

# **Analysis of Factors Affecting Learner Participation in Asynchronous Online Discussion Forum in Higher Education Institutions**

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**Abstract:** *Online interactivity has been a problem in distance learning education at two levels: social and instructional. As it relates to instruction, there is near unanimity of opinions from published literature that there needs to be a "fine tuning" of the control of interaction within the instructional process. This pilot study attempts to understand what factor(s) actually affect learner participation in asynchronous online discussion forum in higher education environment. Primary data was collected using a semi structured questionnaire which was emailed to 90 academic staff and students of a typical UK university. 31% of questionnaires were returned. Data analysis was carried out using Microsoft Excel software. Descriptive and inferential statistical techniques were used to analyze the quantitative data. Findings indicate that nearly 85% of respondents do not use WOLF platform for engagement with their teachers and peers. Reasons given by student respondents for not using the platform ranged from lack of awareness to preference for other media with equivalent capabilities. A recommendation has been made for the redesigning of WOLF to integrate social media functions so as to enhance acceptability.*

**Keywords:** *Asynchronous discussion forums, online education, teaching and learning in higher education institutions*

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## **I. Introduction**

The Past decade has seen tremendous growth of online teaching and learning in higher education. Given the pace at which technology application in learning has grown, it is hardly surprising that research has continued to lag behind. Even though most underlying principles of teaching and learning still apply, online education is qualitatively different from traditional, classroom-based models (Enwistle and Waterston, 1988; Desanctis *et al.*, 2003). This is so because, all aspects of class room based discussion such as initiation, facilitation, conclusion and feedback, require different approaches when an asynchronous or time delayed discussion medium is used, as opposed to what happens in face to face contact (Groves and O'Donaghue, 2009). The absence of sufficient research and understanding of the very nature of online learning in higher education institutions, has thrown up the need for the subject to be examined more closely in order to generate knowledge that will help teachers and policy makers learn and make informed decisions about how to design and facilitate asynchronous learning interactions.

This pilot study will offer an initial step in that direction, using the Wolverhampton Online Learning Framework (WOLF) and two awards offered by the Faculty of Science and Engineering, University of Wolverhampton as case studies. The key research questions for this naturalistic study will be: "What are the main factors that influence student's participation in online forums on WOLF and does the design and facilitation of different types of asynchronous discussion activities impact student participation in terms of quantity, quality, timing, and nature of messages posted?" King (1998) promotes the idea that the design of social spaces is crucial to the success of computer-supported collaborative learning (CSCL). This idea has been re-echoed more recently in separate studies on the subject (Allen and Seaman, 2007; Groves and O'Donaghue, 2009). These preceding investigations will form part of the theoretical basis of the current research as it attempts to narrow existing gaps in knowledge and provide current data on teaching and learning in contemporary UK higher education environment.

## **II. Literature survey**

Garrison (2000) in the book "Theoretical challenges for distance education in the 21st century: a shift from structural to transactional issues, presents the case that theoretical developments in distance education were shifting from an emphasis on organizational issues to previously ignored issues of educational transaction. This development follows the realization that limiting effects of geography—the original impetus for distance education— has largely been eliminated with the advent of electronic communication technologies, along with learning theories predicated on this model. Wenger, (1998) in an earlier work, "Communities of practice:

learning, meaning, and identity” had argued that participation is an intrinsic part of learning. It has also been argued that learner participation may be enhanced by using computer mediated communication media in both traditional and e-learning settings (Haythornthwaite 2002; Garrison and Anderson, 2003). Literature also indicates that participation, which can be measured by the frequency of interaction with peers and teachers, has a positive effect on perceived learning, grades and quality of assignments. Part of the explanations for these results are that asynchronous text-based communication provides participants more time to understand peers’ ideas, think and create their own responses, edit and revise their postings (Yildiz and Bichelmeyer, 2003), and provide insightful reaction to others’ contributions (Black, 2005). In addition, Black (2005) contended that the writing form in asynchronous discussion might in some instances allow participants to take more risks and be more expressive than they would normally do when talking with peers in a traditional classroom setting. Discussion is usually considered a powerful tool for the development of pedagogical skills such as critical thinking, collaboration and reflection. Rourke and Anderson (2002) on the other hand, argue that discussion is an excellent activity for supporting the construction of knowledge, since explaining, elaborating, and defending one’s position to others “forces learners to integrate and elaborate knowledge in ways that facilitate higher-order learning” Deloach and Greenlaw, (2005) in their work, postulate further that learning develops in the light of social interactions: within a community, individuals are challenged to demonstrate their ability to question, analyze, synthesize, evaluate, and make decisions. In turn, other community members respond by suggesting justified and supported insights and criticisms that lead to solving problems and generating new ideas (Schumer, 2002). It has equally been argued that participation influences learner satisfaction and retention rates positively (Alavi and Dufner, 2005).

