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Proposition of Media and Information Literacy Curriculum for Integration into Pedagogy in IITs

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ABSTRACT

The purpose of the study is to identify the need of Media Information Literacy pedagogy in IITs through model curriculum if, proposed across the programme and courses. In this regard a survey was conducted with a well structured questionnaire for collection of data from targeted population with a sample of 1054 student of selected IITs of Northern India. Findings of the study demonstrate that 25 per cent to 30 per cent students welcome MIL curriculum for regular pedagogy. However, 60 per cent to 70 per cent students were of the opinion that MIL can enhance their critical thinking abilities for evaluating media messages which help the students to survive and thrive better in the digital world and prepares them for global communication and social participation.

Keywords: MIL curriculum; MIL pedagogy; IITs; Higher education

1. INTRODUCTION

In recent years, media and information literacy (MIL) has been increasingly recognised as a critical component of academics and social life. UNESCO1 defined "Media and Information Literacy is a set of competencies that empowers citizens to access, retrieve, understand, evaluate and use, create as well as share information and media content in all formats, using various tools, in a critical, ethical, and effective way, in order to participate and engage in personal, professional, and societal activities." Rapid growth of media technologies with multiple formats are changing landscape of the academic teaching and learning. For engaging student in this environment, students need critical thinking abilities and evaluating skills to effectively access, analyse, and use the information. These skills will help student to take informed decisions and form opinions that can impact their academic as well as social life.

Today, MIL has struggled to gain the momentum needed to become part of the students' development agenda. The present research work investigates the MIL and its ability to enhance the critical thinking of students through proposition of MIL curriculum in engineering courses. The study also tries to analyse what students need to know about searching for, and evaluating, information, and how teaching and learning can be planned and carried out to improve MIL skills. The study also tries to focus on the use of process-based inquiry approaches for developing Media and Information Literacy competence, involving students in active learning and open-ended investigations and emphasising their personal learning process.

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Media and information literacy has been evolved in the recent years and has got a dramatic reach among students and general people from all across the globe. It has been discussed that introducing MIL curriculum keeps the students aware from the adverse effect of media messages and builds the analytical power of individual to evaluate media messages. Student irrespective of their age, gender and nationality, these days rely upon media and its technologies to access information from various media formats and keep themselves up-to-date with rapid changing technologies. As a result Media and Information Literacy curriculum is felt necessary components in academic arena.

1.1 Purpose of the Study

Most of the media and information related research problems are related to the children up to k-12 level. This study is focused on investigating the response of proposing MIL curriculum for integration into pedagogy in higher education.

2. LITERATURE REVIEW

Some of the relevant studies are worth to support and develop insight into the present study. Kim[2] explained in his study that undergraduates are very dependent on media oriented information and have the competence to evaluate the media messages to some extent. The study reveals that the students need proper guidance and training to tune up with the information literacy (IL) standards as academic librarians deemed appropriate the use and evaluation of media information. Jagtar Singh[3] described that the information literacy is important for sense making ability of the stakeholders while he also emphasised that it should be intermingled with

the new media technologies and formats for engaging the people for their lifelong learning to make them more media informed and empowered them as well. Grizzle[4] describes that Media is the most powerful and ubiquitous in democratic society and needs Media and Information Literacy (MIL) to use it more effectively for young people particularly for students through MIL educated teacher who should have pedagogical competencies regarding teaching and lifelong learning to educate and empowering the students to be more media literate citizen for democratic society. Carolyn and Tessa[5] expounded the importance of connect learning in the media environment. She recommended MIL as an essential ability for teachers and students for sustainable development in the networked and global media information environment to achieve the Sustainable Development Goals (SDGs) of UNESCO.

Jose and Alagaran[6] describe that MIL should be integrated in the communication curriculum and should be taught to the students in such a way where education become more responsive towards sustainable development goals through new conceptual model of 3Es: Explore Engage and Empower. Students are the future media practitioner they need to be updated to align with the new media technologies. Teacher should take MIL as a class activity and help the students to make them engage with new media exploration which empower them for sustainable development through creation and sharing the media messages Kalra[7] emphasised MIL for the students of college and universities. As he consider that students from urban colleges have adequate opportunities to access the Internet, use of computer, laptop etc. He explained that Media and Information Literacy University Network of India (MILUNI) established by UNESCO in 2014 is taking initiative to develop MIL policy and strategy for the development of MIL curriculum suited for Indian education system at level of higher education.

