

THE ROLE OF SMAC (SOCIAL MEDIA, MOBILITY, ANALYTICS, CLOUD) FOR STUDENTS AND EDUCATORS IN ONLINE EDUCATION

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ABSTRACT

Supporting the global gearing towards the combined technology, SMAC (Social, Mobility, Analytics, and Cloud), the present research intends to collect the view of the key players in the domain of online education. That is, the opinion of the students and instructors about the efficiency of SMAC as a good solution in online education is tested. A rich sample of 400 students and 30 instructors are selected at random for this purpose. The analysis is carried out in two stages. After having the profile study of both the students and instructors separately regarding the knowledge about SMAC and the interaction between SMAC and OU, differences in the opinions are tested. Hypotheses are framed to test the version of the participants regarding the current and future interaction rates of SMAC and tested at 5% level of significance. The results showcased the discrepancies in opinion with respect to the profile of the participants. Also, the results obtained from both the set of participants for current and future interaction rates about the SMAC usage did not coincide. Pertinent conclusions are made by identifying the weak areas. Theoretical and managerial implications are advocated for alleviating the difference in the views of the study participants in the online university platform.

Keywords: *Social, Mobility, Analytics, Cloud, SMAC, Online University (OU)*

1. INTRODUCTION

Social, Mobility, Analytics, and Cloud (SMAC) are individual platforms and technologies which have been grown very fast in the last few decades [1][2][3][4]. These four technologies together called SMAC and are able to spearhead today's industries and allied fields by creating competitive advantage. As in the case of other domains, SMAC is creating its own mark in pedagogical approaches by its enhanced means of communication [5][6][7][8][9]. In online education mode, the people are from different locations, countries and even continents. One of the main problems of such education is interaction and communication among the stakeholders – public, university staff and students.

The dependency among these groups is marching towards successful outcomes with the support of SMAC approach. As this approach ensures effective communication (through sending and receiving messages at a faster pace) with integrated technologies. That is, if a student sends a message to the instructor using SMAC approach, the instructor can receive it via SMS, Facebook message or any other notifications based on the configurations and settings [10][11][12]. Thus, the

increased interaction and communication among the key players in online education platform keep the members updated with the latest information using SMAC technology [13][14][15] which in turn leads to increased satisfaction of students [16][17][18][19]. Having understood this, the present research intends to test the extent of SMAC approach utility in online universities so as to increase the interaction among university, instructors, and students. This opinion is gathered from the version of both students and instructors of the online universities.

To meet the objective of the study, respondents who are part of any online education platform like: administrators at the online university, instructors in an online university, and students in online university are considered. The study tool, a questionnaire is mailed to the randomly selected members. Though the study is mainly based at Liverpool University UK, the questionnaire is shared with 420 students across various online universities. In order to assess the opinion of the stakeholders of the online university platform in an unbiased manner, a separate questionnaire is shared with 35 instructors as well. Among the selected respondents, 400 students and 30 instructors

provided required feedback in the form of a filled questionnaire. The results from both the versions are analysed and apt inferences are drawn. Results of this study can be generalised for any online education platform across the globe.

2. REVIEW OF LITERATURE

According to [20], communication issue in the online universities is the key factor that can lead to student's dissatisfaction. In online education system, communication between the involved parties is very critical because it involves various types of interactions at different levels in the university [21]. The following are some of the instances that can lead to chaos because of miscommunication in online education platform:

- Academic staff relationships,
- Students support with technical and education issues
- Course documents, time table, plans and so on
- Announcements and news update
- Interactions between student and instructor within a module
- Financial fees, payments, updates, pending fees and so on
- Evaluation feedback

According to [22], no matter whether the class is face-to-face or online or even both, the success can be evaluated based on the quality of interaction and communication among students, instructors, and university. Discussing the synopsis of the research study, 'Measuring and Improving Teacher-Student Interactions', conducted at Virginia University [21], it is mentioned that there is a positive association between the quality of student-instructor interaction and the success of online education strategies [23] [24]. It is also affirmed by the version of [25], who highlighted the necessity for the online universities to re-design their courses in much innovative manner.