Several Researchers have investigated the relationship between Lecturer presence and student participation in the online learning environment, including (Mazzolini and Maddison, 2003) who examined the quantity of Lecturer and student posts on discussion boards to ascertain if there was any correlation between the number of Lecturer posts and the number of student posts. They found that while students did respond favorably to the perceived ‘enthusiasm’ of Lecturers who posted more frequently, there was no evidence to support the hypothesis that frequent Lecturer posts resulted in greater student participation; thus highlighting the need for further qualitative evaluation of the factors affecting learner participation as well as examination of the effectiveness of asynchronous discussion forums for learning and teaching (Mazzolini and Maddison, 2003). From the foregoing, there appears to be a convergence of opinion among researchers on the hypothesis “that online participation is a key driver for learning” even though their perceptions of how online participation may be conceptualised and the factors that affect learner participation in online learning could often vary widely.

Hrastinski (2008), in a more recent work, “A theory of online learning as online participation”, argues that online participation underlies online learning in a more powerful way than any other variable, consequently, if we are to understand online learning, we need a learning theory that views online learning as online participation. There is growing evidence from literature supporting the effectiveness of online discussion forums. Recently much has been written on participation in asynchronous discussion (Gerbic, 2006; Thompson and Savenye, 2007) including the effects of participation levels on learning outcomes, the relationship between participation levels and student satisfaction with the online class and the factors affecting participation levels. Webb *et al.* (2004) established a correlation between participation in asynchronous discussion forums and how well learners perform during assessments in online learning.

According to Moore and Kearsley (1996) there are three types of interaction in distance learning: learner-content interaction, learner-instructor interaction, and learner-learner interaction. In this respect, Winiecki (1999) argues that there are various spheres of difficulties found with asynchronous learning networks interaction and sees the possibility of losing track of the threaded discussions as a major issue. Gilbert and Moore (1998) posit further that interactivity online has been a problem in distance education at two levels (social and instructional). As it relates directly to instruction, they conclude that there needs to be “fine tuning” of the control of interaction within the instructional process. This pilot study is an attempt to understand what factor(s) actually affects learner participation in asynchronous online discussion forum in higher education environment.

### **III. Methodology**

In investigating the factors that influence learner participation in online discussion forum in Higher Education Institutions this study uses the Wolverhampton Online Learning Framework (WOLF) as a tool. To further the investigation, the following research objectives have been identified: (i) To review current and relevant literature on the use of online forum for learning and teaching in higher education in the UK. (ii) To synthesize factors that affect learner participation in online discussion forum using an online questionnaire survey (iii) To analyse how individual factors affect participation using appropriate statistical software (iv) To make appropriate deductions and recommendations based on results from data analysis. Primary data for this

pilot study was collected from lecturers and students registered on two awards in the Faculty of Science and Engineering:

1. Animal Behaviour and Wildlife Conservation: during lectures in the module, Conservation of Aquatic Vertebrates
2. Environmental Technology/Environmental Management: during lectures in the module, Sustainable Waste Management.

