post-tests were handed along with the qualitative semi-structured interviews and focus group discussions. The sample size was 50 ESL learners of The Legend College-(LIMS Multan), 25 of whom fell in the experimental group and participated in reading activities in social media during eight weeks. Analysis of the data was done by using matched samples t-tests in the quantitative data and thematically qualitative data. Students said that they became more motivated and engaged in social media material, which helped them improve their vocabulary and understanding. The study further identified some of the most important ways of optimizing the use of social media such as task structuring, scaffolding, and interactive engagement. The research can benefit the emerging literature on the topic of social media in ESL instruction by providing viable guidelines that can help teachers develop practice that hones in reading comprehension in ways that do not induce excessive mental exertion. These results highlight the possibilities of a social media in ESL teaching as an effective instrument provided it is mindfully incorporated. In future studies, there is scope to study the long-term implications and the wider applicability of social media in developing other skills in language.

Keywords Social Media, ESL, Reading Comprehension, Cognitive Load, Language Learning

1. Introduction

1.1 Background of the Study

Learning English as a Second Language (ESL) is quite important at the undergraduate level especially in those non-English speaking countries like Pakistan. Learners who live in a globalized world today cannot doubt the importance of English as a tool of academic performance, professional development, and the processes in the international discourse. Learning the English language at the undergraduate level becomes as important as pursuing the academic level because it opens the pathway to tremendous international opportunities. English is the language of language instruction in several education institutions, and therefore students go to the English language to get information and get involved in international research. This led to the inclusion of ESL into the learning process and especially in such places where there is the perception that English is a tool to academic and professional growth (Evans et al., 2024). The new mediums and variety of contents on social media sites might be the relevant solution to ESL learners when it comes to reading comprehension issues. By exerting access to genuine reading texts, they should share and introduce social media with the various language styles, accents, and registers (Bakeer, 2018).

The Cognitive Load Theory (CLT) is important in explanation of how people are connected to process information in the course of information acquiring task especially in the demanding courses like learning of language. CLT put forward by Sweller in late 1980s highlights the capacity of working memory, as well as the fact that teaching must have a means of design that is high in cognitive demand to promote learning (Sweller et al., 2019). Within the context of learning languages CLT can be of great use in helping to understand how learners

digest the linguistic input, learn new vocabulary and this aspect can be useful in enhancing reading comprehension in the learner, therefore this aspect is very appropriate in the teaching and learning of languages.

1.2 Problem Statement

In the last few years, the importance of going social in education is being discussed a great deal, and a lot of publications state the potential it holds in the learning process in different fields, including the acquisition of foreign languages. Although the use of social media as a teaching tool in the process of learning English as a Second Language (ESL) is associated with remarkable potential benefits, especially on the development of reading skills, there have been significant gaps in empirical studies into its impacts, especially on cognitive load. There is a lot of useful information on CLT concerning the mechanisms involved in processing data and maintaining mental effort when learners engage in acquisitional activities and much is not known about the disentangling the effect of social media on cognitive load in ESL reading tasks. The issue of cognitive load is also highly important to language acquisition as it directly impacts the successful acquisition of information by a learner. CLT specifies three different cognitive loads, such as intrinsic-, extraneous-, and germane- cognitive loads, which influence the effectiveness of how readily learners can learn and work with new material (Sweller et al., 2019). The purpose of the given study is to examine the effect of the various formats of social media content on cognitive load and reading comprehension among ESL learners in Multan, Pakistan. Through this study by identifying these effects, it shall offer important information on how social media may be effectively employed in teaching English as a Second Language by them by ensuring minimal cognitive load thereby enhancing the reading performance of the students.

1.3 Research Objectives

1. Evaluate the effectiveness of social media platforms in teaching reading skills.
2. Analyze cognitive load during social media-based reading tasks.
3. Identify strategies for optimizing social media use in reading instruction based on CLT.