2.1. SMAC Definitions

[26] proposed the definition of Mobile-cloud computing. It is, mobile-cloud computing is, 'The co-execution of a mobile application within the expanded mobile/cloud computation for all platforms to optimize an objective function'. According to [27], 'Social media is a broadly used term that describes any technological systems connected to community and collaboration'. Analytics is defined as the data management, statistical analysis, predictive and descriptive

models to get insights and perform in complicated issues [4] [28].

[11] opined that in order to increase the interaction in the online university, there should be a channel to post questions, discussions, and feedback. To encourage this culture, a quick response system is very much mandatory [29] [30]. According to the report of [31] based on the survey named, 'The 2008 Student Communications Focus Group and the National Student Survey and Student Satisfaction', the feedback and the replies from the instructors to the students is identified as the prime factor to foster highest student satisfaction. In addition, [25] mentions that being able to reach the other students and instructors anytime is identified as another key factor for better participation of students.

Highlighting the importance of the channel of communication, the report of University of New Hampshire Student Union reveals that around 53% of the students use Facebook more than once in a day for updates from the university. Yet, [32] of University of New Hampshire found from his study that 96% of university students use Facebook, which does not disturb their studies in a negative way at all, rather more helpful for getting better results in examinations [33][34] [35]. [36] explained the extent of benefits that the student community is gaining in education, because of the availability of mobile phone technology. It is given by their research work that 49% of the students are using smartphones for education, 35% from them have apple accounting and most of them are looking to receive all the modules as well as university information to their phones.

In addition to the above-mentioned channels, the most preferred mode of professional communication is the emails. Every member of any online university should have a university email in order to receive all information about the university. However, studies proved that students regularly ignore university emails, fail to see them, add filters to direct the mails to the junk folder or simply delete them [37]. Therefore, this can cause a communication issue because the email is the most used tool for information delivery. For example, announcements service which is very important to deliver information to university members. Statistics from the [21], shows that the university posts are less viewed than the number of students visited the website.

Scholars established that interactive design models of online classes and education can increase the interaction and communication between student community and instructors [38] [39] [40] [41]. Effective models in the domain of distance education are proposed by [42], who highlighted the significance of interaction along with the means to increase the facilities of interaction among participants using the third generation of the online technology to increase the quality of education. However, [43] share that in spite of the positive outcomes of internet technology and social networking, the disinterest of the instructors to update themselves with the technology is the main hurdle for the interaction with students.

However, burgeoning technologies for mobile computing development, natural language dispensation, voice recognition, augmented reality, decision making and machine learning have evolved to cater the information needs of the people along with minimization of response times [45] [46] [47]. The attractiveness of cloud computing coupled with the growing interest in massive open online courses (MOOC's) which are hosted on clouds naturally led to the potential of virtual universities in the cloud [48] [15]. The research done by [49] mentions that OLMS (Online Learning Management System) which is delivered via cloud application using internet technologies has the compatibility for global access. In addition to the economical approach, OLMS also advocated for better interaction among stakeholders [5].

2.2. Significance of SMAC

[50] provides an overview of SMAC and explains how Social, Mobile, Analytics and Cloud are integrated as SMAC and witnessed major trends in technology [51]. The article by Shelton (2013) also added to this by discussing the use of SMAC in business. By and large, the research community encourages internet users to maximize the outreach by exploiting the SMAC technology, rather confining to individual sources [52] [53]. In the journal regarding SMAC, [54] mentions that social, mobile, analytics, and cloud are the cornerstone technologies that spearhead the global innovation strategies.

Appraising the benefits of SMAC, the usage of these technologies have spread into all emerging global fields. For instance, SMAC witnessed a major shift that has occurred in the fields like healthcare, banking and others [48] [53]. Everywhere, it is acknowledged that technology

like SMAC accommodates existing technologies along with deploying emerging applications [11] [50].

Figure 1: Linkages in the process of SMAC utilization

Figure-1 enunciates the model of SMAC utilization in the field of online education. The dependency on SMAC technology for integrating the information and hence increase the communication among the stakeholders of the online universities can be understood from the figure. However, as the present study intends to test the influencing factors for the knowledge about SMAC as well as the interaction between SMAC and Open University (SMAC-OU) by using the profile of the students and instructors of online university, the following working model is adopted. The variables considered to assess the profile of the participants are work experience, type of online university, education level and age. In addition to appraise the impact of the influencing factors, the study also assesses the association between the knowledge about SMAC and the SMAC-OU interaction.

