Do Online Professional Forums Promote Professional Contents Effectively? An Analytical Study of New Millennium LIS Professionals (NMLIS)

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Abstract -*Paper deals with the analytical study of communications posted in the online professional forum using content analysis technique. The study analyses 13062 communications posted in the NMLIS forum during five year period. Total extents of communications have been calculated and further Core Contents (Professional Contents) and Non-Core Contents (Non-Professional Contents) have been identified based on eight categories of scholarly communications. The "Degree of Effectiveness" and "Levels of Effectiveness" have been proposed to measure the effectiveness of online professional forums. The study found that Core Contents was the major focus of communications among group members and thus NMLIS promote professional contents effectively.*

Keywords: Professional Forum, Online Forum, Professional Content, Professional Growth, Scholarly Content, Library Professionals, Content Analysis, NMLIS.

1. Introduction

The evolution of the Internet and World Wide Web has changed the way of communication among peers across the world. In the present scenario, online forums have changed the way of communication among peers and crossed the limits of geographical boundaries. It is a web-based communication tool that gives opportunities to peers to post their views/message as well as react to other's posts. Online forum plays the very much significant role in terms of dissemination of professional information as well as sharing of digital information resources. Library and Information Science (LIS) is the profession which deals specifically with the dissemination of information content to the users; and in this regard, LIS professionals disseminate the professional content available in the various physical forms. Ebner et al. (2010) advocates that it is not the "transfer of information or status messages that are crucial factors, but rather, the opportunity to be part of someone else's process by reading, commenting, discussing or simply enhancing it" that leads to being part of a "murmuring community" (p. 98).

There are numbers of online LIS discussion forums, out of which *New Millennium LIS Professionals (NMLIS)* group is widely accepted and used by the Indian LIS professionals among all other online discussion forums. The *NMLIS* created on 22nd October 1999 by Prof. N. Laxman Rao on Yahoo! The group is sharing the different varieties of professional as well as general kind of knowledge and experience to the members of the group. This is the biggest discussion group in Library & Information Science discipline in India, in terms of group

members (3111) as well as in terms of communications posted (more than 33269) on the group as on 16.03.2017. There are many online professional forums in different disciplines. There exists online discussion on the topic related to field specific as well as others also. LIS online forums also do the same. The question arises in the mind that whether these online professional forums discuss more on professional growth effectively or not? It has been observed that online forums discuss professional contents as well as other contents also (Shukla & Dawngliana, 2017; Dawngliana & Shukla, 2018). To check the effective use of online professional forums in the promotion of professional growth, it is imperative to analyze the contents of communications posted in the forum. Prasad (2008) described the content analysis "…as the scientific study of the content of communication. It is the study of the content with reference to the meanings, backgrounds, and purposes contained in messages". White & Marsh (2006) defined "content analysis is a method which can be used qualitatively or quantitatively for systematically analyzing written, verbal, or visual documentation". A detailed description of content analysis has been described by Berelson (1952) as "the researcher quantify and analyze the presence, meanings, and relationships of such words and concepts, then make inferences about the messages within the texts, the writer, the audience, and even the culture and time of which these are a part. Texts can be defined broadly as books, book chapters, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches, conversations, advertising, theater, informal conversation, or really any occurrence of communicative language".

2. Review of Literature

There are numbers of literature available in content analysis but the limited number of literature available in the area of online forums content analysis. Out of that literature, some very specific literature has been reviewed for the purpose which is as follows:

Dawngliana & Shukla (2018) conducted a longitudinal study on content analysis of NMLIS forum and found that the group communicated more professional information content. In another study by Shukla & Dawngliana (2017) on content analysis of online forum has given an impression that professional communication was highly preferred in the forum, and they identified as well as classified the communicated messages into eight different categories. Pujar et al. (2014) analyzed messages posting on a prominent LIS electronic discussion forum and found that the average posting of the message is about 1600 per year during the study period, out of which an "announcements" are forming the major posting. Gala (2013) in her study reported that blog contents comprised of 30% blog posts and 25% response & comments. Jackson-Brown (2013) found that professional development was a major focus of the blog content. Dhanvandan & Tamizhchelvan (2012) analyzed the e-mail discussion forums and concluded that Library and Information Science forums play an important assistant role for the profession and a very simple and efficient way to communicate with the forum members. Seker & Duzyol (2011) analyzed content analysis of ACRLog and found the major focus communications were "technological aspects of LIS", "LIS service activities", "others" (conference announcements, information, and announcements about ACRL, personal ideas, and experiences, etc.) and "scientific and professional communication". Analysis conducted by Nor et al. (2010) found that students actively processed and review the postings in online discussion forums. From their study, it is observed that the students are working collaboratively in order to respond to the postings base on the topics presented during the lecture.