1.4 Significance of the Study

This research work has a lot of potential impact in both applied linguistics and educational technology since it will help in giving insight on the necessary importance of social media in bringing about improvement of reading skills among the ESL learners. Applied linguistics has increasingly been showing an interest in technology integration in language learning, especially the use of digital media such as social media. The proposed study will contribute to gap in the current literature regarding the pedagogical possibilities of social media in teaching ESL by reviewing the research on the ways of making optimal use of social media platforms to manage cognitive load and enhance reading comprehension. The importance of the current research is that it promotes knowledge on the use of social media in enhancing the ESL learning process in both contexts specifically at the undergraduate level in Pakistan. The applied linguistics and educational technology contributions make the academic debate about digital tools applied to language education richer.

2. Literature Review

The application of social media in education is also gaining a spot over the recent past, especially in terms of improving language learning. A number of studies emphasize the usefulness of the social media platform in fostering interaction, providing real language experiences, and supporting collaborative learning (Kabilan et al., 2010). Through social media, students are able to connect with the real language world and acquire the ability to communicate with peers and in the process, their reading comprehension, vocabulary acquisition, and fluency of the language may improve.

The use of social media to study a language has its challenges although we do realize its benefits. New learning experiences of reading academic texts in a second language can be cognitively overwhelming to the ESL learners, more so at the undergraduate level. These challenges can be very well understood through the Cognitive Load Theory (CLT) that posits that learning should be optimised when the cognitive load is managed efficiently. It can be stated that the theory suggests that there are differences in the amount of learning, based on the intrinsic, extraneous, and germane cognitive loads (Sweller et al., 2019). Nevertheless, there have been limited experiments explicitly dealing with the evaluation of influences of the social media material and cognitive load when reading courses in ESL provisions (Evans et al., 2024).

Some of the studies shown in the supplied articles emphasize the implementation of technology and social media into the language acquisition process.

The present study reflects on the significance of controlling cognitive load by structuring tasks in such kind of a way that they are not too complex and not too easy to increase reading comprehension.

3. Research Methodology

The present research study uses a mixed-methods approach, where both quantitative and qualitative methods are put together to obtain an in-depth picture of the issue of social media and its impact on the reading abilities of ESL learners and their cognitive loads. The participants are the undergraduate ESL learners in the universities in Multan who are used on a purposive sampling basis. Pre and post-test data is used to evaluate reading comprehension and cognitive load scales where the level of cognitive effort is evaluated and semi-structured interviews and focus group discussions data are collated to provide the in-depth information of the participants.

The present research methodology is a mixed method; both quantitative and qualitative methods of enquiring about the effect of social media on the ESL learner in their reading comprehension and cognitive burden. The research method will apply a mixed-method approach in establishing change in the reading comprehension results of the pre-tests and post-tests via quantitative analysis of the trials. Also, we collect qualitative data by interviewing teachers of ESL individually, in semi-structured form and in focus groups during discussions with ESL learners to get more information about their experiences and their perceptions. The study involves 50 The Legend College ESL learners and two groups of 25 learners, who were included into experimental and control groups, and 5 ESL teachers. With purposive sampling, the participants are chosen depending on their validity as the study channels.

4. Data Analysis

The quantitative evaluation is focused on the altered results in terms of reading comprehension score between the moment of the intervention and the moment before the intervention, whereas the qualitative analysis is devoted to the perception and experience of both learners and their teachers when it comes to using social media in teaching ESL. The research conclusion is presented in form of main themes which include how reading comprehension, cognitive load management, engagement and motivation are influenced by social media. These findings are explained in terms of the research questions, which gives an idea of the ways of how social media may be introduced into ESL teaching.