Figure 2: Working model of the Study

The following literature review table enlists the topics reviewed along with the reference and relevance of the topics. This work out not only helps to glance the reviewed concepts but also explains the relevance of each topic.

Table 1: Literature Review Table

Having understood the linkages in the process of interaction between students and the online university along with the literature reviewed, the research work heads to the analysis part of the research work. The following is the methodology adopted for performing the analysis.

3. MATERIAL AND METHODS

In online education, the people are based in different locations, countries and even continents. One of the main problems of such education is interaction between people and communication about the vital issues regarding modules, payments and other news. So, there is every need for a better communication channel among the Instructors, Administrators as well as students. With the growing knowledge about the requirements of the domain of education, the present study collected

information from 400 students and 30 instructors. The study tool, structured questionnaire is designed and shared with the students through email. The questionnaire is designed such that the opinion of the all the stake holders pertaining to this platform is deduced. This information is segregated under two heads – Knowledge about SMAC and Interaction between SMAC and OU.

The study tool deals with the participants separately. That is, information from the students is collected at first and then from the instructors. First part of the questionnaire consists of general information of the participants. In this, the opinion of participants regarding the Current Interaction as well as Future Interaction among Online university participants is drawn, so as to find a solution to enhance the communication in the university. In next part, inputs related to SMAC are sought. The reason to include questions related to SMAC is to assess the level of knowledge that the people have about SMAC. By and large, the research tool questionnaire is designed in such a way that a good solution to increase the interaction in online education is administered with the help of SMAC technology.

During the first level of analysis, the data is analysed using basic statistical technique like frequency tables to know the proportion of ‘Knowledge about SMAC’ and the ‘Interaction between the SMAC and OU’ and during the second stage, the difference in the opinion of the students and instructors with respect to current and future interaction rates of SMAC is estimated with the help of independent sample t-test. Hypotheses are framed accordingly and the results of the analysis are tested at 5% level of significance. Advanced statistical package SPSS 21.0 is used for this analysis. The following figure-3 explains the procedure followed to achieve the aim of the study.

Figure 3: Flow of the Research Work

4. ANALYSIS

The analysis adopted for the research work comprises of both qualitative and quantitative methods. Using these methods the information requirements of the students as well as instructors can be met. Also, the extent of influence that the SMAC has on in online education communication system is understood by this exercise. The sample of the study comprises of the members involved in online education (students across various countries

and instructors of online universities). Both the parties, students and instructors are chosen from different backgrounds, basing on their involvement in online university platform. This workout aided to map a real experience in interaction and communication within the university. Hence, the number of the participants selected for the research are - 400 students and 30 instructors. The collated data is segregated with respect to two constraints, the ‘Knowledge about SMAC’ and ‘SMAC-OU Interaction’. Analysis considered the students at first and then the instructors.

4.1. View of Students

Below is the data collected and tabulated in these lines to assess the percentage of students who have knowledge about the SMAC as per the university that the students belong to. It can also be observed that in total, all the students from nine online universities participated in the study.

Table 2: Response for Knowledge about SMAC by Online University Students

The results given in the above table reveal the relative proportion of students who belong to various universities and possess the knowledge about SMAC at various levels. That is, among all the online universities, students of Athabasca University possess more (44%) knowledge about SMAC technology and students belonging to Online Walden University responded in maximum percentage (47%) that they have nil knowledge about SMAC. On the other hand, it is found that students of Online Liberty University are majorly indifferent (43%) with this technological development. Similarly, the opinion of the students from various online universities about SMAC and OU interaction is furnished in the following table.

Table-3: Response for SMAC-Online University Interaction by Online University Students

The version of the students collected regarding the interaction between SMAC and Online University is given in above table-3. A glance at the table reveals that the student of the Phoenix Online University rated maximum interaction (45%) between SMAC and OU. Also, Online Roehampton University students replied negatively to the interaction in high percentage (47%). It can even be observed that the students of Online Liberty University are highly indifferent (42%) with these

kind of development ventures. After having the university wise student opinion regarding the main study constraints, the analysis dealt with profile wise response about the study constraints. The following two tables 4 and 5 present the view of the students about the knowledge about SMAC as well as SMAC-OU interaction.

