

The Analysis of Cohesive links and Content, Interactional Quality and Objective Measures Based on the Conceptual Framework of Nandi

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Abstract

The aim of this paper is to highlight the importance of cohesion in producing an interactive and meaningful discourse in harmony with the content, interactional quality and objective measure of the discussion forums in online discussion forums which contribute to knowledge in the course content which includes ideas and experiences. Discussion transcripts of five weeks of an online threaded discussion forum from a course entitled “Shaping the Way We Teach English, the Landscape of English Language Teaching” were taken and analyzed. The analysis of cohesive links was done based on the discourse analysis technique and the discussions are analyzed based on the content, interactional quality based on the framework of Nandi (2009). The results of the analysis revealed that the discussions which are long and deep have more usage of the cohesive links than surface discussions or replies. The analysis also highlights that the discussions are likely to fulfill the criteria proposed by Nandi and sharing experiences and ideas & the current practices that are practiced by different people in different places are mainly the content. The posts promote a deeper and more meaningful angle to the course content.

Keywords: Cohesion, content, discourse, Nandi Framework, online discussion

1. Introduction

Online learning systems have been described as web based learning environments consisting of digitally formatted content resources via the use of the World Wide Web and communication devices to provide communication link between the instructor and students where they can actively interact (Piguet & Peraya, 2000). Technology is the infrastructure, the bones of distance education, (Bates, 2005, p.3). As technology becomes the normal and expected means of communication and education, Bruce and Hogan (1998), point out, important changes occur in expectations about the abilities of the students have to acquire to be successful language users. Chappelle (2003) says that, “the bond between technology and language use in the modern world should prompt all language professionals to reflect on the ways in which technology is changing the profession of English language teaching in particular and applied linguistics as a whole.” Widdowson (1983:10) opinion is that Clark (1983) claims that technologies are merely vehicles that deliver instruction and do not themselves influence student achievement. Colleges also have emphasized the creation of fully online degree programs, and 62 percent of the schools surveyed now award degrees entirely through distance education.

Salmon (2005) contends that online discussion promotes active thinking and interaction with others. Levenburg and Major (2000) suggest that assessing participation (a) recognizes students' workload and time commitment with respect to online discussions and (b) encourages students to participate in required learning activities associated with the discussions. Finally, a number of researchers agree that assessment criteria can be used as a guide to students for learning outcomes and expected quality of thinking (Celentin, 2007; Ho, 2002; Kneser, Pilkington, & Treasure-Jones, 2001; McKenzie & Murphy, 2000) (cited in Guy and Wishart, 2009). Mazzolini and Maddison (2007) classified the instructor participation into four categories: 1. asking questions; 2. answering the questions posted by the students; 3. Combination of answer and follow up questions; and 4. other administrative or housekeeping related posts.

2. Theoretical Framework

The Internet and communication mediated by this electronic information network have gradually introduced their own text formats and, consequently, new genres. According to Vogel, Online discussions are referred to as Internet multi-party conversations, can be realised either in the form of synchronous groups taking place in near real time or in the form of asynchronous groups (or asynchronous discussion or chat) (cf. Herring 2008: 3), which happen in postponed time. The typical properties of discussion groups are non-linear interaction, importance of personal and idiosyncratic features (Crystal 2001) and lack of most fundamental properties of conversation, such as turn-taking, adjacency pairs, floor Taking (Herring 1999). One of the most common means of asynchronous communication is the “threaded” discussion that Hewitt (2005, p. 568) defines as “a hierarchically organized collection of notes in which all notes but one (the note that started the thread is written as ‘replies’ to earlier notes.” Because of its hierarchical structure, threading allows students to trace conversational chains of messages that relate to the original subject (cited in Guy and Wishart, 2009). Interactive Written Discourse (IWD) in synchronous online dialogues, Ferrara, Brunner, and Whittmore (1991) define IWD as a newly emerging register with characteristics of both written and spoken language. Although synchronous and asynchronous online interaction differ in significant ways (Lapadat, 2002), both are newly emerging forms of written discursive interaction, and both offer opportunities to observe how participants implement discursive devices in a new communicative context and go about establishing conventions of use.