Moradi & Dokht (2009) analyzed content analysis of the electronic discussion group of Ferdowsi University of Mashhad, Iran and found that majority of the messages covers Library and Information Science related information followed by subscription request and congratulations and condolence messages. Moreover, messages related to Library and Information Science confirmed that 25.82% messages were related to news/events about LIS; and 22.90% posts were related to conferences and workshops. Bar-Ilan (2007) studied the use of blogs by libraries and librarians and found that blogs posts have the influence of activities of information professionals and become the good medium of communication for information dissemination. The content analysis conducted by Guan et al. (2006) found that most frequently involved interaction type was the direct response and the most regularly used cognitive skill was elementary clarification. The study also specifies that the way which participants used cognitive and meta-cognitive skills during the discussions was associated with the forum. They concluded that the moderators' guidance would be more influential in determining the quality of online discussion on a non-course-based discussion forum. Hara et al. (2000) conducted a study on the online discussion in an applied educational psychology course shows that, while student tended to post one required comment per week in a conference, their messages were lengthy, cognitive and indicative of a student-oriented environment. The analyses also indicate that student electronic comments became more interactive, however, the level of communication was highly dependent on the direction of how the conversation was started.

3. Scope of the Study

This study covers professional communications (13062 messages) posted by the group members of *New Millennium LIS Professionals (NMLIS)* during the five year period from 1st January 2012 to 31st December 2016.

4. Objectives of the Study

The main objective of the study is to analyze the effectiveness of professional contents communicated over online professional forum *New Millennium LIS Professionals (NMLIS)*. Further, the specific objectives of the study are:
1. To assess the extent of communications carried over an online forum.
2. To assess the extent of professional contents communicated over an online forum.
3. To find out the Degree of Effectiveness and Level of Effectiveness of professional contents carried over an online forum.

5. Data Collection Methods and Procedures

The online survey and observation methods have been applied to conduct the study. The primary data collected from the Yahoo! group *New Millennium LIS Professional (NMLIS)*. The data have been collected to know the level of involvement, type of their activity and number of communications (postings) with description. The communications carried out during the periods of 1st January 2012 to 31st December 2016 have been collected from the archived database; categorized and transcribed appropriately using already defined categories of scholarly communications identified by Shukla & Dawngliana (2017). The study involves a combination of qualitative and quantitative methods for the description of analysis and result. The MS-Excel has been used for data collection, coding, analysis, and its interpretation during the study.

6. Data Analysis and Interpretation

a) *Extent of Communications*

Table 1 display the extent of communications took place during five year period over *NMLIS* forum. There are 13062 communications took place during the study period. The table display year wise and month wise breakups of total communications. On the observation of table 1, it has been found that the highest number of communications (2840) have been posted during the year 2015 whereas the least communications (2403) took place in the year 2016. On an average, more than 2600 communications per year carried over *NMLIS* forum. The average monthly communications for the years 2012, 2013, 2014, 2015, 2016 were 220.58, 226.67, 204.33, 236.67, and 200.25 respectively. In the month of September, the highest number of communications (1251) took place cumulatively for five years whereas month of May had least (905) number of communications. For the five year window, from the total communications carried over the study period, it has been found that on an average 1088 communications took place per month.