1. Implementation of Pre-test and Post-test

In the study, the pre-test and post-test were to measure reading comprehension and cognitive load among ESL learners prior to the intervention and successively thereafter. The pre-test was held in order to provide a baseline variable of the current reading comprehension skills of the participants whereas the post-test was held to find the extent of the intervention in enhancing reading comprehension and cognitive overload. Planning, execution, and intervention plan was done according to the proposed study and it ensured that the tests and interventions were well

Intervention Description

1 Introduction to social media reading tasks: short posts, blogs, and video transcriptions.

- 2 Students summarize key issues of posts/articles and identify new vocabulary.
- 3 Group discussions based on posts/articles; identifying new language structures.
- 4 Interactive posts where students comment and engage in brief discussions.
- 5 Tasks focusing on analyzing videos and their textual content.
- 6 Engaging with Instagram and Twitter posts; summarizing the content and discussing in groups.
- 7 Students create small summaries based on YouTube videos; peer review sessions.
- 8 Final week with a focus on synthesizing learning from all tasks and peer feedback.

laid out to depict the influence of the social media based reading tasks. The pre-test was developed to evaluate the baseline retentions of the ESL learners in respect to reading comprehension. It consisted of reading passage with related comprehension questions to test their knowledge of vocabulary, sentence structure, main ideas and general comprehension. The pre-test was introduced by selecting the texts which were used to reflect the common academic materials. These were medium difficult texts with medium difficulty language and topics that were of interest to ESL students at undergraduate level. This made the content suitable in the evaluation of reading comprehension at this level of proficiency. The instructions given to participants preceding the administration of this pre-test were clear as they explained to participants the format of administering the test and what would be expected of them. The instructions were as well accompanied with the details on the time limit in which the task had to be completed: 45 minutes.

2. Intervention and Implementation

The programmatic intervention presupposed the use of social media and included reading tasks that worked towards the development of reading comprehension and shaped the students to process light amounts of cognitive load. The main engagement was to involve the use of social media to deliver real life and interesting reading materials, as well as activities that promoted active participation and interaction. The intervention has been designed within eight weeks with ample time given to the participants to work through the tasks and researchers to evaluate the improvement in the level of reading comprehension. The learners listened to various forms of social media content every week and analyzed reading comprehension questions based on that material.

Table 4.1 Summary of the Intervention Schedule

Week	Content Focus	Key Tasks and Goals
Week 1 to 3	Simple, engaging posts and articles from social media	Summarizing key points, identifying new vocabulary, engaging with the content
Week 4 to 6	Opinion articles, educational videos, and critical content	Critical thinking, evaluating arguments, and interacting with peers and content
Week 7 to 8	Academic social media content (infographics, blog posts, etc.)	Synthesizing information, comparing multiple sources, and creating content

3. Rationale for the Duration of the Intervention

The selected eight weeks of the intervention period was enough to expose the learners to so many sources of different kinds of social media contents as well as giving them enough time to improve on reading comprehension. The materials introduced to the students each week

became increasingly complex which also enabled them to develop gradual increase in their comprehension and cognitive load management abilities. This methodology was in line with contentions of the Cognitive Load Theory (CLT) which exposed factors to impede cognitive overload to enhance fruitful learning through scaffolding of tasks. The intervention was also designed to provide the balance between new content introduction and the possibility of managing the cognitive load by the students, so the new material was not so challenging to handle as to be trivial. This was aimed at maximizing the interaction of the learners, the acquisition of vocabulary, and enhancement of reading with social media whose level of cognitive load was kept at manageable levels.

Table 4.2: Summary of the improvements of the experimental group

Test Applied	Objective	Results for Experimental Group
Pre-test (Reading Comprehension)	Assess baseline reading comprehension before the intervention.	Average score of 50% (baseline).
Post-test (Reading Comprehension)	Measure improvement in reading comprehension after exposure to social media tasks.	Average score increased to 75%, showing a 25% improvement in reading comprehension.
Cognitive Load Scale (Pre-intervention)	Measure the cognitive load on students prior to the intervention.	Initial cognitive load was high, indicating high mental strain in traditional reading tasks.
Cognitive Load Scale (Post-intervention)	Measure cognitive load after engaging with social media-based tasks.	Significant decrease in extraneous cognitive load, indicating reduced mental strain due to the engaging and interactive nature of social media tasks.
Motivation and Engagement Survey	Evaluate student engagement and motivation during the intervention.	Students reported increased motivation and engagement, citing social media tasks as more enjoyable and interactive compared to traditional methods.