Table 4: Response about the Knowledge about SMAC by Demographic Profile

The review about the age-wise segregation of the student feedback about study constraints decipher that students with younger age are more abreast of latest technological developments. That is, students with less than 30 years have more knowledge (29%) about the SMAC artefact. Similarly, education is found to have positive relation with the knowledge about SMAC. Compared to the students with bachelor and post-graduate level qualification, students with doctorate degree and higher are more equipped with the knowledge about the SMAC. But, surprisingly the experience is found to have inverse relation with the possession of SMAC knowledge. The reason for the high acquaintance about SMAC technology of the students who have experience below one year could be the budding nature of this technology.

Table 5: Response about the SMAC-OU Interaction by Demographic Profile

In the same lines, table-5 depicts the demographic profile wise view of the students regarding SMAC-OU interaction. It can be observed from the age wise distribution of the response that students of age between 31-40yrs, highly support the SMAC-OU interaction than their counterpart. However, the students with age between 40-50yrs are more indifferent to this technology and its benefits. Notwithstanding this, the students in this age have mostly nil backing to SMAC. The lack of awareness could have been contributed to their indifferent ness for the benefits of this technology. As in the case of the knowledge about SMAC, it can be observed that compared to students with low level of educational qualifications, students with Ph.D and other degree extend their support to SMAC-OU interaction. But, to the surprise the proportion of the students with Ph.D. and other degree is higher for all levels of responses of SMAC-OU interaction (No and No difference - 46% and 49% respectively).

4.2. View of Instructors

Below is the data collected and tabulated in these lines to assess the percentage of instructors who have knowledge about the SMAC as per the university. This knowledge is grouped at three levels – thorough Knowledge, basic knowledge and no idea. It can also be observed that in total, the study comprises of instructors from four universities only. The response of the instructors for their knowledge about SMAC is tabulated below.

Table 6: Response for Knowledge about SMAC by Online University Instructors

The results given in the above table reveal the relative proportion of instructors of the four universities with respect to their knowledge about SMAC. It can be observed that Online Liberty University instructors have more knowledge (50%) about SMAC than their counterparts. Majority of instructors (60%) from Online Liverpool University are found to have basic knowledge about SMAC and Online Liberty University instructors responded in high proportion (33%) that they have no idea about SMAC. Similarly, the opinion of instructors from various online universities about SMAC and OU interaction is furnished in the following table.

Table-7: Opinion about SMAC-Online University Interaction by Online University Instructors

The opinion of the instructors collated regarding the interaction between SMAC and Online University mentions that the instructors of Massachusetts University have more positively (43%) opined about the interaction. Also, Online Liberty University (67%) instructors are highly indifferent to technological deployment. It can even be observed that the staff of Online Walden University are much lagging behind in technological upgradation that 43% of them felt that SMAC and OU interaction is not required. The following two tables 8 and 9 present the feedback of the instructors about the knowledge about SMAC as well as SMAC-OU interaction as per their profile.

Table 8: Response about the Knowledge about SMAC by Instructor Profile

The review about the age-wise segregation of the instructor feedback about study constraints decipher

that instructors with age 40-50yrs are more abreast (40%) of latest technological developments. Similarly, as in the case of student's feedback, education is found to have positive relation with the knowledge about SMAC. Compared to the staff with bachelor level qualification, doctorate & higher degree holders are more equipped (60%) with the knowledge about the SMAC. In addition, the instructors with bachelor degree are found in high proportion (67%) with nil knowledge about this technological venture. But, surprisingly the experience of the instructor is found to have negative impact on the possession of SMAC knowledge. That is, compared to highly experienced instructors, staff with less experience are found to have through knowledge about SMAC.

Table 9: Opinion about the SMAC-OU Interaction by Instructor Profile

In the same line, table-9 depicts the profile wise view of the instructors regarding SMAC-OU interaction. It can be observed from the age-wise distribution of the response that as in the case of students, instructors aged more than 50yrs, highly support (56%) the SMAC-OU interaction than their counterpart. However, the staff with age between 40-50yrs are found more indifferent (38%) to this technology and its benefits. As in the case of the knowledge about SMAC, it can be observed that compared to instructors with low level of educational qualifications, Ph.D. & other degree holders (67%) extend their support to SMAC-OU interaction. But, the relation between experience and support to SMC-OU interaction is found to be surprising. That is, instructors with less experience extend more support (33% for less than a year and 1-3yrs experience) to SMAC-OU interaction. Also, it is to be observed that high level (35%) of negation for SMAC-OU interaction has come from the instructors with more than 5 years of experience.