Table 1: Extent of Communications

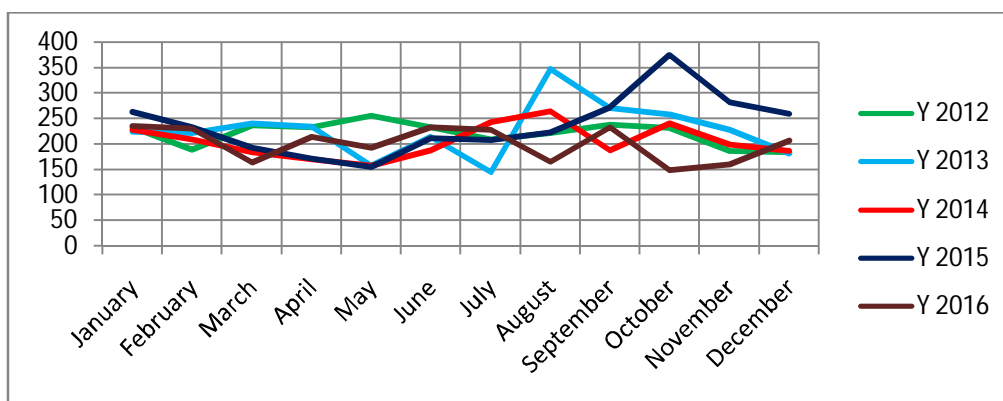| Months	Extent of Communications					Total	%
	2012	2013	2014	2015	2016		
January	233	224	228	262	235	1182	9.05%
February	189	222	208	233	230	1082	8.28%
March	236	240	184	192	163	1015	7.77%
April	233	234	169	171	214	1021	7.82%
May	255	157	157	155	192	916	7.01%
June	233	214	187	211	232	1077	8.25%
July	209	145	243	207	227	1031	7.89%
August	221	347	264	222	165	1219	9.33%
September	237	270	187	272	232	1198	9.17%
October	231	258	240	374	148	1251	9.58%
November	186	228	199	282	159	1054	8.07%
December	184	181	186	259	206	1016	7.78%
Total	**2647**	**2720**	**2452**	**2840**	**2403**	**13062**	**100%**
Average	**220.58**	**226.67**	**204.33**	**236.67**	**200.25**	**1088.5**	**8.33**

Fig. 1: Extent of Communications – Month wise

Fig. 1 displays the extent of communications month-wise for each year separately. The Fig. 1 clearly depicts that the highest number of communications posted in the month of October 2015 followed by August 2013. The Year 2012 has shown an almost equal distribution of communications for each month whereas the Year 2013 has many ups and down in the number of communications per month.

b) *Extent of Professional Contents*

Earlier studies conducted by Shukla & Dawngliana (2017) and Dawngliana & Shukla (2018) have clearly mentioned the categories of scholarly communications carried over online professionals forums. In their study, they clearly identified and defined the eight categories of scholarly communications carried over the online forum. These categories are Conference Communications (CON), Faculty Development Communications (FDM), Job Posts Communications (JOB), Library Science Communications (LSC), General Information Communications (GIC), Greetings Communications (GRC), Obituary Communications (OBI), and Other Communications (OTH). From the earlier mentioned categories, the first four categories namely Conference Communications (CON), Faculty Development Communications (FDM), Job Posts Communications (JOB), and Library Science Communications (LSC) focus more on professional development of Library & Information Science (LIS) and thus identified as core categories of professional communications where professional contents related to LIS are categorized. The professional forums which have the higher number of field-specific communications are successful in delivering their purpose to the forum members. More the field-specific communications will lead to the more successful forum.

Table 2: Extent of Professional Contents – Category wise

Months	Extent of Communications	Categories of Professional Contents							
		CON	FDM	JOB	GIC	LSC	GRC	OTH	OBI
January	1182	234	22	154	375	311	57	22	7
February	1082	163	16	121	399	332	11	32	8
March	1015	157	7	148	314	341	22	25	1
April	1021	132	7	111	370	317	28	56	0
May	916	137	19	166	277	260	6	48	3
June	1077	157	20	171	394	239	11	71	14
July	1031	171	15	178	363	239	5	51	9
August	1219	230	13	185	385	341	24	38	3
September	1198	222	6	243	360	302	21	42	2
October	1251	224	10	277	340	327	36	36	1
November	1054	188	10	209	262	303	40	34	8
December	1016	207	17	137	303	261	47	35	9
Total	**13062**	**2222**	**162**	**2100**	**4142**	**3573**	**308**	**490**	**65**
Percentage		**17.01**	**1.24**	**16.08**	**31.71**	**27.35**	**2.36**	**3.75**	**0.49**

Table 2 displays the total extent of professional contents (13062) in categorical form month-wise. These categories have been identified by Shukla & Dawngliana (2017). The categories