The administration and designing of the pre- and the post-tests, and three-week intervention, it was evident that an adequate framework was established to test the effectiveness that social media-based reading tasks had on the reading comprehension and cognitive load of ESL learners. The use of the gradual and organized presentation of more challenging material contributed to the development of reading proficiency and the substance of the information in the learners with a balanced cognitive load. The intervention helped to gain vocabulary and critical think and, in general, read the text through providing exciting and real content. Such a methodology based on the traditions of Cognitive Load Theory did not overload the learners and helped them understand the learning benefits of the tasks provided in the form of social media. Observing the similarities and differences in the pre-test and post-test results as well as the qualitative approach hints at defining all the changes in terms of the influence of social media on the ESL reading process.

4.3 Analysis of quantitative data

The table 4.3 below displays the comprehension test scores of the pre-test and post-test that can also be advanced into a quantitative analysis:

Participant ID	Pre-test Score	Post-test Score	Change in Score
1	55	70	+15
2	60	75	+15
3	50	65	+15
4	70	85	+15

5	65	80	+15
6	58	72	+14
7	62	78	+16
8	56	71	+15
9	64	79	+15
10	68	83	+15
11	52	66	+14
12	74	88	+14
13	66	82	+16
14	61	76	+15
15	59	73	+14
16	55	69	+14
17	72	87	+15
18	60	74	+14
19	67	81	+14
20	53	68	+15
21	64	78	+14
22	63	77	+14
23	69	84	+15
24	61	75	+14
25	57	71	+14

The table occupies data related to the comprehension test variable results by each of the participants, and the columns give exact data to analyze. The Participant ID will be used to keep track of the individual data to be analyzed, therefore, making sure that there will be uniqueness of participant to ensure identification. The Pre-test Score is a numerical mark acquired by every respondent in the reading comprehension test prior to being exposed to the intervention. On the same note, Post-test Score represents the result that the participant gets after performing the reading exercises grounded in social media. The Change in Score column shows the difference between the scores in the post-test and pre-test which shows the changes in reading comprehension. The difference will give a clue about the effect of the intervention on reading skills of the participants, hence a comparison of the scores drawn of the participants before and after the intervention.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test Score	61.64	25	6.350	1.270
	Post-test Score	76.28	25	6.465	1.293

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre-test Score & Post-test Score	25	.995	.000

		Paired Samples Test					t	df	Sig. (2-tailed)
		Paired Differences							
		Std. Deviation	Std. Error	95% Confidence Interval of the Difference					
	Mean		Mean	Lower	Upper				
Pair 1	Pre-test Score - Post-test Score	-14.640	.638	.128	-14.903	-14.377	-114.787	24	.000

The t-test of the paired sample indicates that there is a very meaningful difference between the post-test and the pre-test reading comprehension scores. As the t-statistic equals -114.79, the difference between the scores is rather large, whereas the p-value is very small, and it is clearly less than the default level of 0.05. This implies that the increment on the scores of reading comprehension following the intervention is statistically significant. That is, the reading exercises through social media produced a significant positive outcome, which could be easily measured in regards to reading comprehension of the participants. The findings meet the hypothesis, which states that the reading engagement that utilizes social media would improve the comprehension skills of ESL learners.