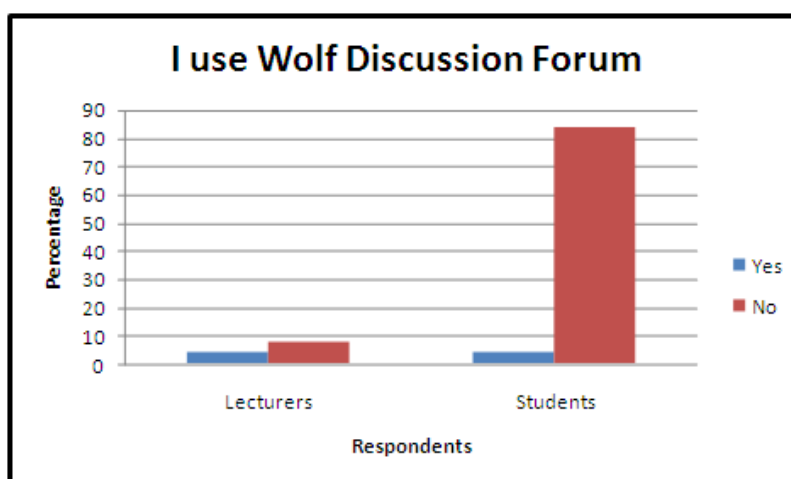
Primary data was collected using a semi structured questionnaire which was emailed to 10 academic staff and about 80 students who were registered on two modules offered in the case study awards during semester 1 of the 2013/14 academic session. Survey questionnaires were administered using “My Class” function on WOLF so as to be able to contact all the lecturers and students registered on the two modules and enhance the questionnaire return rate. The survey questionnaire sought to understand how lecturers and students use the discussion forum on WOLF, particularly how and why they use the discussion forum of their Wolf account for teaching and learning. In addition questions were also focused on lecturers’ previous experiences with online learning, teaching style, course design decisions, and anticipated outcomes from course events. The choice of questions was partly influenced by the concept of ‘Appreciative Inquiry’ research approach. According to Cousin (2009), this approach is particularly appropriate when collecting data on change management research. In focusing mostly on ‘positives’, appreciative inquiry, is able to avoid the problem-based approach to data gathering, thereby making it possible to discover and act upon this information, hence leading to anticipated change.

The pilot study has also been framed from both the positivist as well as interpretivist paradigms as it seeks both "explanations and predictions of human behaviour" and "understandings and insights in contexts that are held to be inherently too unstable for reliable predictions to be made"(Cousin, 2009 p.9). Recruitment of participants on the study was based on a simple random sampling of representative undergraduate and postgraduate awards. Simple random sampling is a basic type of sampling, because it can be a component of other more complex sampling methods. The assumption in simple random sampling is that every object has the same probability of being chosen. Both quantitative and qualitative data was collected in the process of the survey. Of the 90 questionnaires that were emailed to students registered on both awards, 28 were returned equivalent to 31%. This return rate is slightly higher than the norm for emailed questionnaires (Ezeah, 2010). Data analysis was carried out using Microsoft Excel software.

