

## From the virtual forum to the classroom: developing cognitive engagement and critical thinking skills through online and face-to-face student discussions

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*Una gran parte de los profesores de lengua y literatura que utilizan las nuevas tecnologías en el aula afirman que los foros virtuales dan cabida a una enorme variedad de estilos cognitivos y consiguen que los estudiantes interactúen con el material del curso de un modo dinámico y no-jerárquico. Mediante el uso del foro, los estudiantes mejoran visiblemente sus técnicas de argumentación y desarrollan su pensamiento crítico participando directamente en la construcción del conocimiento. Los foros virtuales contribuyen a redistribuir las relaciones de poder en el aprendizaje, las cuales vienen produciéndose tradicionalmente de una manera unidireccional (con el profesor generalmente dominando el debate crítico y los estudiantes buscando su aprobación o directamente parafraseando su opinión). En este artículo planteo que además de reforzar la capacidad crítica y de fomentar la colaboración en la construcción del aprendizaje, el uso del foro virtual también puede contribuir a dinamizar considerablemente la participación oral de los alumnos en el espacio físico del aula. Las técnicas discursivas adquiridas a través de la plataforma virtual pueden reforzar la autoestima del estudiante y animarle a transferir su producción escrita a un formato oral en un ámbito más tradicional: el debate. De este modo, una herramienta informática principalmente textual puede ayudar a desarrollar tres de las competencias lingüísticas y cognitivas: la escritura, la lectura, y la expresión oral.*

*Palabras clave: foros virtuales, participación oral, colaboración en el aprendizaje, herramientas informáticas en el aula.*

*Most language and literature instructors agree that virtual forums accommodate different thinking styles in a more flexible manner, making*

*students engage the course material from a non-hierarchical and dynamic perspective. Through their use of the forum, students improve argumentative and critical thinking skills and collaborate in the construction of knowledge. Virtual forums thus clearly contribute to the redistribution of power-relations, which, in the classroom, tend to be unidirectional (with the instructor generally leading the discussion and students actively seeking his/her approval). In this article I further argue that the students' use of the virtual forum has an increasing positive effect on their oral contributions to face-to-face classroom debates. In fact, the writing and thinking skills developed through the use of this online platform strengthen the student's self-confidence and their ability to contribute oral output in a more traditional environment. Thus, a text-based forum may help develop three language learning skills: writing, reading and oral expression.*

*Keywords: computer-mediated communication, face-to-face participation, virtual forum, collaborative learning.*

*Parmi les professeurs de langue et de littérature qui ont recours aux nouvelles technologies dans l'enseignement, beaucoup affirment que les forums virtuels admettent une très grande diversité de styles cognitifs et permettent que les étudiants interagissent avec le matériel de formation d'une façon dynamique et non-hiérarchique. Grâce au forum, les étudiants améliorent sensiblement leurs techniques d'argumentation et développent une pensée critique à travers une participation directe dans la construction des connaissances. Les forums virtuels contribuent à redistribuer les rapports de pouvoir dans l'apprentissage, qui sont traditionnellement unidirectionnels (où le professeur domine le plus souvent le débat critique et les étudiants se limitent à rechercher son approbation ou à paraphraser l'avis de l'enseignant). Dans cet article, il est suggéré qu'au delà du renforcement de la capacité critique et de la collaboration dans la construction de l'apprentissage, l'utilisation du forum virtuel peut également contribuer à une forte dynamisation de la participation orale des étudiants dans l'espace physique de la salle de classe. Les techniques de discours acquises au moyen de la plateforme virtuelle sont susceptibles de renforcer l'estime de soi de l'étudiant et de l'encourager à transférer sa production écrite à un format oral dans un cadre plus traditionnel: le débat. Ainsi, un outil informatique éminemment textuel peut contribuer à développer trois compétences linguistiques et cognitives : l'écriture, la lecture et l'expression orale.*

*Mots-clé: forums virtuels, participation orale, collaboration dans l'apprentissage, outils informatiques en salle de classe.*

## Introduction

In the past two decades there has been an explosion in the amount of studies concerning CMC (Computer-Mediated-Communication) and its potential uses both in online, and traditionally taught higher education

courses. Many of these studies have specifically focused on the role that virtual forums can have as vehicles that increase students' participation in two ways: by improving their collaborative skills and their active involvement in the construction of knowledge, and by strengthening their own autonomous learning processes. Through an appropriate use of the forum, students enhance their critical thinking skills and reach a higher level of cognitive engagement with the subject matter. Although some authors are still wary of the putatively positive results that stem from these forums (Thomas 2002), most instructors and researchers concur that the forum significantly improves the students' autonomous and collective performance in the classroom – encouraging them to not merely transmit but to dialogically construct knowledge.

Online forums accommodate different thinking styles in a more flexible manner; they improve argumentative skills, transfer the sophistication of text-based lexical and syntactical expression to virtual communicative debates, and clearly contribute to the redistribution of power-relations which, in the classroom tend to be unidirectional – with the instructor generally leading the discussion and students actively seeking his/her approval (Warschauer 1995-6; Richards 2000; McLuckie and Topping 2004; Moore and Marra 2005).

The following paper aims to describe the various uses of the “virtual forum” tool, an online space fostering debate and critical development, which can be found in most *blackboard* learning systems. During the past year I implemented this online platform as part of the mandatory learning assessment of three upper-level literature and translation courses at the University of Valencia (Department of English Philology), and obtained a variety of interesting and at times surprising results. Overall, as I had expected, virtual forums proved to be an effective channel for enhancing foreign language acquisition in a creative manner by strengthening two of the main language skills: written expression and reading. Additionally, they contributed greatly to the development of critical thinking skills, providing the students with additional opportunities to formulate contextualized and thought-provoking output (as well as a continuous revision and questioning of material covered during the lectures and reading activities) that helped them (and me, the instructor) to add to the subject's content in an autonomous but also a collaborative manner.