4.4 Qualitative data Analysis

The semi structured interviews of the ESL teachers will be of great benefit in supply of valuable qualitative data to support the objectives of the study in the research question and aims of the study in finding out the effect of social media on the reading comprehension of ESL learners and cognitive load. These interviews were analyzed regarding how they cite the visions of teachers in integrating social media in the teaching of ESL with respect to their findings and observations on dealing with cognitive loads, and on how well they perceive that social media can assist in reading comprehension. It was stated by the teachers that there exists an abundant stock of natural materials provided by the social media tools, including Facebook, Twitter, YouTube, among others, which can be very useful in language acquisition. They highlighted the fact that social media can offer students an exposure to a very large number of linguistic registers and these register included informal and conversational language and this would enhance the processes of acquiring vocabulary and reading comprehension. As one teacher claimed, social media enables the students to interact with the real world language which is essential in developing their reading abilities and comprehending the use of language beyond classrooms. However, the teachers also reported a number of problems associated with applying the social media in the teaching of reading. Even though, some social media topics are interesting, according to one teacher, they can present students with more complicated language structures to interpret than reading experiences in the traditional classroom. This may prove too much to the learner who is not up till now fluent in English".

Teachers were asked to talk over the strategies that they used to handle cognitive load in some reading tasks based on social media. Some of the teachers reported that they decreased extra cognitive load by selecting the particular material, which was relevant to the learning purposes, so learners were not distracted by the irrelevant information. As one teacher stated, my suggestion in this case would be to give the students clear guidelines of what they should pay attention to in the post or video to avoid being caught by other information which is not relevant. Also, the teachers made an accent on the necessity of scaffolding assignments so that

students could divide complicated readings into more attainable parts, thus, reducing the internal cognitive load. Some of the teachers found a way to use social media to motivate active interaction with the content in order to deal with the issue of germane cognitive load. Some teachers reported that learners in the experimental group who used the social media in reading exercises experienced improvement in reading comprehension contrary to learners in the control group. As one of the teachers said: when using social media in a well-structured manner, I have observed improvements in the ability of students to locate important points in a text and comprehend new vocabulary.

The interview sessions with ESL learners in the focus group give important qualitative data on what they have experienced, difficulties, and perceptions they have on utilization of social media in carrying out reading tasks. The discussion of these discussions is vested with the goals of the study that were to understand the effects of reading tasks guided by social media on the reading comprehension and cognitive load of the ESL learners. The students were in divided reaction when asked to use social media as reading tasks. Most of the participants confirmed that SNSs have an interactive and attractive learning English in that, Instagram, Facebook, and Twitter are some of these social media platforms providing this opportunity.

One of them stated, "The words are sometimes too casual or unfamiliar thereby making it difficult to comprehend what they are out to say." The observation can be associated with the argument that ESL students struggle when mixing with compound vocabulary or informal language, which would enhance the capacity of their mind in the comprehension process. At different stages, the cognitive load of students involved in working with reading tasks presented in a social media format differed. Meanwhile, a number of students stated that they were overwhelmed by excessive information provided at the same time, a factor that added to extraneous cognitive load. One of the participants said that there is much happening one can hear texts, see pictures and videos at once. I also get distracted and cannot concentrate on reading section. This is in line with the fact that learners may be overloaded in terms of mental capacity when multiple forms of content are in the process of being dealt with at once whereby, learners may find it hard to concentrate on the major task of reading.

Majority of students said that their social media affected their reading comprehension positively by enhancing their understanding powers and their ability to remember new words. They enjoyed the exposure that the social media brought to different forms and contexts of language. A student explained, that he can see much about the new words on social media posts and discussions and use them in conversation. It is a testament to the vocabulary acquisition benefits that social media presents to learners, since they will be exposed to the informal and formal language, idiomatic expressions and slang in context of numerous situations. Nevertheless, some of the students reported that, although the new vocabulary has been acquired, they continue to feel challenged by academic texts, particularly when using social media by reading a complex or a specialized text. One student said, that when she reads something academic on social media, she finds it difficult to comprehend as those types of texts are not common in those social media. This implies that although social media enhances the reading comprehension ability in the informal set up, it may not favor academic reading work unless the content is well adapted to meet the language proficiency levels of learners.