Conceptual Framework

Therefore, this paper looks into the discourse of online discussion forums from the angle of lexical cohesion, focusing cohesive ties identifiable in the texts of the chosen genre. "Interaction" has been recognized as the most significant attribute in any online system or course. The importance of interactivity is highlighted by several researchers who have conducted research in online learning systems (Maor & Volet, 2007; Al-Mahmood & McLoughlin, 2004; Sharples, 2000). Without interactivity, a discussion forum simply becomes a bulletin board for posting messages and information (Hamilton, Chang and Balbo, 2012, p.684). Cohesion is a semantic concept, defined as "relations of meaning that exist within the text, and that define it as a text." (Halliday and Hasan 1976: 5). Cohesion works within as well as outside sentence boundaries, following usually the natural order of distribution of information from the given to the new. As a typical property of any text, Halliday and Hasan claimed that, "every sentence except the first exhibits some form of cohesion with a preceding sentence, usually with the one immediately preceding. In other words, every sentence contains at least one anaphoric tie connecting it with what has gone before." (1976: 293). Lexical cohesion contributes importantly to creating the texture (Halliday and Hasan 1976), a distinctive inherent quality of a text, and increases the overall coherence of the text. A *conceptual framework* proposed by Nandi et. al. (2009) adapted from the works of Henri (1992), Newman, Webb and Cochrane (1996) and Garrison, Anderson and Archer (2001) defines several themes on which qualitative online interaction can be designed and assessed. In order to assess each criterion the authors have separated the above criteria into three broad categories:

- **Content:** demonstrating the expertise of the learners in the discussion topic, by which the talent of the learners can be assessed.
- **Interaction quality:** looking at the way learners interact with each other online in a constructive manner, which implies that the contribution should be collaborative and meaningful for the community of learners
- **Objective measures:** highlighting how consistently and frequently learners participate in discussion.

3. Statement Of The Problem

Online courses give a platform for discussions to all the participants of the courses on the topic or the content and share experiences and ideas with other participants in the same course. To identify the main idea from long and deep discussions is difficult as there may be less or no use of cohesive devices and coherence in writing the posts on discussion forums. As the use of cohesive devices in discussions enhance the meaning and make it understandable and readable to the readers, not all the people use cohesive links in discussions as they assume it is an informal discussion and end up posting mixed up ideas which makes it difficult for the readers to understand.

4. Research Questions

- a. What are the cohesive links used in different context by most of the participants?
- b. What are the expertise of the learners demonstrated, the interactional quality and the objective measures in the discussions?

4.1 Research Objectives

- a. To identify the cohesive links used by most of the participants and the context.

- b. To investigate the expertise of the learners demonstrated, the interactional quality and the objective measures in the discussions.

5. Literature Review

Online Learning

The terms e-learning and online learning are often used interchangeably, although e-learning can encompass any form of telecommunications and computer-based learning while online learning means using specifically the internet and the web. Online learning allows participants to collapse time and space (Cole; 2000), however the learning materials must be designed properly to engage the learner and promote learning. According to Rossett (2002), online learning has many promises but it takes commitment and resources and must be done right. Ring and Mathieux (2002) suggest that online learning should have high authenticity, high interactivity and high collaboration. Khan (1997) defines online instruction as an innovative approach for delivering instruction to a remote audience using the web as the medium. Online learning involves more than just presentation and delivery of materials using the web: the learner and the learning process should be the focus of online learning. ” (Anderson, 2008, p.16-17). Moore and Kearsely (2012) says that “Distance education courses are open to public scrutiny since they are delivered by mediated programs that can accessed easily. The growth of distance education implies major changes of culture as well as the structure of those schools and training organizations that decide to become involved.” “MOOCs are a recent development in distance education. Online language courses have normally focused on formal aspects and on written skills, dealing mainly with vocabulary acquisition and grammatical practice and limiting the activities included to reading comprehension and closed written production, with a minority of them offering closed listening comprehension activities” (Martín-Monje, Barcena & Read 2013). “Blended Learning according to Clayton Christensen Institute for Disruptive Innovation is a “a formal education plan program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path or pace (Bailey, Schneider & Ark, p. 15).” “Digital learning allows schools to realize many areas of cost savings especially when moving to an environment in which many traditional spending areas will naturally decrease like paper, textbooks, manuals etc. (ibid: p-28)”

