



Influence of Social media on academic performance of management students in Ahmedabad

KEYWORDS

Social Media, Educational impact, academic performance, management students, Learning Effectiveness

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ABSTRACT *This study evaluates the influence of social media on management students' academic performance which uses networking as vital mode for developing conventional education system. Data from 60 students of Masters of Business Administration (MBA) have been analysed and how social media related to students' performance, has been tested. Initially the guiding social media variables have been positively related to the students' academic performance in the class as well as outside the class. Oppositional variables have been negatively correlated with most of the students' academic performance. Additionally, the guiding and oppositional social media variables are good determinants for integrated academic performance; although, the oppositional social media variables are not much influential on the students' academic performance. Friendship related variables do not prove to be good determinants of students' academic performance. End results on the students' performance are also discussed*

Bird's eye view:

The growing penetration of internet and social media in the students' life has been a major concern of the educators, edupreneurs and the parents in recent times. Totally 3 new ways of education delivery makes management education distinctive. **The Adjunct mode:** using social media to enhance conventional education system; **the mixed mode:** utilizing social media as a vital portion of a conventional classroom teaching; and **the pure online mode:** utilizing social media as the prioritised medium of education for the entire program. The third type i.e. the pure online mode has grasped most of the attention in the study.

The effectiveness of the academic delivery is a major concern in online education system. Some negative influences like lowering member satisfaction, increased time to finish the given tasks, and lowering the group effectiveness were also found during the study. The isolated feeling of an individual might also have been a hindrance in pure online mode of learning. As such a lot has been researched on the adjacent mode of learning; there exists a huge scope for research in terms of effectiveness of online method.

The literature review do support the effectiveness of the asynchronous mode of learning to provide the learners more ease and flexibility, create novel ideas and aid learning in a better manner. As per Benbunan Fich and Hiltz, students studying in asynchronous network delivered better performance to case analysis although they were not much happy with the process of interaction in the same. The research of Picciano concluded that the online interaction had strong correlation with the written assignments but they were not correlated to the final result of the students.

The online interactive learning has also been studied and vital interaction differences have been found when compared with conventional behaviours of the students. As a popular approach for studying the human relations, social media has been utilized in the study to counter the social media's impact on the students' performance as compared to the conventional method of learning.

Influence of social media on academic performance of management students

Many literatures have been stressing on the study that the individuals are embedded in societies. The social structure is usually associated with vital outcomes including job performance, innovation, and power and learning outcomes. As per the social media approach, the behaviour of an individual is affected more by the type of relations and network than by the norms or attribute that the management students may hold. This exchange of resources is being called as "relations" in social media. Both, positive as well as negative are supposed to be related to the student's performance. It looks sensible to analyse the influence of these three social networks on student's performance both online and offline. Being the centre of attraction is the most vital concept in social media analysis. Usually, it is very common fact that if an individual is central to the group, he is the most popular student of the group and gets most of the exposure. It will be interesting to study the relationship between an individual's pivotal role in social media network (friendship, advising, and oppositional networks) and their performance in the class as well as in the forum.

Close Friends network

Any two persons can be friends only if and when their paths cross. They are required to meet before they can mate with each other. There are higher chances for them to meet if they share the same institute, neighbourhood, or work environment or they interact on social media. Hence an individual, central in a friendship network has relatively better opportunities to approach the resources which are vital to the successful academic performance. Usually, friendship networks sometimes involve access to information in direct or indirect manner and it has been confirmed that the friendship network does effect on student academic performance.

H0a: There is a significant positive association between close friends social media network and academic performance in the conventional management education.

H0b: There is a significant positive association between close friend social media network and academic performance in the online education

Well wisher network:

Well wisher networks include the relations by which students share various resources like various information, academic assistance & guidance which are related to their academic work. The well-wisher network is more instrumental-oriented than is the friendship network which is more social-oriented. The Centrality in the well wisher network shows the students' involvement in exchanging resources in the process of problem solving. A student who is central in his well wisher network is capable of accumulating information, knowledge, and experiences about task-related problems, and hence he is likely to perform better in the the classroom setting.