A model curriculum prepared by the members of MILUNI has been accepted by the INFLIBNET and digital contents developed according uploaded on the portal. Author is also giving due importance to MIL for higher education and recommends it as qualitative paper for inter disciplinary course in post graduate programmes. Mathur[8] describes systematic growth and development of Media and Information Literacy in South Asia particularly in India. He also emphasised that MIL is soul of present and future media education. Author also revealed that MIL curriculum and its module have been developed by the Institute of Mass Communication (IIMC), New Delhi and the digital contents for National aspirants are being uploaded on e-pathshala portal which is hosted on INFLIBNET website. This is the pilot project of Indian Government on the recommendation of UNESCO. Hobbs[9] appraised that educators, curriculum developers and policymakers must consider five challenges when implementing programs in digital and media literacy. In modern society media has an impact for empowering people with knowledge. The significance of being information and media literate is to engage in a digital society; one needs to be able to use, understand, inquire, create, communicate and think critically. Ghosh[10] et al., describes media literacy and media education should be an integral part of the course curricula. A lack of media curriculum causes people get a wrong understanding of all the media information. Livingstone[11] describes that Media Literacy research is highly multidisciplinary and associated with the subjects of Social sciences, Technology, and Information science, Skills of pedagogy and Computer competencies. He also added that policy makers are trying to scale down the problems to emancipate the academics for promoting Media and Information Literacy.

3. OBJECTIVE

To study the students' attitude towards Media Information Literacy curriculum if, proposed for pedagogy across the programme and courses in higher education.

4. HYPOTHESIS

There is no significant difference with respect to MIL curriculum based pedagogy between the programme and across the institutions.

5. RESEARCH METHODOLOGY

The present study is of a descriptive in nature and is based on the primary and secondary data. The data was collected through structured questionnaire distributed to the targeted population of 22095 students of selected IITs (IIT Delhi, IIT Kanpur and IIT Roorkee) of North India and a sample of 1054 students across the programme was collected by using stratified random sampling method. Collected data was edited, coded and processed with the help of Statistical Package of Social Science (SPSS) software version 22.0 in statistics, analysis of Variance (ANOVA) was used to evaluate whether there are differences between the average value, and mean, across several population groups. The chi-square (x^2) was also used to test the goodness of fit whether a significant difference exist between the observed number of responses and an expected number of responses based on the null hypothesis (H_0) in each category or class.

6. DATA ANALYSIS AND INTERPRETATIONS

6.1 Proposition of MIL Curriculum

The scale reliability results for proposition of MIL curriculum is as shown in Table 1 the results show Cronbach's Alpha of 0.986. The results are valid as Cronbach's Alpha must be greater than or equal to 0.7. The mean of 8.4820 shows out of 20 if all variables are loaded at Likert Scale 5. It explains 42.41 percent of the construct. It validates the content, face, and discriminate validity.

The respondents were asked whether the MIL curriculum should be included in the course. Table 2 clearly indicate that lowest percentage of the students are agreed to include the MIL curriculum in the course. This reveals that majority of the

Table 1. Proposition of MIL curriculum Scale Statistics for UG, PG and Ph.D. programs

Items Statistics	Mean	Std. Deviation	Variance
MIL Curriculum	2.1243	.79929	.211
MIL Implementation	2.1072	.79462	.453
MIL Optional Paper	2.1433	.85366	.695
MIL Curriculum Skill	2.1072	.77404	.442

Cronbach's Alpha= 0.986, Scale Statistics (Mean= 8.4820, Variance= 9.963, SD= 3.1564)

students either rejected the proposition of MIL curriculum for regular study or was not in the position to make a decision on the issue.