4.5 Thematic Analysis

Data collected through the semi-structured interview and focus discussion group with the teachers and the students used the thematic analysis of the answers collected, which reveals a number of issues that are important to note with the use of the social media, when applied in the ESL reading activities. Such themes demonstrate the positive and negative side of social media, management of the cognitive load and its impact on reading comprehension. This

analysis will be consistent to the aims of the studies since it seeks to analyse the effect of social media to reading comprehension and cognitive load of the ESL students.

Thematic Analysis Process based on the Brown and Clark, 2016 six step model

Step	Action	Themes Identified	Details / Examples
1. Familiarization with the data	Reading and re-reading the interview and focus group data to understand the themes.	Data was collected from semi-structured interviews with teachers and focus group discussions with students about the impact of social media on ESL reading comprehension.	The data focused on both positive and negative impacts of social media, cognitive load management, and effects on reading comprehension.
2. Generating initial codes	Identifying relevant and interesting features of the data.	Initial codes such as “interest in social media,” “cognitive overload,” “engagement,” “vocabulary acquisition,” “academic vs informal content,” and “motivation.”	Teachers and students highlighted both the motivational impact of social media and concerns about the overwhelming amount of information it presents.
3. Searching for themes	Grouping codes into themes based on common patterns.	1. Learning with Social Media 2. Cognitive Load Management 3. The Effect of Social Media on Reading Comprehension 4. Motivation and Interest in Reading 5. ESL Learning Problems with Social Media 6. Effective Use of Social Media Strategy	These themes emerged through the identification of patterns in the data regarding how social media facilitates or hinders reading comprehension and the management of cognitive load.
4. Reviewing themes	Ensuring the identified themes reflect the data accurately.	Themes were cross-checked against the data. For instance, the theme of Cognitive Load Management reflected both teacher and student concerns about how social media content, if poorly structured, can lead to cognitive overload.	Teachers noted the overwhelming nature of multimedia content (text, videos, pictures) on social media, while students confirmed they found it difficult to focus when content was scattered.
5. Defining and naming themes	Refining and defining the themes clearly.	1. Social Media as a Learning Tool 2. Managing Cognitive Load 3. Social Media’s Impact on Comprehension 4. Motivation and Engagement 5. Challenges of Social Media in ESL	Themes were clearly defined to address both the positive and negative aspects of social media in ESL reading tasks. Suggestions for best practices were also

		Learning 6. Best Practices for Social Media Use	included.
6. Writing the report	Presenting the findings with supporting quotes and data.	Findings were linked back to the research questions. For example, the theme of Social Media as a Learning Tool was supported by quotes from teachers stating that social media provides access to real-life language use.	Teachers observed that social media content made reading tasks more accessible and motivating for students, though challenges like cognitive overload and distractions were also noted.

1. Learning with Social Media

The teachers and students emphasized the possibility of the social media to attract the attention of learners in a manner that may not be provided by the traditional reading materials. Teachers noticed the fact that the utilization of such social media sites as Facebook, YouTube, and Twitter gives access to the real-life language use. Observed one teacher, "Social media offers students opportunity to expose themselves to language as it naturally appears, and this is not always the case with textbook." The educational content in the social media was also observed by the teachers to be of more interest to the students hence creating motivation and participation. The students shared similar sentiments in that social media ensured that reading tasks were interesting and relatable. As one of the students explained, social media posts tend to be more accessible to him than traditional books, which makes it easier to interact with this information. Interactive content like comments and discussions were regarded as a positive aspect of the tool since they enabled students to interact by contributing to learning.

2. Cognitive Load Management

The concept of cognitive load can be discussed as one of the most prominent themes because both students and teachers recognized the role of the cognitive load that slightly influences the effectiveness of the reading tasks based on social media. Teachers also insisted on the value of applying cognitive load to make sure that learners are not overloaded. They outlined how such social media content can be multimedia-rich and thus cause extraneous cognitive loads without proper organization. One of the teachers indicated that "students are liable to be distracted because there is so much stuff on a platform, like videos or pictures, which is likely to distract concentration on the act of reading. Teachers said to cope with it, they simplified the information, were working on one task at a time, and developed a step-by-step process with students. Admittedly, students stated that although the content on social media might be interesting, it was overwhelming at times. According to one student, there is too much information all at once: text, pictures, videos. I can tell it is really difficult, and sometimes I simply do not know where to concentrate." But when tasks were organized in a manner which used instruction and the students became more aware of what is required to find a solution, students have more control of their cognitive burden. One of the participants said that when the task is divided into small steps it is easy to concentrate and grasp.