Hypothesis 2a. Individual centrality in well wisher network is positively related with individual performance in the traditional instruction setting.

Hypothesis 2b. Individual centrality in well wisher network is positively related with individual performance on the online forum.

Oppositional Networks

Oppositional relations refer to those relations which does involve negative exchanges between individuals. These types of relations create anger and emotional distress. These have been demonstrated empirically to be harmful to individual performance and satisfaction. Hence, are negatively related to the academic performance. Based on the discussion, the given hypotheses are proposed:

Hypothesis 3a. Individual centrality in an adversarial network is negatively associated with individual performance in the traditional instruction setting.

Hypothesis 3b. Individual centrality in an adversarial network is negatively associated with individual performance in the online forum.

Research Method

Samples and Procedures:

Sixty management students who went through the course, Masters of Business Administration at the SAL Institute of Management, Ahmedabad were studied. This course comprised of the combination of traditional lectures, research paper reading, text book cases and live case discussions. Totally, 15 teams were formed: consisting four individuals in each team. Each of the team was required to write a live case and to present the same class and further develop discussion questions and analyse them. Before each of the class, students were required to submit answers to some of the several pre class questions & they were required to participate in the discussions in the forum after each of the class. In each of the week the faculty had provided few debatable topics that can be discussed in the classroom. Students had the option to call other students for discussion of any case study related questions. A questionnaire was provided to all the students at the end of the semester. All the students responded aptly. Out of the sixty respondents, 38 were boys and 22 were girls. All the students were part of first semester of the MBA program.

Measures

To measure the social media variables, a questionnaire had been designed. There were seven items for measurement

individual centrality in various terms of well wisher network, friendship network and oppositional networks. Management students were asked to select few names from a given list of all management students. In total, 3 items had been analysed to gain relatively better and trustworthy measures of well wisher network instead of putting a single item which cannot be much reliable. The oppositional relations have been measured by asking the students 2 questions, which of the following students are complicated to maintain a healthy relationship with? Which of the students is difficult to get along with? We have considered four parameters in the academic performance: in the class performance, Forum performance, live case studies and end semester examinations. The performance of the forum was evaluated on the basis of the quality as well as the quantity of the posts. The score of posting quantity was computed as follows: A student has to post at least 11 times, each posting was given the score of 0.05 points, each of the additional post were counted (up to a maximum of 3 points). The qualities of the posts were subjectively judged by the faculty as per the various criteria like the usefulness of the post, soundness, creativity and much more. There was election of the best performers of the forum at the finish of the semester which was to be voted by all the students. The results of the election provided the faculty a vital reference for quality check.

Results

Factor Analysis

Network Variable	Factors		
	1	2	3
Well wisher 1	0.84	0.03	-0.23
Well wisher 2	0.70	-0.04	-0.19
Well wisher 3	0.76	0.12	-0.52
Friendship 1	0.62	0.10	0.69
Friendship 2	0.57	0.27	0.26
Oppositional 1	-0.19	0.87	-0.04
Oppositional 2	-0.16	0.82	-0.13

The normalized in degree centrality score have been adopted in the research because they are relatively easy to comprehend. The in-degree centrality has been a form of centrality which counts only those relations which have a focal student reported by other students. In the research, the seven item questionnaire was assigned to each of the student seven normalized in-degree centrality score that measured his prominence with reference to well wisher, friendship, and oppositional parameters.

Additionally, the factor analysis has been adopted to observe the social media variables. Results have been shown in the table 1. Totally 3 factors were observed given equal importance to each of them by using least square method. There are three factors that explains 86 % of the variance in the social media measures have eigen values greater than 1.0. The three well wisher network centrality items show high loadings (from 0.70 to 0.84) on the first factor, and the two oppositional centrality items show high loadings (greater than 0.82) on the second factor. However, the two friendship centrality items show inconsistent loadings on the first and third factors (from 0.26 to 0.69), which implies that the latent factor of friendship is not significantly different from that of the advice. Item 2 for measuring friendship "Whom will you invite if have a celebration, such as a birthday party?" was excluded from further analysis because few respondents in the study replied that they would ever hold a birthday party (this is probably

because our activity example, a birthday party, is not a custom in Chinese culture, although we used the phrase, "such as").