Table 2. Response on proposition of MIL curriculum in the course in per centage

Items Statistics	Yes	No	Can not say
MIL Curriculum	26.47	34.63	38.90
MIL Implementation	26.76	35.77	37.48
MIL Optional Paper	30.27	25.14	44.59
MIL Curriculum Skill	25.14	38.99	35.86

A model curriculum of MIL has prepared by UNESCO with a holistic approach having modules of skills and competencies that is to be studied in schools, universities with some modification according to the local variance for preparing the students for their best survival and thrival in the digital world. In this regard the respondents were asked whether MIL curriculum should be implemented in all courses/programmes. Table 2 exhibits that majority of the respondents were not firm on the issue of MIL curriculum implementation.

Engineering programme is a special programme especially in IITs where students are overburdened due to profound curriculum of the course. In these circumstances an additional proposal of MIL paper in optional mode is another load for them. Keeping this in view, the respondents were asked whether the MIL curriculum should be introduced as an optional paper to improve their critical thinking. Table 2 shows that majority of the students keep silent on the issue of optional paper of MIL.

MIL is a composite concept and has comprehensive cross curricular skills and competencies for enhancing digital abilities and critical thinking of the students for the best survival in the digital world. The respondents were asked whether the MIL curriculum will be fruitful to enhance cross curricular skill of the students. Table 2 shows that that majority of the students discarded that the MIL curriculum hardly be helpful to improve cross curricular skills of the students.

6.2 Outcome of MIL Pedagogy

Table 3 shows that the calculated value of F of the level MIL curriculum one of the components of pedagogy with attributes. Empower students is smaller than the tabulated value of F i.e. 3.84 at the level of 0.05 significance. Therefore, null hypothesis (H0) is accepted for these factors. It is concluded that there is no significant difference in the mean of perceived level of MIL curriculum one of the component of pedagogy and does not differs significantly across the students of different programme (UG, PG and PhD). However, attribute prepares students and media democracy is greater than the tabulated value of F, i.e. 3.84 at 0.05 level of significance. Therefore, null hypothesis (H0) is rejected for these factors. It is concluded that there is significant difference in the mean of perceived level of MIL curriculum one of the component of pedagogy and differs significantly across the students of different programme (UG, PG and PhD)

MIL curriculum one of the components of pedagogy response and chi-square for the students programme (UG, PG and PhD) is shown in the Table 4. The results show that the item group empower students responses - maximum preference is for agree (61.4 %). Item group prepare students responses - maximum preference is for agree (66.8 %). Item group media democracy responses- maximum preference is for agree (70.0 %). Also, the chi-square is significant at level more than 95 per cent. Hence, there is an agreement regarding applicability of these variables of the study.

Table 5 shows that the calculated value of F of the level MIL curriculum one of the components of pedagogy with attributes Empower students and prepares students is smaller than the tabulated value of F, i.e. 3.84 at 0.05 level of significance. Therefore, null hypothesis (H0) is accepted for these factors. It is concluded that there is no significant difference in the mean of perceived level of MIL curriculum one of the component of pedagogy and does not differs significantly across the institutions. However, attribute media democracy is greater than the tabulated value of F, i.e. 3.84 at level of significance 0.05. Therefore, null hypothesis (H0) is rejected for these factors. It is concluded that there is significant difference in the mean of perceived level of MIL curriculum one of the component of pedagogy and differs significantly across the Institutions.MIL curriculum one of the components of pedagogy response and chi-square for across the Institutions (IIT Delhi, Roorkee and Kanpur) is shown in the Table 4. The results show that item group empower students responses- strongly disagree (15.4 %), Agree (61.4), Neutral (5.5 %), Disagree (12.0 %), strongly disagree (5.8 %). Here maximum preference is for agree. Item group prepare students responses- strongly agree (13.9), agree (66.8 %), Neutral (6.3 %), Disagree (8.7 %) strongly disagree (4.4 %) Here maximum preference is for agree; Item group media democracy responses- strongly agree (14.3 %), agree (70.0%), neutral (3.9%), disagree (6.8%) strongly disagree