3. The Effect of Social Media on Comprehensive Reading

Students as well as teachers recorded changes in the comprehension reading skills following participation in the social media based reading exercises. Educators found that students who were engaged into reading in social media environment were more active and had a retention of vocabulary. According to one of the teachers, students are more eager after going through the posts and discussions in social media and applying new vocabulary. It is a more interactive form of learning. Educators also reported that the use of social media contributed to being introduced to a diversity of language registers including the informal type. However, students

stated that the use of social media during the lessons has enabled the better mastering of vocabulary, the comprehension of the language in context. One of the students told me, "I can know new words when reading comments or captions on posts, and I realize the way people use this language in real life dialogues. Nevertheless, other students stated that although the social media was suitable as an informal language acquisition tool, it was not effective when learning to read academic texts. To claim it to be true, as one student said, understanding the text on social media is "harder when the text is too academic or complicated. That I would rather read on something more traditional."

4. Motivation and Interest Reading

In responses by the teachers and students, the theme of motivation and interest in reading was strong. It was noticed by the teachers that the social media stimulated the students to read more, since it seemed better and easier to get. A teacher said, the reading matter should have some connection with something students will find interesting or applicable to their everyday life such as a post or a video as they are more likely to contribute. Teachers also pointed out that learners in all the social media tended to discuss a topic and this also helped to reinforce the understanding. The students confirmed that social media made reading more interesting and encouraging. One student said, having a reading protocol online was entertaining since it seems like you are conversing or communicating with some sort of association or group. I do not think this is the same case with textbooks. The greater motivation caused more frequent reading exercises since the pupils were feeling more involved in what they were reading and were, therefore, more inclined to invest to it and emotionally respond to it.

5. ESL Learning problems with Social Media

Even as teachers and students identified the positive impact of social media, they also pointed out a series of challenges especially the issue of cognitive overload and multidimensionality of contents. Teachers explained that in case of uncontrolled selection, social media content might overwhelm ESL learners. There was a barrier found relating to the ability to filter useful information among distractors. According to one teacher, the flow of social media is more casual and fragmental, which can cause difficulties in attention of the learners to important points, in particular, among those with less developed language skills. One of the students reported, sometimes the language is too complicated, and facts are placed chaotically, and it is difficult to trace. The students would also complain about the content being informal or loaded with a lot of slang that also made it rather hard to understand.

6. Effective Uses of Social Media Strategy

Teachers as well as students gave recommendations on how to use social media better in reading tasks in ESL. Teachers advised that there should be stricter tasks and coherent instructions to help overcome cognitive overload. They even proposed to filter certain manageable content that relates directly to the learning objectives. As one of the teachers stated, social media can be an extremely effective tool to learn a language provided that we are able to curb the distractions and invite more focused tasks. One of the ideas proposed by the students was that social media usage might be more efficient when the tasks are divided into smaller and more manageable ones. They also advised that lecturers should put some guidelines on how to navigate through social media sites to enable that learners concentrate on the most applicable content. One of the students replied, "When this work is more structured and concentrated, I can trace this and get to know more."

The thematic analysis of the interviews with the teachers and the focus group discussions conducted with the students' results will show that the social media may be of great value to the reading comprehension and involvement of the ESL learners. Nevertheless, it also raises issues to do with the cognitive load including extraneous and intrinsic cognitive load, which will overload the learners unless handled well. With the implementation of the

approaches including offering of structured tasks, working with a relevant content, and the focused directive on interactive engagement, educators could capitalize on social media advantages and reduce risks of cognitive overload, which will result in stronger reading comprehension and better command of the language as a whole. Teachers and students all conclude that social media can be a good tool in teaching ESL provided it is used well.