4.3. Difference between the views of Students and Instructors

In addition to the above analysis to know the relative proportion of opinion of the students as well as instructors with respect to current and future interaction rates using SMAC, the study checks whether there is difference in the view of the two groups. So, t-test for independent samples is conducted to know about the current and future interaction rate with SMAC.

The null hypotheses to test this difference in views is given as:

H01: There is no significant difference between the opinion of students and instructors with respect to knowledge about SMAC

H02: There is no significant difference between the opinion of the students and instructors about the interaction between SMAC and OU

The following table-10 furnishes the output of t-test for difference of means with respect to both study constraints.

Table 10: t-test for difference of opinion between students and instructors about Current Interaction Rate with SMAC

From the above table - 10 and the Levene's test table, it can be understood that there is no much difference between the mean rate (mean = 2.41 and SD = 0.40 for students; mean = 2.30 and SD = 0.39 for instructors) for current interaction between both the groups. Also, the p-value of Levene's test is greater than 0.05. This advocates to accept the equal variances assumed. It implies for the approval of the null hypothesis H01 and its concerned postulate that there is no significant difference in the ratings given by students and instructors regarding the current interaction rate with SMAC.

Table 11: t-test for difference of opinion between students and instructors about Future Interaction Rate with SMAC

From the above table - 11 and the Levene's test table, it can be understood that there is difference between the mean rates (mean = 2.01 and SD = 0.46 for students; mean = 1.82 and SD = 0.49 for instructors) for future interaction between both the groups. The p-value of Levene's test is less than 0.05. This advocates to reject the equal variances assumed. It implies for the approval of the alternative hypothesis H02 and its concerned postulate that there is significant difference in the ratings given by students and instructors regarding the future interaction rate with SMAC.

5. CONCLUSION

The research conducted to understand the role of SMAC in online education brought many issues

into limelight which are to be given preference in the contemporary technology oriented society. The study sample is selected from both students and the instructors so as to mitigate all kinds of biasedness. Thus, the sample collected by deploying the necessary criteria like, heterogeneity of participant background and others fetched a sample of 400 students and 30 instructors of online universities. The opinion of both the parties collated is segregated with respect to two constraints, the 'Knowledge about SMAC' and 'SMAC-OU Interaction'. The two-step analysis (frequency tables and t-test for independent samples) considered the students at first and then the instructors. Hence, the uniqueness of the study is, it furnished the views of both students and instructors separately.

The participating students represented nine online universities. On one hand, students of Athabasca University possess more knowledge about SMAC technology and on the other hand, maximum proportion of students belonging to Online Walden University percentage have nil knowledge about SMAC. Similarly, considering the interaction between SMAC and OU, students of the Phoenix Online University supported maximum and Online Roehampton University students replied most negatively. So, along with acknowledging the initiative of online universities that keeps their students abreast of the technological developments, it is important to expedite the reasons for the technological backwardness of other online universities. In addition, exploring the causes for the universities that are laggards in this run can certainly take the online education system by leaps and bounds. Understanding the influence of factors like age, experience and education can help to frame customized strategies for encouraging students and instructors from various backgrounds to update on par with latest developments.

In addition to this workout, the study tested for difference of opinions between the students and instructors with respect to the current interaction rate as well as future interaction rates of SMAC. Though it is commendable to observe that there is no difference in the opinion of both the parties with respect to current interaction rates, a difference in opinion regarding the future interaction rate of SMAC persists. This scenario suggests theoretical and managerial implications of the research study.

5.1.Theoretical implications

Technological upgradation in all fronts is a continuous process and it is much more important for such upgradation in online education sector. As the online mode of education caters to plethora of students far and wide, robust theoretical models to update the staff as well as students with SMAC oriented methodologies is the need of the hour. At the same time, the necessity for strict mechanisms to curtail the mushrooming online universities that share substandard level of knowledge is to be recognized. Though the global populace is well versed with the individual technologies like Social, Mobility, Analytics and Cloud, the knowledge about the benefits of SMAC is sparse. So, this research paper reminds the role of research community in developing theories and models so as to unleash the fruits of SMAC not only to the online education sector, but also to other sectors, globally.