Asynchronous Interactions

Online asynchronous discussion is argued to have many benefits for student learning, such as helping learners negotiate higher levels of understanding, share and develop alternative viewpoints (Rovai, 2000). In an earlier paper we developed a conceptual framework for assessing interaction quality in online discussion forums and noted that existing criteria do not focus on interaction or engagement or quality but instead they focus on content and objective measures such as participation rate (Nandi, Chang & Balbo, 2009). According to Hawkes and Dennis (2003), establishing clear criteria for the assessment of online discussion is critical for successful use of this medium. Brannon and Essex (2001) stated the need for clear communication protocols and requirements for posting, and suggested that the continued development of an innovative evaluation framework is necessary to improve the quality of contributions to an online discussion. Klisc, McGill & Hobbs (2009) suggested that incorporation of assessment of participation has a positive impact on learning outcomes. Discussion forums have frequently been used successfully as communication tools in online learning environments to facilitate interaction between students to share knowledge (Rovai, 2002; Bradshaw & Hinton, 2004; Berner, 2003). There are different levels

of participation in discussion forums. Firstly some are “lurkers” (Salmon, 2003) i.e. who just read the messages and don’t participate. They may learn by reading the posts and incorporating the ideas into their assignments (Guzdial and Carroll, 2002). Secondly some people read the messages and treat it as a notice board posting their own position and having limited interactivity. Thirdly the participation is interactive and used to its full potential (Ho, 2002) for learning where collaboration and interaction facilitates the achievement of good learning outcomes (cited in Wishart and Guy, 2009).

Lexical Cohesion

According to Halliday and Hasan (1976), the primary factor of whether a set of sentences do or do not constitute a text depends on cohesive relationships between and within the sentences which create texture. Malmkjar (2004, p.543) is of the opinion that “cohesion concerns the way in which the linguistic items of which a text is composed are meaningfully connected to each other in a sequence on the basis of the grammatical rules of the language, and formal devices signal the relationship between sentence. Cohesion connects certain grammatical or lexical features of the sentences to the text of the other sentences in the text. Halliday and Hasan (1976, p.14) argue that cohesion is expressed partly through the grammar and partly through the vocabulary, hence grammatical cohesion and lexical cohesion. “It is necessary to consider that cohesion is a semantic relation but, like all the components of semantic system, it is realized through the lexico grammatical system. The lexico grammatical system includes both grammar and vocabulary. Of the cohesive types reference, substitution, and ellipsis are grammatical; lexical cohesion is lexical; and finally conjunction is on the borderline of the two, mainly grammatical, but with a lexical component in it” (Halliday and Hasan 1976. p.5). According to Schiffrin, Hamilton and Tannen (2001), “Conjunction is concerned with resources for connecting messages, via addition, comparison, temporality, and causality. This system subsumes earlier work on linking between clauses in a framework which considers, in addition, the ways in which connections can be realized inside a clause through verbs, prepositions, and nouns, (p.35)”. Cohesion used to be described as “the way certain words or grammatical features of a sentence can connect that sentence to its predecessors and successors in a text” (Hoey 1996: 3). Cohesion can also be realized by implicit (zero) signals, defined as follows: “those surface representations which are realized by a phonologically null anaphoric or cataphoric element, the explicit reading of which is recoverable on the basis of commonly shared knowledge of the language system in general.” (Tárnyiková 2009:52). Brown & Yule (1983) focused much on the process of analyzing written discourse (cited in Gang and Qiao, 2014)

Methods to Analyze

There are different methods for text analysis which include content analysis, grounded theory, ethnographic methods, narrative semiotics, critical discourse analysis, distinction theory text analysis etc.

However, for this study the method of “Content Analysis” is exploited which analyze both cohesion and coherence. Cohesion in this respect refers to the components of the textual surface whereas coherence constitutes the meaning of the text. Therefore, the systematic analysis of the relationship between these two dimensions is confined to linguistic methods (Titscher, Mayer, Wodak and Vetter, 2000). Content analysis is the longest established method of text analysis among the set of empirical methods of social investigation (Holsti, 1968, Silberman, 1974, Herkner, 1974). All material especially generated for psycho-social research (group discussions, depth interviews, and

meeting reports, etc. can also be subjected to content analysis. We have not yet found the limits to the application of content analysis and related software. The Internet provides a wealth of “free” data for researchers and curious data analysts to conduct a variety of investigations, which could generate unique and powerful information and could even lead to useful and rich conclusions” (Frietas, Moscorala, Jenkins, (1998). Zhang and Wildemuth (2009, p. 308) outlining that “qualitative content analysis goes beyond merely counting words or extracting objective content from texts to examine meanings, themes and patterns that may be manifest or latent in a particular text”.