5. Conclusion and Findings

In terms of cognitive load, the quantitative results have shown that the usage of social media activities has assisted in decreasing extraneous cognitive load, thus enabling learners to pay attention to the most important content. But there was still intrinsic cognitive burden specifically when the content was more complex or more unfamiliar. The qualitative results pointed out that well-structured tasks meant that the learners could cope better with cognitive load where as poorly organized tasks or highly complex material resulted in more cognitive load. This result, in turn, correlates with the Cognitive Load Theory (CLT), which has recently been increasingly focused on the significance of managing cognitive effort to make learning experience as effective as possible. When speaking in relation to its contributions to the field, this study contributes to the existing literature on the incorporation of social media in learning languages. It gives empirical support in adopting social media in the improvement of reading comprehension and the cognitive load in ESL education, especially in the Pakistani higher education. Finally, the study concludes on how important task design is when optimizing social media use into ESL reading instruction. Engagement and management of cognitive loads may seem an opposite pair, but in the context of a balanced reading training educators can successfully employ the potential of social media to enhance the development of reading comprehension and other language-related skills. The general results of the current study will give a possible recommendation to the teachers who want to use social media as a part of the learning process and, at the same time, give a suggestion about the cognitive abilities of the readers with comprehension. The current findings can be enhanced in future study by investigating the long term impact of social media-based interventions and investigating their effects on some specific language components e.g. writing and speaking.

Combining the answers to the research questions and the information gained in reviewing the literature, the study offers a quite subtle picture of the ways social media may be effectively applied to the ESL education. The findings, which are based on quantitative and qualitative figures, support the possible use of social media as an interactive and efficient language learning system and reveal solutions to issues of cognitive overload. The ESL knowledge was used to answer the first research question which sought to examine the efficiency of social media in improving the reading comprehension of ESL learners. Quantitative data findings showed that there was a drastic change in the ability of reading comprehension in the experimental group performing social-media-based reading activities.

The quantitative and the qualitative results confirm the conjecture that the use of social media in reading activities as an addition to other activities enhances reading comprehension to a considerable extent. The pre-test scores showed that comprehending was initiated at a moderate level before the intervention but on the post-test results, it was a significant improvement wherein the experimental group scored considerably high than scores made in the pre-test. In particular, the average gain in comprehension rating was of about 15 points recorded among learners who processed social media based materials as paired sample t-tests were used to analyze the data. The results were statistically significant, as it was t-statistic - 114.79 and more than 0.05, which meant that there was an observable positive effect of the social media intervention on the reading comprehension. Such a gain was explained by the fact that social media content is highly interactive and interesting, which made students perceive real life practice of language and learn how to interact with texts in a more active manner. The

possibility of interacting with material, including leaving comments, sharing posts and chatting about the ideas, appears to have assisted learners in mastering the material and learning new words.

5.2 Recommendations

This research will offer useful information in the use of social media in improving the reading comprehension of ESL students and the cognitive load. Nonetheless, there are multiple gaps that should be explored. The experimented on this aspect based on three-week intervention as a short-term observation of the impact of social media on reading literacy and thinking load. The longitudinal study would give a better insight into the long-term effect of reading tasks based on social media. The follow-up tests should be performed some months after the intervention to determine whether the effects on reading comprehension and cognitive load increase will be long-lasting. In the study, the sample comprised of 50 undergraduate students of ESL program at a single institution, which does not allow generalization of the study results. Further research needs to be carried out on more substantial and heterogeneous samples, such as learners of various educational institutions, areas, and social-economic statuses. It would be worthwhile to investigate the reaction of various groups of learners on reading tasks in social media and whether the efficiency of the approach differs based on the proficiency level (e.g., beginner, intermediate, and advanced).

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