5.2.Managerial implications

SMAC technology, being in emerging stage needs a proactive venture of managers at all levels in the organizations across the world. In particular, it is established that there is no common consensus regarding the role of SMAC technology in online education among the stake holders – students and instructors of universities. So, it is the role of managers to educate all the key players in this domain regarding the fruits of SMAC technology. Since technology is ever changing, chalking a process development continuum from time to time and empowering the concerned managers and in-charges can uplift the awareness levels of the beneficiaries. The disparities in awareness levels that are persisting with respect to personal profiles of the students and staff of online education sector can also be nullified with the effective role of managers not just at micro level, but also at macro level.

5.3.Limitations

In spite of the care taken to collect the study samples in a representative manner, instructors from only four universities participated in the study. As more representation from all universities can provide a better picture about the SMAC usage in the respective institutions, future studies can consider this while collecting the study sample. Technological development of any region or

country majorly depends on the local factors. So, rather organizing this kind of study for various online universities across countries at once, studying regions specific factors for the spread of SMAC among the online universities can give much deeper insights. This workout certainly unveils many factors like social, cultural, demographic and economic that hinder the spread of SMAC technology and helps to prepare tailored strategies for educating the nations.

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Tables and Figures

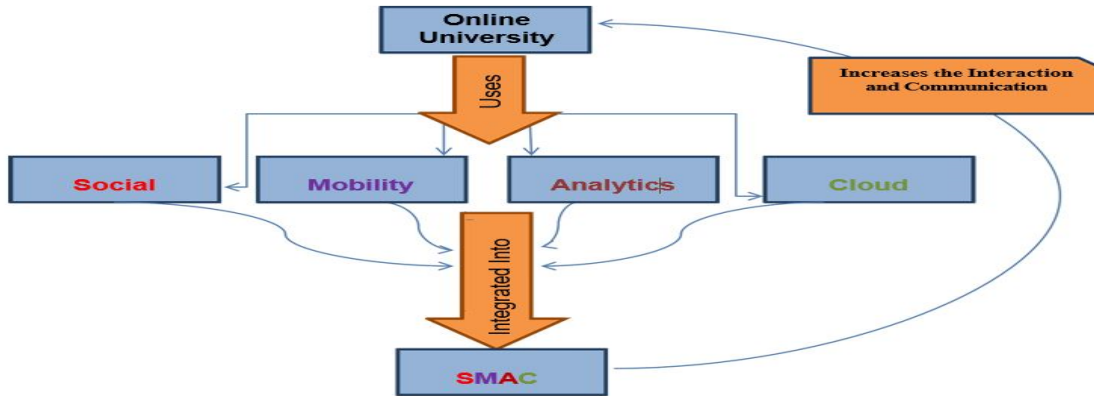


Figure 1: Linkages in the process of SMAC utilization

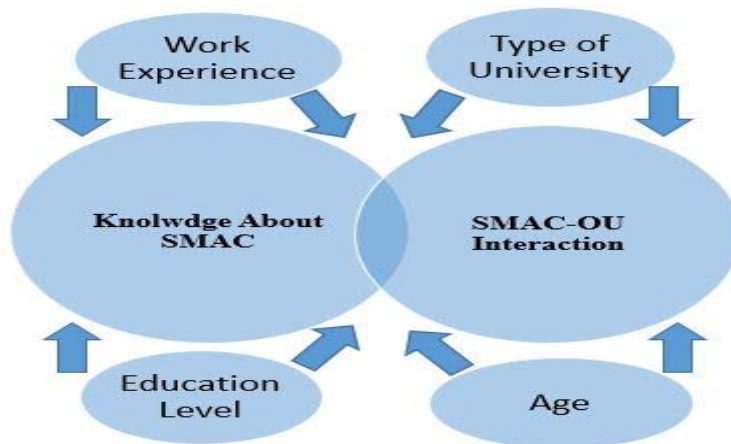


Figure 2: Working Model Of The Study

Table 1: Literature Review Table

Factor	Reference	Relevance
Communication issue in online universities	[6] [15] [21] [20] [7][55] [56] [57] [58] [59][91]	Communication issue in online universities is a key factor that may lead to a bad level of students and dissatisfaction in the overall system. So communication in online university has issues and attention and quick action is needed so SMAC can be the solution