#### IV. Results

**Table 1:** Classification of Respondents

Lecturers	Students
3	25



**Figure 1:** Usage of Wolf Discussion forum

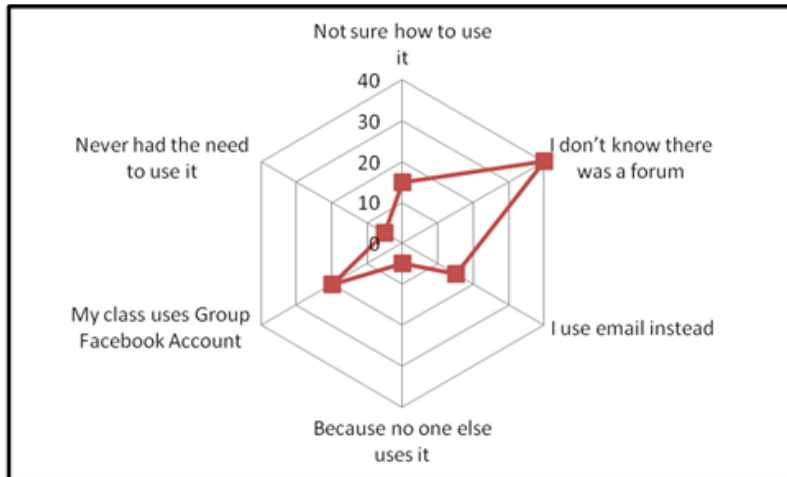


Figure 2: Reasons given by student respondents for not using Wolf Forum

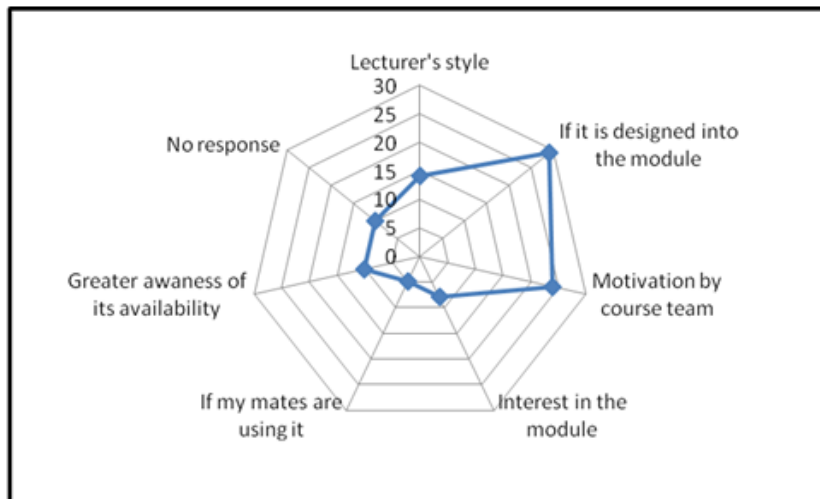


Figure 3: Factors that affect student's participation in asynchronous online discussion in higher education institution

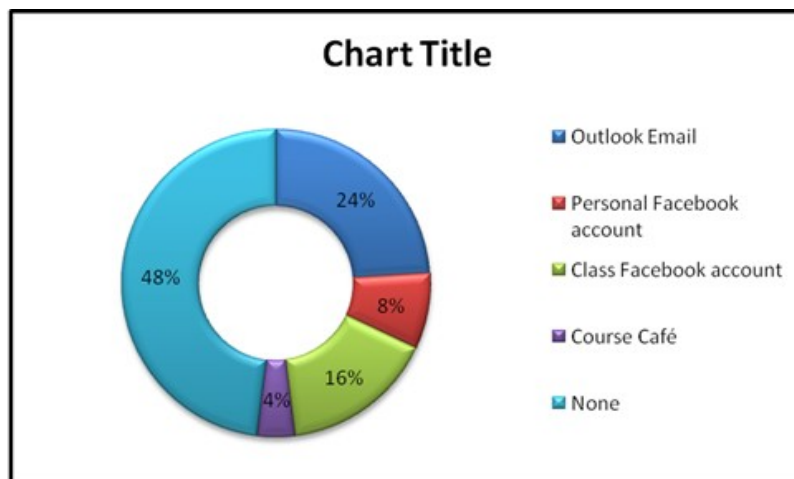


Figure 4: Other forums used by students for engagement

## V. Discussion

### i. Background of Respondents:

From Table 1(classification of respondents), of the total 28 respondents in this pilot study, three were lecturers while the remaining 25 were students. While 13 of the students were undergraduates, 12 were

postgraduate students registered on the MSc Environmental Technology award. Of the postgraduate respondents, 9 were male while 3 were females. Though there was no specific question to ascertain the nationality of respondents, going by name record, a preponderance of the undergraduates appear to be of UK/EU nationality while most of the postgraduates were of non-EU/UK nationality. In terms of respondents online habits, there did not appear to be any significant variations along the lines of educational attainment, gender or nationality. To this end, the author postulates that there appears to be insufficient evidence to support the assertion that usage of online discussion forums is a function of gender or ethnic background. This finding is in variance to results from Table. 2 after Topcu (2006), which found significant variation across gender line in a study that examined gender differences in online asynchronous discussion in Boğaziçi University, Turkey. There was however significant evidence in favour of the assertion that of the number of respondents, a marginally higher percentage of students (5%) said they used online discussion forum as compared with lecturers (3%). On the other hand from Fig.1, nearly 85% of student respondents said they have neither heard of Wolf forum nor used it before. This very high level of unawareness demonstrates the likelihood of deficiencies in terms of integration of technology into curricular design for both awards case studied.

**Table 2:** Distribution of the Interactivity with respect to Gender (Topcu, 2006)

Gender	<sup>a</sup> Interactivity Levels a (%)		
	EI	II	IS
Female (57)	42	60	55
Male (43)	58	40	45

<sup>a</sup>EI = Explicit Interaction; II = Implicit Interaction; IS = Independent Statement.