6. Research Methodology

The research design exploited for conducting this research is Qualitative Content Analysis. Weber (1990, p. 117) defines as “content analysis is a research method that uses a set of procedures to make valid inferences from text.” Zhang and Wildemuth (2009, p. 308) outlined that “qualitative content analysis goes beyond merely counting words or extracting objective content from texts to examine meanings, themes and patterns that may be manifest or latent in a particular text”. Content analysis enables a process to systematically examine the quality of learning in online discussions (Gunawardena et al., 1997). Henri (1992) described computer conferencing as a “gold mine of information” (p. 118) that would provide researchers a rich resource to analyze and advance online learning.

Use of content analysis to assess online discussions has increased over the past 20 years, just as Henri had predicted, but concerns about lack of uniformity and disclosure of the analysis methods have arisen (De Wever et al., 2006; Rourke et al., 2001). Issues in comparing content analysis studies of online discussions have arisen due to a lack of consistency in the different analysis instruments used (Rourke & Anderson, 2004). “This lack of replication (i.e., of successful applications of other researchers’ coding schemes) should be regarded as a serious problem” (Rourke et al., 2001, p. 6). Consequently, research literature has stressed the need for more studies to employ similar instruments (T. Anderson, 2005; De Wever et al., 2006), which in turn should increase the reliability and validity of these types of studies (Stacey & Gerbic, 2003).

7. Data Collection

The data is collected from five weeks of discussions in a discussion forum of an online course entitled “**Shaping the Way We Teach English, the Landscape of English Language Teaching**” by University of Oregon offered on a mooc platform COURSERA which is free and accessible to all.

Table.1 Course Overview

COURSE	Shaping the Way We Teach English, the Landscape of English Language Teaching”
PLATFORM	COURSERA BY University Of Oregon
PARTICIPANTS	Lecturers, teachers and trainee students
DURATION	5 WEEKS

SYLLABUS VIEW	<p style="text-align: center;"><u>Week 1: AUTHENTIC MATERIALS AND REALIA</u></p> <p>Project overview, introductions; authentic materials and realia that really motivate learners</p> <p style="text-align: center;"><u>Week 2: PAIR AND GROUP WORK FOR COLLABORATIVE LEARNING</u></p> <p>Using small groups to make your class more communicative</p> <p style="text-align: center;"><u>Week 3: CRITICAL AND CREATIVE THINKING</u></p> <p>Creative and critical thinking to drive learning</p> <p style="text-align: center;"><u>Week 4: LEARNER FEEDBACK AND ASSESSMENT</u></p> <p>Formative assessment and error correction in the classroom</p> <p style="text-align: center;"><u>Week 5: LANGUAGE IN CONTEXT</u></p> <p>Language structured by themes and topics in the curriculum</p>
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8. Data Analysis

The discussion forum transcripts for each week of the course which is the required forum as per the course developers where the participants have to participate are being taken and analyzed. Maximum of range of the posts are from 1- 100 posts for all the five weeks. Brannon and Essex (2001) stated the need for clear communication protocols and requirements for posting, and suggested that the continued development of an innovative evaluation framework is necessary to improve the quality of contributions to an online discussion. The first part of the analysis presents the evaluation of the participation and quality postings for online discussions and the second part of the analysis highlights the range of cohesive devices used by the participants in the discussion forums.

The Data is analyzed in two parts:

1. To answer the *first research question*, the technique of discourse analysis is employed to find out the range of cohesive devices used in the discussions.
2. To answer *the second research question*, the analysis is based on the criteria proposed in the framework of Nandi et. Al. (2009).

8.1 The framework of Nandi et. al. (2009) highlights criterion that have separated the above criteria into three broad categories: Content, .Interaction quality & Objective measures which are being explained.

The criteria from the framework is shown in (rubric 1.1). The analysis will include all these sub-criteria under the bigger category of criteria.