Interaction between the students and instructors, allied issues	[11] [29] [30] [22] [40] [41] [5] [60] [61] [62] [63] [64][65] [70][92]	The interaction between the student and the instructor is critical component of the quality of online learning. The interaction is a key factor in the quality of online learning so it needs a solution to be increased.
Student’s communication satisfaction	[34] [16] [6] [31] [25] [66] [67] [68] [69] [70] [93]	Many of the instructors confess that they don’t know how to increase the online interaction with students. So SMAC may be a solution to increase the online interaction with students.
Using Facebook by students	[33] [11] [12] [34] [35] [32] [71] [72] [73] [74][75][94]	53% of students nowadays are using Facebook more than one time a day. Other university found that 96% of its students uses Facebook and that their usage of Facebook is not affecting their studies in a negative way at all
Using Mobile by students	[51] [47] [48] [26] [36] [76] [77] [78] [79] [80]	49% of the students are using smart phones, 35% from them include apple accounting and most of these students want to receive all module and university information into their phones.
Interactive online discussion	[38] [23] [24] [11] [41] [81] [82] [83] [84][85]	Electronic environment can be arranged for actual social constructivist education that needs “interactive online discussion”. So Social media can be implemented in online universities.
Usage of third generation of the online technology and analytics in education system	[4] [5] [50] [54] [86] [87] [88] [89] [90]	The third generation of the online technology increases and facilitates the interaction in the online university. So SMAC can be the most dependable technology for analytics and can increase the interaction in online universities

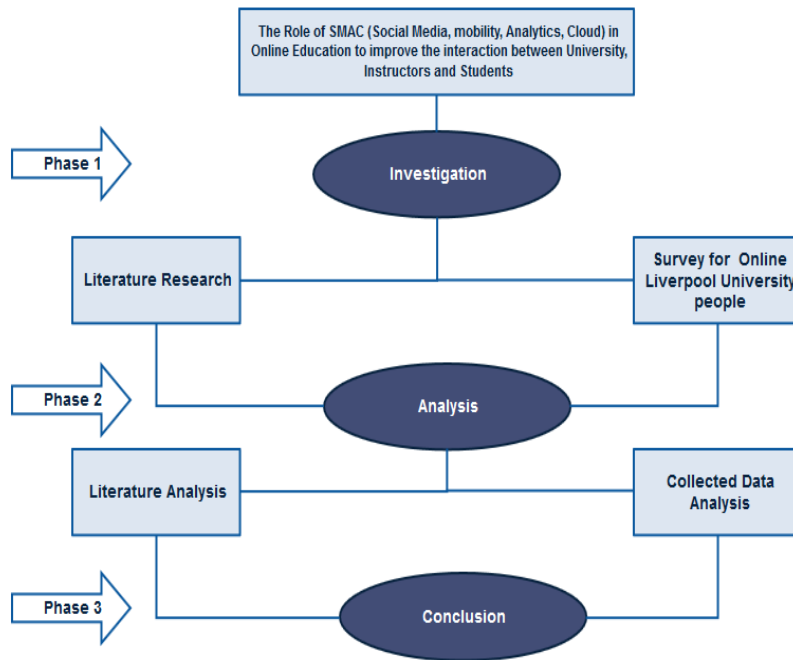


Figure 3: Flow Of The Research Work

Table 2: Response For Knowledge About SMAC By Online University Students

	Knowledge about SMAC		
	Yes (%)	No Difference (%)	No (%)
Online Liverpool University	24	34	42
Online Liberty University	38	43	19
Online Roehampton University	27	38	35
Kaplan University	30	35	35
Online Walden University	28	25	47
Ashford University	38	24	38
Massachusetts University	29	31	40
Phoenix Online University	40	25	35
Athabascau University	44	33	23

Table-3: Response For Smac-Online University Interaction By Online University Students