CON, FDM, JOB, and LSC have been identified as core categories that deal with the professional discussions and professional growth whereas rest of the categories namely GIC, GRC, OTH, and OBI deals with general kind of discussions and information sharing which is not related directly to professional contents. On observation of table 2, it has been found that 31.71% GIC related contents took place which is the highest amongst all categories followed by LSC (27.35%), CON (17.01%), JOB (16.08%), OTH (3.75%), GRC (2.36%), FDM (1.24%), and OBI (0.49%). In a five year window, 2222 CON related contents have been shared which is 17% of total contents shared in the group while 2100 JOB-related contents have been shared (16%) during the time frame. There are 3573 LSC related contents communicated (27.35%) which is the highest amongst professional contents category whereas only 162 FDM related contents have been shared which covers only 1.24% of total contents shared in the group. There are 13062 communications have been shared during five years of the study period, out of which 8057 (61.68%) contents are identified as professional contents (core contents) and rests of the 5005 (38.31%) contents found under non-professional contents (non-core contents). The categories CON, FDM, JOB, and LSC are directly related to the development of LIS professionals as observed by Shukla & Dawngliana (2017) in their study. In this regard, 61.68% contents belong to these four (4) core categories (CON, FDM, JOB, and LSC) identified for professional development. Moreover, out of the non-core categories, GIC related content is shared highly which shares 31.71% alone amongst all the eight categories. Further GRC, OTH and OBI related contents have been shared less but more than FDM category.

Here we propose a mathematical formula in line with Subramanyam (1983) formula to measure the degree of effectiveness of professional discussions carried over online forums. We name it "Degree of Effectiveness (DoE)" which will work as given below:

The maximum Degree of Effectiveness (DoE) will be 1 and values of DoE for any forum will range between 0 to 1. The Degree of Effectiveness (DoE) of contents of online professional forums will be calculated using the following formula:

$$\text{Degree of Effectiveness (DoE)} = \frac{N_c}{N_c + N_{nc}}$$

Where, DoE = Degree of Effectiveness, N_c = Number of core contents, N_{nc} = Number of non-core contents.

More the Degree of Effectiveness (DoE) for the professional content tends towards more effectiveness of professional forums and vice-versa.

Further, we propose Levels of Effectiveness (LoE) based on the DoE obtained for the professional forums. The detailed description of LoE is as given below in Table 3.

Table 3: Levels of Effectiveness

Levels of Effectiveness (LoE)	Range of DoE values	Description of LoE
Level -2	0 – 0.259	Unsatisfactory
Level -1	0.26 – 0.499	Satisfactory
Level 0	0.5	Average
Level 1	0.501 – 0.759	Good
Level 2	0.76 – 1.0	Excellent

Table 3 displays the Levels of Effectiveness (LoE) and Table 4 displays calculation of Degree of Effectiveness (DoE) month wise for the five-year data of online professional forum *NMLIS*. The DoE has been calculated for the year 2012-2016. Monthly DoE for five years has been calculated which ranged from 0.545 to 0.673. The highest DoE obtained in the month of November followed by October and September while least DoE obtained in the month of June. Year wise DoE can also be calculated from the above-mentioned formula. For the five year window, Professional Content contribution (Nc) is 8057 and Non-Professional Contents (Nnc) is 5005. The Degree of Effectiveness of the online professional forum (NMLIS) for five years is 0.616 and this indicates that *NMLIS* forum has a good level (Level 1) of professional contents over the period and thus disseminates professional contents effectively.