Content	<ul style="list-style-type: none"> a. Clarification b. Justification or judgment c. Inferencing or interpretation d. Application of knowledge (relevance) e. Prioritization f. Breadth of knowledge
Interaction quality	<ul style="list-style-type: none"> a. Critical discussion of contributions b. New ideas/solutions from interactions. c. Sharing outside knowledge or expertise d. Use of social cues or emotions to engage with participants
Objective measures	<ul style="list-style-type: none"> a. Participation rate b. Consistency of participation

9. Results And Discussion

The results are shown according to the analysis of the discussions and the range of cohesive devices used for each week discussion transcripts. The results of the kind of discussions include the content, interactional quality and objective measures which are based on the criteria proposed by Nandi. Therefore, the results are shown based on the *conceptual framework (Nandi et al, 2009) and discourse analysis technique* to identify the range of cohesive devices in the form of tables to make it clear according to each week.

9.1 TABLE-A- WEEK 1 DISCUSSION FORUM ANALYSIS

9.2 TABLE-B- WEEK 2 DISCUSSION FORUM ANALYSIS

9.3 TABLE-C- WEEK 3 DISCUSSION FORUM ANALYSIS

9.4 TABLE-D- WEEK 4 DISCUSSION FORUM ANALYSIS

9.5 TABLE-E- WEEK 5 DISCUSSION FORUM ANALYSIS

9.1. Kind of discussion and the cohesive devices used in week 1 discussion forum

Table-A		Week 1 Discussion Forum Analysis (62 Posts)	
Kind of discussions	<p><u>Content</u></p> <ul style="list-style-type: none"> • The posts are more like justification of their ideas, sharing ideas and their personal preferences. • The discussion gives new ideas as the participants share their experience with the other members. • The discussions are combined from the information shared by the other participant. • Language errors are present. • Posts are repeated by some participants. <p><u>Interaction quality</u></p> <ul style="list-style-type: none"> • Some discussions are deep and long where they describe their experience and discuss their strategies of teaching. • There are some critical discussions. • There are surface discussions where participants just point out the main point from the previous post. <p><u>Objective measures</u></p> <ul style="list-style-type: none"> • Reasonable consistency in the participation rate. • Participants take part in discussions actively. 		
Range of cohesive devices	<ul style="list-style-type: none"> • Deep and long discussions have range of cohesive links. • Surface discussions have only “AND” as a cohesive link. • Some posts do not have any cohesive links. • Examples: <i>And, for example, therefore, since, because, also, than, so, or, in order to, like, but, however, whereas, moreover, then, whether, to sum up.</i> 		
Frequency of occurrence	<p>And- 44</p> <p>For example- 3</p> <p>Therefore- 1</p> <p>Since- 1</p> <p>Because- 4</p> <p>Also- 2</p> <p>Than- 1</p> <p>So- 7</p> <p>Or- 6</p> <p>In order to- 2</p>	<p>Like- 1</p> <p>But-5</p> <p>However- 2</p> <p>Whereas-1</p> <p>Moreover- 1</p> <p>Then- 1</p> <p>Whether -1</p> <p>To sum up- 1</p>	

9.2 Kind of discussion and the cohesive devices used in week 2 discussion forum.

Table- B		Week 2 Discussion Forum Analysis (100 Posts)	
Kind of discussions	<u>Content</u>		
	<ul style="list-style-type: none"> • The posts are more like justification of their ideas, sharing ideas and their personal preferences. • The discussion gives new ideas as the participants share their experience with the other members. • The discussions are combined from the information shared by the other participant. • Language errors are present. • Posts are repeated by some participants. 		
	<u>Interaction quality</u>		
Range of cohesive devices	<ul style="list-style-type: none"> • Some discussions are deep and long where they describe their experience and discuss their strategies of teaching. • There are some critical discussions. • There are surface discussions where participants just point out the main point from the previous post. 		
	<u>Objective measures</u>		
	<ul style="list-style-type: none"> • Reasonable consistency in the participation rate. • Participants take part in discussions actively. 		
Frequency of occurrence	<ul style="list-style-type: none"> • Deep and long discussions have range of cohesive links. • Surface discussions have only “AND” as a cohesive link. • Some posts do not have any cohesive links. • Examples: <i>And, for example, therefore, since, because, also, than, so, or, in order to, like, but, however, whereas, moreover, then, whether, to sum up.</i> 		
	<ul style="list-style-type: none"> And- 44 For example- 3 Therefore- 1 Since- 1 Because- 4 Also- 2 Than- 1 So- 7 Or- 6 In order to- 2 	<ul style="list-style-type: none"> Like- 1 But-5 However- 2 Whereas-1 Moreover- 1 Then- 1 Whether -1 To sum up- 1 	