Relationship between Social Network Variables and Students' Academic Performance

In order to make the results more reliable and easy to understand, some of the factors were extracted for additional analysis. The relationship of students' performance in class and network factors has been computed with the use of Pearson correlation. Results in the table support the Hypotheses 1a and 1b because significant relations do exist between friendship factor coefficients and academic performance indicators. The psychological function of companionship is basically supported by the function on Friendship. Being the centre of attraction in friendship can possibly give the student a better opportunity of gaining access to the knowledge and information, although he might not be aware about it or might take advantage of the same.

The centrality in friendship can relate to the learning outcome, not only in the classroom but also on the forum still the effects can be via some dominant variables like emotion and learning motivation and/or the well wisher network centrality. With the same logic, some of the very famous management student in the class might not necessarily perform exceptionally better than others. As per the table 2, hypotheses 2a and 2b are corroborated. Central-

ity in well wisher networks had been related in a positive manner to the scores in the class participation and also on the forum. In a sense, an individual: who was at the centre in the wellwisher network was expected to perform relatively better in the discussion in the classroom as well as in the online forum. Even though the well wisher centrality had not been significantly related to final exam results and also with the case study performance. An individual's final exam grade is no doubt related to several variables such as effort, ability, and so on. Thus, the effect of well wisher centrality might be weakened by other uncontrolled factors in the current study. In addition, the case study performance has also been related more to the team performance since the live case study and its further discussion questions were written and also prepared by all of the team members.

Results in the Table 2 also support partially to Hypotheses 3a and 3b. The centrality in oppositional network has been negatively related to all the indicators of academics. In spite of this, only final exam scores and the overall grades were significantly related to oppositional centrality. The thin relations made oppositional centrality a relatively less dominant index. To conclude, all the hypotheses have been partially supported in this study. Friendship centrality and well wisher centrality were positively related to student performance in the classroom as well as on the online forum, and oppositional network centrality was negatively related to students' academic performance, though some of them were insignificant in the study.

Descriptive Statistics and correlations between Network Factors and Performance Variables

No		Mean	SD	1	2	3	4	5	6	7	8
1	Well wisher	--	--	1.00							
2	Oppositional	--	--	0.00	1.00						
3	Friendship	--	--	0.70*	0.06	1.00					
4	Grade	74.43	7.52	0.41*	- 0.34*	0.47*	1.00				
5	Case	79.86	9.52	0.05	-0.17	0.11	0.48*	1.00			
6	Class Participation	92.36	8.97	0.42*	-0.11	0.39*	0.85*	0.33	1.00		
7	Endsem Exam	59.76	12.7	0.08	-0.44*	0.31	0.76*	0.27	0.55*	1.00	
8	Posting quality	2.07	1.24	0.62*	-0.14	0.47*	0.63*	0.03	0.61*	0.21	1.00
9	Posting quantity	2.87	1.32	0.41*	-0.23	0.49*	0.58*	0.14	0.51*	0.22	0.72*

*p< .05

The Network factors predicting academic performance

As per the discussion friendship centrality, well wisher centrality, and oppositional centrality have been related to academic performance. We need to find about any differences between the determinants. The table 3 shows the results of the regression analysis with a management student's overall score as dependent variable and network structure variables as the independent variables. As per the Table 3 well wisher network centrality was the best determinant of a student's grade, and adversarial centrality was another good predictor. These network factors can explain one fourth of the total variance. The results have been comparable to the findings by Sparrowe and colleagues. In the same research, well wisher network and hindrance network variables could explain 13 % of the variance in role performance and 10 % in extrarole performance, and 23 % of the total variance. This will be interesting to identify the most vital determinant of management students' performance on the forum. The tables 4 and 5 show the step by step regression results with the dependent variables forum posting quantity (determined by the number of postings) and posting quality. As shown in the tables, wellwisher network was the best determinant

of a student's performance on the forum, both quantity and quality. Well wisher network variables could explain 20% of the variance in posting quantity performance, and 34 % in posting quality performance.