Table 4: Degree of Effectiveness of Online Forum – Month wise

| Month	Professional Contents (Nc)	Non-Professional Contents (Nnc)	Total Contents (Nc+Nnc)	Degree of Effectiveness	Level of LoE
January	721	461	1182	0.609	Level 1
February	632	450	1082	0.584	Level 1
March	653	362	1015	0.643	Level 1
April	567	454	1021	0.555	Level 1
May	582	334	916	0.635	Level 1
June	587	490	1077	0.545	Level 1
July	603	428	1031	0.584	Level 1
August	769	450	1219	0.631	Level 1
September	773	425	1198	0.645	Level 1
October	838	413	1251	0.669	Level 1
November	710	344	1054	0.673	Level 1
December	622	394	1016	0.612	Level 1
Total	**8057**	**5005**	**13062**	**0.616**	**Level 1**
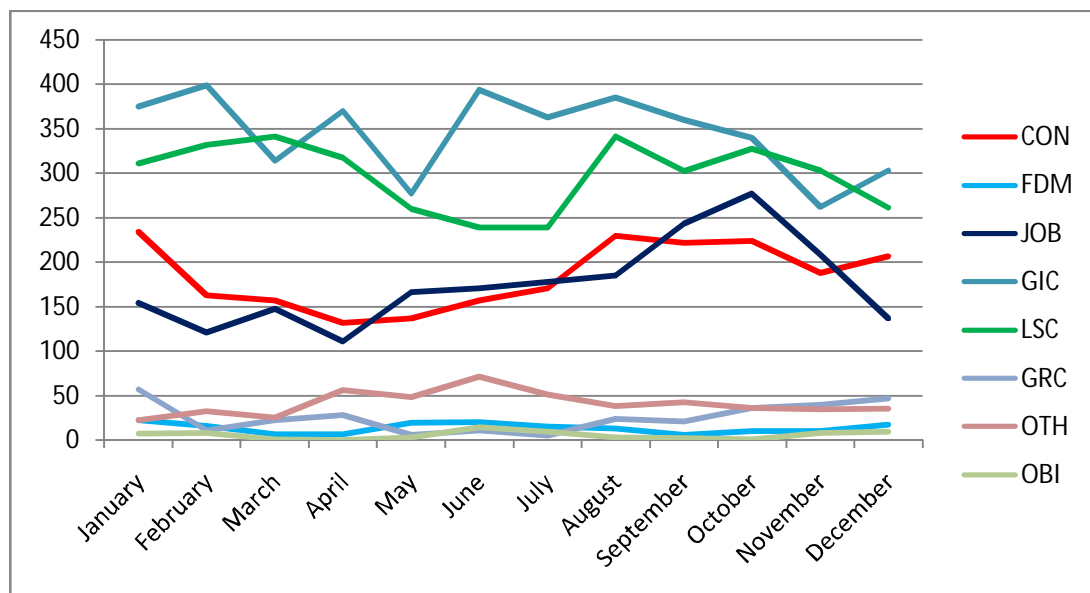
Fig. 2: Extent of Communications – Category wise

Figure 2 represents the total extent of communications carried over online forum categorically. It has been observed from Figure 2 that categories GIC, LSC, JOB, and CON have the higher number of communications every month whereas rests of the categories

FDM, GRC, OTH, and OBI have less than 50 communications most of the time. Further CON and JOB-related communications range between 100-250 per month while LSC and GIC related communications range between 250-400 per month.
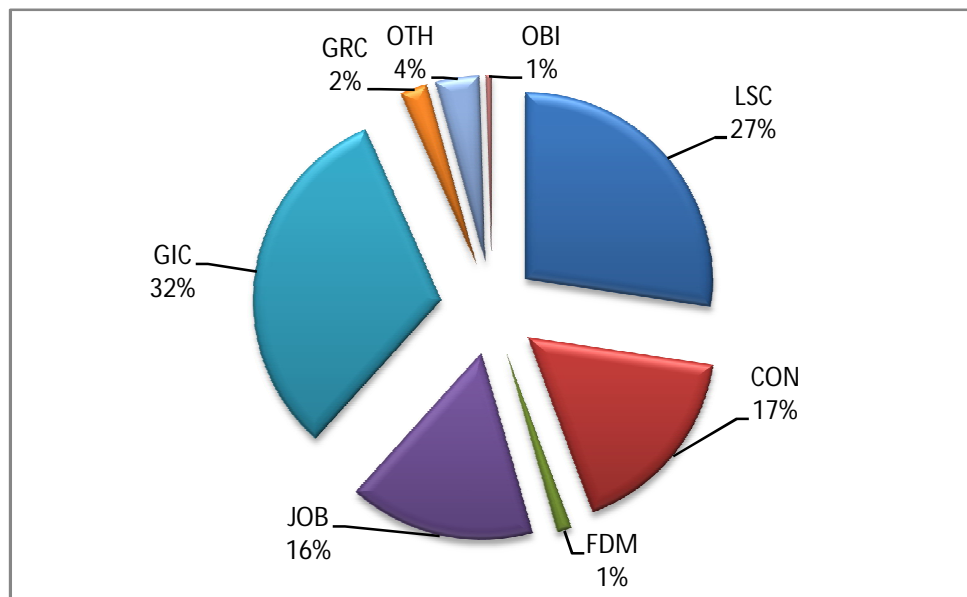