9.3 Kind of discussions and the cohesive devices used in week-3 discussion forum.

Table-C		Week 3 Discussion Forum Analysis (100 Posts)
Kind of discussions	of	<u>Content</u>
		<ul style="list-style-type: none"> • The posts are more like justification of their ideas, sharing ideas and their personal preferences. • The discussion prompts the others to give their ideas and interpret others idea and critique as the participants share their experience with the other members. • The discussions are combined from the information shared by the other participant. • New ideas and creativity is included in the discussions. <p><u>Interaction quality</u></p> <ul style="list-style-type: none"> • Some discussions are deep and long where they describe their experience and discuss their strategies of teaching. • There are very few surface discussions where participants just point out the main point from the previous post. <p><u>Objective measures</u></p> <ul style="list-style-type: none"> • Reasonable consistency in the participation rate. • Participants take part in discussions actively.
Range of cohesive devices	of	<ul style="list-style-type: none"> • Deep and long discussions have range of cohesive links. • Surface discussions have only “AND” as a cohesive link. • Some posts do not have any cohesive links. <p>Examples: <i>And, between, therefore, in addition, because, also, than, so, or, such as, but, however, then.</i></p>

Frequency of occurrence	And- 46 Between- 1 Therefore- 1 In addition- 1 Because- 2 Also- 3 Then- 6 So- 5 Or- 6 Such as- 1 But- 18 However- 3 Thus- 2
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9.4 Kind of discussion and the cohesive devices used in week 4 discussion forum.

Table-D Week 4 Discussion Forum Analysis (14 Posts)	
Kind of discussions	<p><u>Content</u></p> <ul style="list-style-type: none"> The posts are very few and only few participants share idea restrictively. <p><u>Interaction quality</u></p> <ul style="list-style-type: none"> Some discussions are deep and long where they describe their experience and discuss their strategies of teaching. There are no surface discussions. The discussions are not coherent. <p><u>Objective measures</u></p> <ul style="list-style-type: none"> No consistency in the participation rate.
Range of cohesive devices	<ul style="list-style-type: none"> Deep and long discussions have range of cohesive links. Some posts do not have any cohesive links. Examples: <i>And, both, also, so, since, but, then, therefore, for example.</i>
Frequency of occurrence	And- 12 Both- 1 Also- 1 So- 1

	Since- 1 But- 4 Then- 1 Therefore- 1 For example- 1
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9.5 Kind of discussion and the cohesive devices used in week 5 discussion forum

Table-E Week 5 Discussion Forum Analysis (48 posts)	
Kind of discussions	<p><u>Content</u></p> <ul style="list-style-type: none"> • The posts are more like arguments of their ideas, sharing ideas and justifying personal preferences or practices. • The discussion prompts the others to give their ideas and interpret others idea and critique as the participants share their experience with the other members. • The discussions are combined from the information shared by the other participant. • New ideas and creativity is included in the discussions. • There are some language errors in the posts. <p><u>Interaction quality</u></p> <ul style="list-style-type: none"> • Discussions are deep and long where they describe their experience and discuss their strategies of teaching. • There are very surface discussions where participants give answers for the previous posts. <p><u>Objective measures</u></p> <ul style="list-style-type: none"> • Reasonable consistency in the participation rate. • Participants take part in discussions actively.
Range of cohesive devices	<ul style="list-style-type: none"> • Deep and long discussions have range of cohesive links. • Surface discussions have only “AND” as a cohesive link. • Some posts do not have any cohesive links. • Examples: <i>And, between, because, then, so, or, such as, but, however, then, as well as, on the contrary, first, second, also, further, both, for instance, for example, consequently, thus.</i>

Frequency of occurrence		
	And- 8	On the contrary- 1
	Between- 1	First- 1
	Because- 6	Second- 1
	Then- 1	Also- 2
	So- 2	Further- 1
	Or- 1	Both- 1
	Such as- 1	For instance- 1
	But- 7	For example- 6
	However- 3	Consequently- 1
	Than- 1	Thus- 1
	As well as- 2	

9.6 Overall Analysis

There are range of different types of cohesive devices used by the participants in order to connect ideas and discuss. The participants used different types of cohesive devices to perform *different actions like to show contrast, to explain, to connect two statements, to give examples, to summarize, highlight or to list down the steps of the procedures in the research*. The range of cohesive devices for used for different types of cohesion like listing/enumeration, giving examples, highlighting/reinforcement, contrast and comparison, connecting and addition, consequence/result are formulated into seven broad categories and the range of cohesive devices used for each category are divided accordingly which are shown in table below. Each category is being explained below to give a deep insight in the usage of cohesive devices of the same type.