Table 3. Outcome of MIL Pedagogy Scale Statistics and ANOVA for UG, PG, and PhD programs

Items statistics	Mean	Std. deviation	Corrected Item-total correlation	ANOVA (UG, PG, and PhD groups)					Remarks (F≥3.84 at 0.05 level of significance)
				Sum of squares	Df	Mean square	F	Sig.	
Empowers students	3.6860	1.05367	0.700	4.492	2	2.246	2.027	.132	Not significant
Prepares students	3.7704	0.94404	0.786	11.164	2	5.582	6.327	.002	Significant
Media democracy	3.8197	0.93154	0.770	12.590	2	6.295	7.342	.001	Significant

Cronbach's Alpha= 0.869, Scale Statistics (Mean= 11.2761, Variance= 6.815, SD= 2.611)

Table 4. Outcomes of MIL Pedagogy Response and Chi-square for UG, PG, and PhD programs

Variables	Rating	Programme UG N (%)	PG N (%)	Ph. D. N (%)	Total N (%)	Chi-Square (df; C)
Empowers Students	Strongly Disagree	37 (3.5)	20 (1.9)	4 (0.4)	61 (5.8)	
	Disagree	69 (6.5)	35 (3.3)	22 (2.1)	126 (12.0)	
	Neutral	25 (2.5)	19 (1.8)	14 (1.3)	58 (5.5)	33.885
	Agree	397 (37.7)	171 (16.2)	79 (7.5)	647 (61.4)	(8; . 000*)
	Strongly Agree	84 (8.0)	69 (6.5)	9 (0.9)	162 (15.4)	
	Total	**612 (58.1)**	**314 (29.8)**	**128 (12.1)**	**1054 (100.0)**	
Prepares Students	Strongly Disagree	30 (2.8)	12 (1.1)	4 (0.4)	46 (4.4)	
	Disagree	52 (4.9)	20 (1.9)	20 (1.9)	92 (8.7)	
	Neutral	31 (2.9)	21 (2.0)	14 (1.3)	66 (6.3)	32.621
	Agree	424 (40.2)	198 (18.8)	82 (7.8)	704 (66.8)	(8; .000*)
	Strongly Agree	75 (7.1)	63 (6.0)	8 (0.8)	146 (13.9)	
	Total	**612 (58.1)**	**314 (29.8)**	**128 (12.1)**	**1054 (100.0)**	
Media emocracy	Strongly Disagree	33 (3.1)	15 (1.4)	4 (0.4)	52 (4.9)	
	Disagree	36 (3.4)	17 (1.6)	19 (1.8)	72 (6.8)	
	Neutral	22 (2.1)	8 (0.8)	11 (1.0)	41 (3.9)	48.829
	Agree	447 (42.4)	204 (19.4)	87 (8.3)	738 (70.0)	(8; .000*)
	Strongly Agree	74 (7.0)	70 (6.6)	7 (0.7)	151 (14.3)	
	Total	**612 (58.1)**	**314 (29.8)**	**128 (12.1)**	**1054 (100.0)**	

Results are based on nonempty rows and columns in each innermost suitable.
*. The Chi-square statistic is significant at the 0.05 level.

(4.9%) Here maximum preference is for agree. Also, the chi-square is significant at level more than 95%. Hence, there is an agreement regarding applicability of these variables of the study.

7. FINDINGS OF THE STUDY

Table 2 shows that only 26.47 per cent students are interested to study MIL curriculum as part of the course. 26.76 per cent students accepted that MIL should be included in all programmes as a compulsory subject. 30.27 per cent students of the opinion that MIL curriculum should be taught as an optional paper in the course. 25.14 per cent students are of the opinion that integration of MIL curriculum in pedagogy will be fruitful to improve the cross curricular skills of the students.

Tables 4 and 6 shows that 61.4 per cent students are agreed and support that MIL curriculum oriented pedagogy may empower them to understand the world through text and visual communication. 66.8 per cent of the students are agreed that MIL curriculum pedagogy prepares the students for global communications and social participation. 70.0 per cent of the students agreed that MIL curriculum based pedagogy empowers the media democracy across the programme and across the institutions respectively.