Fig. 3: Share of Core and Non-core Contents – Category wise

Figure 3 depicts the share of each individual category in terms of percentage. On the observation of Figure 3, it has been found that from the Core Contents (Professional Contents) categories, LSC related content is highly shared among group members followed by CON and JOB. The least communicated category amongst Core Contents is FDM. Amongst the Non-Core Contents (Non-Professional Contents) categories, GIC related content has the highest share (31.71%). Majority of the communications belong to Core Contents categories.
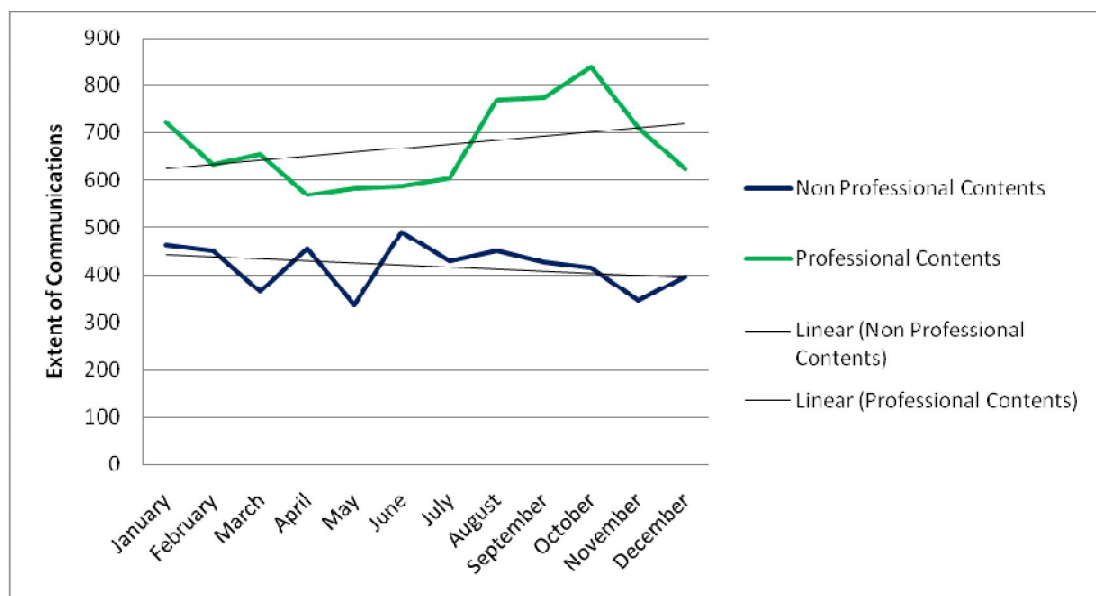

Fig. 4: Extent of Professional and Non-Professional Contents – Month wise

Figure 4 represents the trend of Professional Contents and Non-Professional Contents monthly. From the observation of Fig. 4, it has been found that Professional Contents are

always higher in terms of communication in the group than Non-Professional Contents. The figure 4 shows that 300-500 Non-Professional Contents have been communicated during the study period per month while 600-800 Professional Contents have been communicated per month in the same study period. The Linear Trendline for Non-Professional Contents shows downward movement from the month of January to December which indicates that starts of the year more Non-Professional Contents communicated and goes down gradually until the end of the year. The Linear Trendline for Professional Contents shows upward movement from start to end and denotes the growth of Professional Contents from start to end of the year. The both Linear Trendlines also indicates the difference of both types of communications carried over the online professional forum.

7. Findings and Conclusion

The *NMLIS* group is the biggest online professional forum in the field of LIS in India. It has more than 13000 professional communications during the five year period. The group has on an average more than 1000 professional communications per month for five years and more than 200 professional communications per month on yearly basis. The eight categories have been identified for the grouping of professional communications (Shukla & Dawngliana, 2017). Out of these eight categories, four Core Content categories (Professional Contents) and four Non Core Content categories (Non-Professional Contents) have been identified also by Shukla & Dawngliana (2017). The Core Content (61.68%) categories related communications have been communicated more in terms of number in the forum than Non Core Content (38.31%) categories. Further "Degree of Effectiveness" and "Levels of Effectiveness" have been proposed and calculated for the communications of the forum. For each of the month, "Levels of Effectiveness" calculated and result arrived at "Level 1" which shows "Good" Level of Effectiveness. There has been a remarkable difference observed between Professional Contents and Non-Professional Contents.

LIS professionals share their views and information with fellow professionals using online forums. "Online forums are one of the best information and views sharing platform. *NMLIS* group is also one of such kind of online platform to post individuals ideas, views, and information etc. It is evident that, when an LIS professional communicates in the group, he shares scholarly knowledge" (Shukla & Dawngliana, 2017). The major focus of the professional communications has been found for professional contents (core contents) which proves that online forum *NMLIS* is inclined towards professional development and promotes professional contents effectively. The mathematical calculations of "Degree of Effectiveness" and "Levels of Effectiveness" are supporting the online forum *NMLIS* for promoting the professional contents effectively amongst forum members.

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