Categories of cohesive devices	Examples of the cohesive devices from forums
1. Result/consequence/summary	Therefore, thus, to sum up, so, then, consequently.
2. Contrast and comparison	Or, but, in contrast, whereas, on the contrary, also, however. Like, whether, than, more, as well as
3. Giving examples/exemplification	Such as, on the other hand, for example instance
4. Reinforcement/addition	In addition, further, also, next, then, more important.
5. Connective/position/highlighting/ Giving reasons	And, between, because.
6. Listing/enumeration/time &sequence	First, second, last, further, next.

Explanation Of Each Category

The above categories shows that different cohesive devices have same function of connecting ideas, creating flow among the knowledge and make it more readable and understandable but

possess different meanings depending on the context. They are used at suitable places where the cohesive devices play the different roles which are explained below.

1. **To summarize or give results/consequences.** the devices used are therefore, thus, to sum up, finally, so, then, in total. Devices *like to sum up, then* are being mostly used to show the results. The device “*then*” is used to highlight the time and sequence of the process and also indicate the upcoming process or results for a particular process as all these devices have the same function but give different meaning in different sentences to summarize or conclude.
2. **To compare and contrast** the devices used are *or, but, on the contrary, however, whereas, also, like, whether, than*. These devices help in showing contrast and comparison to show the relationship between the information.
3. **To give examples/exemplification** devices like *such as, for example, for instance, on the other hand* are used which perform the same function but vary in their usage.
4. **To show reinforcement/addition** the devices used are *in addition, further, also & next* which show addition or reinforcement in the existing knowledge of fact and showing addition of steps used further, highlight information which shouldn't be ignored.
5. **To give reasons/ show position/highlighting** devices such as *between, because, And* are used. The device “*between*” show the reason for differences between opinion or result or information provided by any source. “*Because*” give reasons for the information present or the findings and “*more important*” highlights the main reasons.
6. **To list or enumerate.** devices *like first, second, last, further, next* are used. These devices are used to list down the steps or give information in a sequential manner. They help to sequence the process steps, information and the results or findings.

AND: This is the most common cohesive device used everywhere and is used mostly by the participants in the discussion forums either to connect two statements, give equal importance to the two statements and also to create coherence within the forum. The frequency of occurrence of this device is highest among all which is **170 times** in total in all week's forum.

Discussion

The key focus of this research was on the kind of discussions done by the participants and the range of cohesive devices used by the participant's in discussion forums. By analyzing discussion forum, I have uncovered the kind of discussions and the range of cohesive devices used for online discussion forums. Therefore, it is clear that the content of posts meet Nandi's Framework of providing a content which includes justification, clarification, prioritization, Inferencing which can only be understood and easily readable if a range of cohesive devices will be used by the participants

As mentioned earlier, I have compared the findings of the data collection with the set criteria from the conceptual framework (Nandi et al., 2009). Results show that almost the theme of the discussion posts are of sharing ideas, creativity and sharing personal practices and experiences. There are arguments, justifications and also give a scope for others to add in the information. An extra qualitative analysis of discussion also came out of the data analysis which is discussed below in detail.

Quality Of Posts: In general, the quality of the posts consisted of the criteria of the conceptual framework by Nandi et al. (2009) which are clarification, justification or judgment, Inferencing or interpretation, application of knowledge (relevance), prioritization & .breadth of knowledge. The participants make maximum use of the discussion forum to share their ideas, justify their point of

views by applying knowledge relevant to the topic and increasing the scope for the others to contribute in knowledge. Therefore, the quality of posts overall in the discussion forums was high and it did not reflect poor contribution of information.

Interaction Quality: The criteria for interaction quality set in the framework includes critical discussion of contributions, new ideas/solutions from interactions, sharing outside knowledge or expertise, use of social cues or emotions to engage with participants. All these features of interaction were very evident in the discussion transcripts as all the participants share their experiences and practices in their countries and places which are engage the social cues of the participants. There is a lot of sharing of ideas and creativity, practices which can be used to improve the previous practices and critically contributing to the information is also prevalent in the discussions.