	SMAC-OU Interaction		
	Yes (%)	No Difference (%)	No (%)
Online Liverpool University	32	32	36
Online Liberty University	28	42	30
Online Roehampton University	29	24	47
Kaplan University	30	35	35
Online Walden University	37	37	24
Ashford University	38	24	38
Massachusetts University	29	33	38
Phoenix Online University	45	30	25
Athabascau University	22	33	46

Table 4: Response About The Knowledge About SMAC By Demographic Profile

	Knowledge About SMAC		
	Yes (%)	No Difference (%)	No (%)
Age			
Less Than 30	29	24	21
31-40	27	29	23
40-50	21	27	31
Greater Than 50	24	21	25
Education Level	12	13	11
Bachelor	31	28	28
Masters	24	24	24
PhD and Other	45	48	48
Work Experience			
less than a year	32	23	26
1-3 yrs	20	30	25
3-5 yrs	22	25	27
more than 5 yrs	26	21	22

Table 5: Response About The SMAC-OU Interaction By Demographic Profile

	SMAC-OU Interaction		
	Yes (%)	No Difference (%)	No (%)
Age			
less than 30	24	25	24
31-40	30	23	25
40-50	19	32	29
greater than 50	27	20	22
Education Level			
Bachelor	29	29	29
Masters	23	22	25
PhD and Other	48	49	46
Experience			
Less Than A Year	33	23	25
1-3 yrs	20	32	24
3-5 yrs	25	21	29
More Than 5 yrs	23	25	22

Table 6: Response For Knowledge About SMAC By Online University Instructors

	Knowledge about SMAC		
	Thorough Knowledge (%)	Basic knowledge (%)	No idea (%)
Online Liverpool University	30	60	10
Online Liberty University	50	17	33
Online Walden University	43	43	14
Massachusetts University	14	57	29

Table-7: Opinion about SMAC-Online University Interaction by Online University Instructors

	SMAC-OU Interaction		
	Yes (%)	No Difference (%)	No (%)
Online Liverpool University	40	50	10
Online Liberty University	33	67	0
Online Walden University	0	57	43
Massachusetts University	43	43	14

Table 8: Response About The Knowledge About SMAC By Instructor Profile

	Knowledge About SMAC		
	Thorough Knowledge (%)	Basic knowledge (%)	No idea (%)
Age			
Less Than 30	20	14	0
31-40	20	14	33
40-50	40	14	50
Greater Than 50	20	57	17
Education Level			
Bachelor	40	21	67
Masters	0	29	0
PhD and Other	60	50	33
Work Experience			
less than a year	50	36	17
1-3 yrs	20	22	0
3-5 yrs	20	21	33
More than 5 yrs	10	21	50

Table 9: Opinion About The SMAC-OU Interaction By Instructor Profile

	SMAC-OU Interaction		
	Yes (%)	No Difference (%)	No (%)
Age			
less than 30	11	6	40
31-40	11	31	0
40-50	22	38	20
Greater than 50	56	25	40
Education Level			
Bachelor	22	43	40
Masters	11	19	40
PhD and Other	67	38	20
Experience			
Less Than a Year	33	31	20
1-3 yrs	33	13	20
3-5 yrs	22	25	25
More Than 5 yrs	12	31	35

Table 10: T-Test For Difference Of Opinion Between Students And Instructors About Current Interaction Rate With SMAC

		N	Mean	Std. Deviation	Std. Error Mean					
Current Interaction Rate	Student	400	2.41	.406	.020					
	Instructor	30	2.30	.399	.073					
		Levene's Test for Equality of		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Current Interaction Rate	Equal variances assumed	0.363	0.547	1.467	428	0.143	0.113	0.077	-0.038	0.263
	Equal variances not assumed			1.49	33.67	0.145	0.113	0.076	-0.041	0.266

Table 11: T-Test For Difference Of Opinion Between Students And Instructors About Future Interaction Rate With SMAC

		N	Mean	Std. Deviation	Std. Error Mean					
Future Interaction Rate	Student	400	2.01	.460	.023					
	Instructor	30	1.82	.493	.090					
		Levene's Test for Equality of		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the	
									Lower	Upper
Future Interaction Rate	Equal variances assumed	.173	.678	2.118	428	.035	.185	.087	.013	.357
	Equal variances not assumed			1.994	32.893	.054	.185	.093	-0.004	.374