### **ii. Reasons given by student respondents for not using Wolf Forum**

Responding to question 5 on the questionnaire, 15 percent of the student respondents said they were not sure how to use it, 40% said they did not know there was a discussion forum on wolf, 15% said they preferred to use emails for contact, 20% said their class relied on a Group Facebook page instead, while 5% each said “they never had the need to use it” and “because no one else uses it” (see Fig. 2). From these responses, it becomes very clear that the level of awareness of this tool amongst respondents is rather very low. One of the possible ways to address this situation may be to purposefully educate both staff and students on the existence and capabilities of the forum as a means of intra class exchange of ideas. On the other hand, over a third of respondents indicated a preference for other methods of communication or interaction; this might be indicative of some short comings in Wolf Forum as a discussion tool. Without doubt current generations of students have become rather reliant on social media such as Facebook and Twitter even before they come to university. In that sense, Wolf forum is actually in some form of competition with other social media for the attention of users. To overcome this situation, it may be necessary for the designers of Wolf forum to reassess its capabilities so as to ensure that it is flexible and versatile enough to meet the diverse needs of an increasingly IT savvy student population (Ragan, 1999). In this way Wolf will be bringing together both the academic and social functionalities under one platform.

### **iii. Factors that affect student’s participation in asynchronous online discussion in higher education institution**

In response to question 7, respondents highlighted a number of factors that could affect students’ participation in asynchronous online discussion. Of the total number of student respondents, 29% were of the view that course designers and module leaders need to design-in the use of asynchronous discussion forum in the curricula in their modules, that is, to specify the use of Wolf forum for either collaborative work or as a tool for formative assessment if greater uptake of the tool amongst students were to be achieved. This provision they believed could be a key driver for changing students’ online behaviour. Understanding patterns of student behaviour can influence planning and scheduling of online assessment dates, as well as pre-reading and pre-tests to be slated during session breaks by lecturers (Burr and Spennemann, 2004). Another 24% of respondents were of the view that lecturers’ motivation is a key factor that could help influence students interest and complement where possible, module specification provisions. 14% of respondents named lecturers teaching style as a factor that could influence the use of online based discussion forums. In this respect, they believe that if the lecturer himself uses the forum frequently for dissemination of important information, most students will be willing to engage more online. From this survey, only a third of lecturers reported that they have ever used Wolf discussion forum. This might be indicative that as much as two thirds of lecturers in the university may either not be aware of Wolf forum or are not disposed to using it for teaching and learning. Actual figures can however only be ascertained during the main survey when a larger sample size would be surveyed. To address the issue of raising students’ awareness and uptake of the tool for teaching and learning, there is an urgent need to get lecturers themselves to buy-in and start using the forum more frequently. Other factors put forward as capable of

influencing the use of the forum for asynchronous discussion include: increasing awareness among students (10% of respondents), I will use it if other students are using it (5%), students interest in the module (8%). The rest 10% had no opinion on the subject at all.

Fig.4 is a chart indicating current students' preferences for engagement or discussion amongst their peers and teachers. This chart indicates a widening scope of choice for medium of communication. Even though the chart indicates that nearly a half of the respondents still do not use any online discussion media for engagement with their teachers and peers, there is equally an emerging reality that as much as 40% of student respondents now use social media for in-class academic engagement. This situation raises all sorts of questions including that of the ethics of using informal social media for serious academic activities.

## **VI. Conclusion**

This pilot study has tried to ascertain and analyse some of the factors that influence student use of Wolf forum for asynchronous discussion using students registered in two randomly selected undergraduate and postgraduate awards at the University of Wolverhampton. The sample is fairly representative of students who study at a typical UK higher education institutions. Findings indicate that nearly 85% of student respondents said they have neither heard of Wolf forum nor used it before for engagement with their teachers and peers. Reasons given by student respondents for not using the platform ranged from lack of awareness of its existence to preference for other media with equivalent capabilities that have integrated social functions thereby providing students a single opportunity to carry out social activities while working on their academic studies at the same time. Even though this preference for using social media to carry out academic work is becoming increasing popular, it raises many questions not the least being that of ethical acceptability and protection of academic integrity of awards. The research found out that a number of factors which influence online habits and preferences could help drive the use of Wolf forum amongst the students. Such factors include, designing in the use of Wolf forum in module specification templates, raising awareness of the capabilities of the forum, retraining lecturers to use the forum themselves and thereby being in a position to motivate their students to do same.

## **VII. Recommendations**

It is believed that mainstreaming the use of online academic platforms such as Wolf forum will not only increase student engagement but will also help increase student retention as well as achievement in UK higher education institution. To help achieve increased use of WOLF forum, the following recommendations have been put forward:

1. There is a need to redesign WOLF platform to make it more user friendly and to incorporate elements of contemporary social media.
2. Retraining of all teaching staff to be able to use the forum function on WOLF and hence be able to influence their students to do same.
3. Raising greater awareness of the forum among students and lecturers alike.

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