As seen from the above two criteria, the third criteria which is **OBJECTIVE MEASURES** according to the framework fulfills automatically as it shows active and consistent participation in all weeks except in week-4 which is evident because of the least number of posts among all the weeks.

Cohesive Devices: As seen from the analysis, the discussions which are deep and long and have cohesive links whereas discussions which are surface and responses to the previous posts using phrases like I agree with..., Thanks for sharing do not contain any cohesive link and also disturbs the coherent factor in the discussions. Most of the discussions are connected with only one cohesive link which is “AND” and some of the posts which are descriptions, arguments or justifications consist of a number of cohesive devices as shown above. These cohesive devices helps to bring in the coherence factor which shows the flow of the information throughout the posts. But some surface or one line discussions break the coherency in the discussion forums. The most commonly used cohesive devices throughout the course are *And, For instance*, therefore, as well as, because, also, on the other hand, than, so, or, most important, in order to, like, such as, but, however, between, for example.

Therefore based on the analysis and discussions, implications have been formulated to teach cohesion as the main element in online writing skills.

Implications

English for specific purposes comes with a specific context where language in that context is the focus when teaching is concerned. As cohesion being one of the most important aspects of language is independent of any context, so any written discourse whether in an online course or non-online course has to be cohesive and considered as a major element to be taught to the students.

The idea or approach of Widdowson (1983) model named “A three tier model”, which was introduced to account for actual language use, has been taken into consideration to meet the needs of the students as Widdowson model is primarily concerned with the theoretical background of to teaching of English for specific purposes and is a discourse model that is firmly based on schema theory. The model therefore contains three levels:

- a. Systematic level (linguistic competence)
- b. Schematic level (communicative competence)
- c. Procedural level (communicative capacity)

As Fulcher (1998) explains that the procedural level is significantly different from 1 and 2 levels and it is this level which deals with performance issues or how the reader establishes a mental representation of the text is able to predict what is coming in the text, the approach adapted is based on this level of the three tier model. It is concerned in the ways in which a reader goes about

interpreting the schemata of the text. Widdowson distinguished between frame procedures and routine procedures where frame procedures are said to explain the ability to utilize from frame schemata and routine procedures are said to explain the ability to utilize from routine schemata. Frame procedures are defined by those that establish and maintain reference especially with regard to cohesion and working out “given” from the new information (Widdowson, p.41-42, 67) (cited in G. Fulcher, 1998). Fulcher further explains that through these procedures the reader fits new information into frame. The procedures involve tracing cohesive links and understanding the relationship of information as belonging to a specific frame, which is the engagement of schematic knowledge in processing text meaning. G. Fulcher (1989) elaborated more on cohesion and frame procedures that “as cohesion is concerned with both endophoric and exophoric reference and lexical cohesion, it may be said that the frame procedures are those concerned with the interpretation of and formation of ideational schemata.” Ideational schemata are related to conceptual organization (Widdowson, 1983, p55-56).

Therefore, the approach to teach cohesion so as to able the students to apply their knowledge of language use and its applications in understanding and comprehending the text is inspired by the idea of Widdowson (1983) for frame procedures in the procedural level of his three tier model. It gives a clear insight as in how the schema i.e. organizational concept of a text plays an important role in comprehending the text and understanding the relation of information sentence by sentence. The context for teaching cohesion could be decided by identification of the skill to be taught as it plays an important role in all the skills which should be organized well and delivered cohesively and coherently as Hasan (1984) cogently argued that there is a string connection between cohesion and making sense of coherent text (cited in Fulcher, 1998).

Conclusion

Cohesion is very important for any kind of written discourse. The ideas highlighted in any kind of written discourse i.e. discussions for this study requires cohesive links to create transitions from one idea to another. Any written discourse should possess language which is readable and understandable. As already seen in the analysis that most of the discussions are long where the participants share their experiences and ideas with others in the forum, it is very important to write cohesively to make others understand and make use of your experiences and ideas. It helps in improving the content and the interactional quality of the discussions on discussion forums. It also increases the participation rate when the participants have the ability to connect ideas, justify, and clarify their view, perceptions, and their practices to different people on the forum. If written cohesively, the content makes sense and shows value whereas scattered ideas and content mostly result as just some text written which do not possess any value and meaning.

Therefore, any kind of discussions done online should be written more cohesively as the online platform makes it available for a larger audience. Online learning helps us to spread our ideas and creativity among larger audiences. Language can never be separated from any kind of discourse.

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