In comparison with the results in Table 3, oppositional network centrality was not included in the prediction of management student performance online. A justified explanation is the effects of oppositional network was relatively weak in the forum. Due to the distance in space and time the effects of a negative relationship were not much influential in the offline settings. One more difference does exist between the forum posting performance both on quality and quantity. Forum posting performance is measured by quantity and quality, could have been determined to an extent by well wisher network variables. Still, the well wisher network has been accounted for more variance in posting quality than in posting quantity. The results have been attributed to the measurement by itself. The student performance quality in the discussion forum was analysed and evaluated subjectively by the subject faculty, and the quantity of performance was computed objectively by the total number of postings by an individual.

The Results of Regression Analysis for Network Centrality on result

	Partial Coefficient	Standard Error.	Standardized Coefficient	T	Significant Level
(Constant)	69.54	1.12		74.45	0.00
Wellwisher network	3.78	1.17	0.45	3.09	0.00
Oppositional network	-2.32	1.25	-0.33	-2.25	0.02
Overall adjusted R ²	0.25				
Overall F	7.21*				0.003

*p< .05

The Results of Regression Analysis for Network Centrality on Posting Quantity

	Partial Coefficient	Standard Error.	Standardized Coefficient	T	Significant Level
(Constant)	1.35	0.17		9.34	0.000
Wellwisher network	0.49	0.12	0.45	3.23	0.003
Overall adjusted R ²	0.20				0.000
Overall F	10.39*				0.002

*p< .05

The Results of Regression Analysis for Network Centrality Performance on Posting Quality

	Partial Coefficient	Standard Error.	Standardized Coefficient	T	Significant Level
(Constant)	1.50	0.22		7.23	0.000
Wellwisher network	1.02	0.24	0.62	4.57	0.000
Overall adjusted R ²	0.34				
Overall F	20.64*				0.0000

*p< .05

Discussion

As an important element of learning, the interpersonal relationship can influence the exchange of information and knowledge and even may enhance motivations of learning. Such role cannot be easily replaced by merely computer technology. In case of pure online form of learning, the exchange of information and social support with others can enhance student performance and satisfaction. All this indicate that the interpersonal interactions play a vital role in online learning system.

The relationship between network structure and student performance might be reciprocal, i.e. there can be no implicit causal relationship behind this relationship. As the class period was only three hours per week, we might get inference that most of the friendship and oppositional networks have been developed after the class. Most of the discussions in the class were one too many (faculty to students). Hence, although the management students were motivated to show their knowledge during the class, but the well wisher network could not be developed. Still on the forum, the discussions were many to many (group discussion). All the members of the group were free to express their opinion and knew that the mentor was watching how valuable the opinions were or the information that they provided to all other members of the forum. The well wisher network could naturally be evolved over time. This might explain why the well wisher network centrality is the best determinant for explaining performance variance. Since the management students' social network was developed before the final learning outcomes, we emphasize the tentative proposition that a social media exerts its impact on effectiveness and learning processes though there is no true causal relationship that has ever been established in this study. If knowledge is mainly constructed

by the way of interaction among management students and between students and their faculty, then interactions among students should be strongly supported and encouraged.

Limitations

The study also possesses several potential limitations. The major concerns are the validity of performance measures. Few activities were required for students in the course: live-case preparation, in the class discussion and online and in final exam. Although, there are no objective measurement scales for performance in all of these activities. Even though some criteria were already set up, such as the best performers on the forum elected by all students, to cross-check the validity of performance measurement on online, there could exist bias in an individual's ratings. Another issue is about our regression analyses that imply that network structure phenomena precede the student's performance. Though the relationship of individual performance and network structure can be reciprocal. Lastly only one class participated in the research and the subjects were post graduate students in the Gujarat Technological University. Hence there can always be a genuine question as whether the sample truly represents the population of the university or not and proper care must be put while generalizing the result of this study on the population.

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