Table 5. Outcomes of MIL pedagogy scale statistics and ANOVA across the institutions

Items Statistics	Mean	Std. Deviation	Corrected Item-Total Correlation	ANOVA (Between combined: IIT Delhi, IIT Roorkee, IIT Kanpur) Sum of Squares	Df	Mean Square	F	Sig.	Remarks(F≥3.84 at 0.05 level of significance)
Empowers Students	3.6860	1.05367	0.700	1.442	2	.721	.649	.523	Not significant
Prepares Students	3.7704	0.94404	0.786	1.422	2	.711	.797	.451	Not Significant
Media Democracy	3.8197	0.93154	0.770	7.185	2	3.592	4.165	.016	Significant

Cronbach's Alpha= 0.869, Scale Statistics (Mean= 11.2761, Variance= 6.815, SD= 2.611)

Table 6. Outcomes of MIL pedagogy response and Chi-square across the institutions

Variables	Rating	IIT Delhi N (%)	IIT Roorkee N (%)	IIT Kanpur N (%)	Total N (%)	Chi-Square (df; C)
Empowers Students	Strongly Disagree	19 (1.8)	23 (2.2)	19 (1.8)	61 (5.8)	
	Disagree	38 (3.6)	37 (3.5)	51 (4.8)	126 (12.0)	
	Neutral	16 (1.5)	21 (2.0)	21 (2.0)	58 (5.5)	
	Agree	199 (18.9)	197 (18.7)	251 (23.8)	647 (61.4)	
	Strongly Agree	56 (5.3)	65 (6.2)	41 (3.9)	162 (15.4)	
	Total	328 (31.1)	343 (32.5)	383 (36.3)	1054 (100.0)	13.323 (8; .101)
Prepares Students	Strongly Disagree	18 (1.7)	18 (1.7)	10 (0.9)	46 (4.4)	
	Disagree	34 (3.2)	35 (3.3)	23 (2.2)	92 (8.7)	
	Neutral	19 (1.8)	18 (1.7)	29 (2.8)	66 (6.3)	
	Agree	206 (19.5)	211 (20.0)	287 (27.2)	704 (66.8)	
	Strongly Agree	51 (4.8)	61 (5.8)	34 (3.2)	146 (13.9)	
	Total	328 (31.1)	343 (32.5)	383 (36.3)	1054 (100.0)	28.470 (8; .000*)
Media Democracy	Strongly Disagree	19 (1.8)	19 (1.8)	14 (1.3)	52 (4.9)	
	Disagree	34 (3.2)	33 (3.1)	5 (0.5)	72 (6.8)	
	Neutral	16 (1.5)	16 (1.5)	9 (0.9)	41 (3.9)	
	Agree	204 (19.4)	212 (20.1)	322 (30.6)	738 (70.0)	
	Strongly Agree	55 (5.2)	63 (6.0)	33 (3.1)	151 (14.3)	63.695 (8; .000*)
	Total	328 (31.1)	343 (32.5)	383 (36.3)	1054 (100.0)	

Results are based on nonempty rows and columns in each innermost subtable.

*The Chi-square statistic is significant at the 0.05 level.

8. CONCLUSIONS

Traditional education is transforming rapidly into media oriented education system. Information is embedded into various media formats. e.g the Internet, television, radio, computer, kindles, multimedia, mobiles etc. The Internet has revolutionised the whole world. Information availability has become easier but accessing the relevant information and evaluating the media message into meaningful information is very difficult. In the report of new media consortium (NMC 2017), Becker[12] reported that technological development has made radical change in higher education and impacts the teaching, learning and creative enquiry across the globe. Education system can attain maturity by healthy co-existence of media, technology, processes and people. The proposition of MIL curriculum in this regard across the programme and courses has its benefits in higher education. Introduction of media and information literacy curriculum in higher education system will help the students to improve their critical thinking abilities for analysing, evaluating the media messages to survive and thrive better in the digital world and prepares them for global communication and social participation.

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In the current study, she has contributed in research methodology and carried out the statistical analysis.