Computer-Mediated Communication differs from FTF (Face-to-Face Communication) in that it is asynchronous and text-based, thus allowing for deeper reflection and analysis by giving students a longer time frame for reaction and for the formulation of critical output of a higher order (Moore and Marra 2005: p.192). Face-to-Face interactions in the classroom are, on the other hand, synchronous, more spontaneous and heavily instructor-guided.

Whereas most articles in the field of CMC deal with forum discussions taking place in web-based courses (online education) as an alternative to traditional oral discussions, or merely as isolated text-based tools that

contribute to foster interactivity and collaborative learning in the classroom, in this essay I argue that virtual forums ultimately help to improve face-to-face discussions in the classroom. In other words, virtual forums and synchronous debates in the classroom can feed off each other, with the text-based vehicle providing further opportunities to enhance, *additionally*, ESL students' oral skills and enabling them to perform in face-to-face environments.

### Study of a Virtual Forum and its Effects on the Learning Community

For the purpose of this study, I will focus on forum contributions from only one of my high level courses, *Pre-19<sup>th</sup> Century British Theatre*, a mandatory literature course that students of English Philology take in their 4<sup>th</sup> or 5<sup>th</sup> year. This course is divided into two semesters and therefore can supply ample evidence of the students's development through a significantly long period of time, a span of nine months, from October 2007 to June 2008.

Although officially there were 108 students registered in the classroom, only seventy-five took the final exam and around sixty attended class regularly from the beginning (average for a late evening section at our department). Given that some students registered merely because of an administrative requirement, but never came to class nor to the final exam, I take the figure of seventy-five (the total amount of students that actively took the course, that is, who came to the final exam) as the basis for my study. Sixty-five percent of these students were women and thirty-five percent men, with their ages ranging between 21 and 45 (the average being 22-23 years old). By the end of the year, of these seventy five-students (with sixty attending classes regularly): thirty one of them had participated actively in the forum, nineteen students participated in face-to-face classroom discussions, and sixteen participated actively in both (see table 1). Represented numerically, 41.3% of students participated habitually in the forum (versus only 25.3% in classroom discussions) with an average of 5 postings per person, and with both forum and face-to-face discussion activity visibly increasing in the second semester.

TABLE 1. STUDENT PARTICIPATION IN THE VIRTUAL FORUM AND IN FACE-TO-FACE DISCUSSIONS

	<i>Students participating in the Forum</i>	<i>Students participating in Classroom Discussions</i>	<i>Students participating in both Forum and Classroom</i>
<i>First Semester</i>	28% (n=21)	6.6% (n=5)	5.3% (n=4)
<i>Second Semester</i>	41.3% (n=31)	25.3% (n=19)	21.3% (n=16)

Moreover, of 183 postings, developed through 93 discussion threads, 34.3% occurred in the first semester and 65.7% took place in the second semester (see table 2 and figure 1). Significantly, face-to-face participation in the classroom also increased by 18.7% going from 5 students in the first semester to nineteen in the second semester.

TABLE 2. PERCENTAGE OF POSTINGS PER SEMESTER

	<i>Academic Postings</i>	<i>Housekeeping, Peer-Assistance, Social Postings</i>	<i>Total # of Postings</i>
<i>First Semester</i>	25.6% (n=47)	8.7% (n=16)	34.3% (n=63)
<i>Second Semester</i>	59.6% (n=109)	6.1% (n=11)	65.7% (n=120)
<i>Total # of Postings</i>	85.2% (n=156)	14.8% (n=27)	

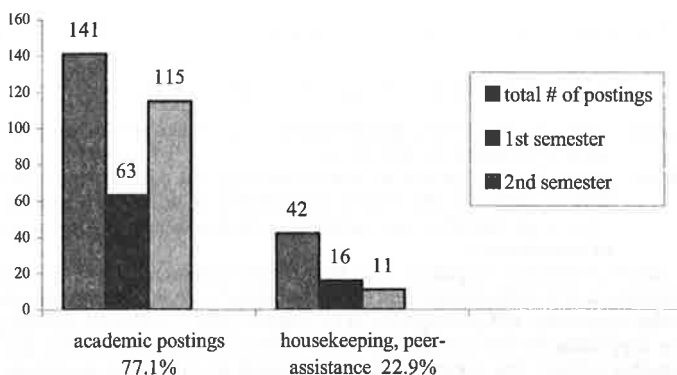


Figure 1. Number and Type of Postings per Semester

In my opinion, student participation and active engagement with the material as the semester progresses is of the utmost importance. Therefore, I had assigned 10% of the final grade to student contributions made either in the classroom or through the virtual forum. As the semester went by, most students who began by participating only in the forum also began participating in face-to-face discussions in the classroom. This substantial increase of nearly 20% is due to several reasons: first, the students clearly started to feel more comfortable with the instructor and with each other, which led to less inhibition in the classroom. However, face-to-face participation of shy or visibly unmotivated students was dramatically higher once I started to transfer the information contained in the forum's postings to classroom discussions. In late November, I began to incorporate students'

comments into my general lesson-plan. I acknowledged student-commentators openly, compared their grounded opinions to published critical reviews of the texts, and occasionally asked them to recast the written comments they had made in the forum for the rest of the classroom as a way of initiating the day's discussion. Whenever these instances of information transfer occurred, the activity in the forum raised visibly during the next few days, and, in a few weeks, some of the shy students whose voices had only been heard in the forum, were also participating in general face-to-face discussions. They continued to do so for the rest of the academic year.

Not only did students improve their participation rate (for the most part overcoming the high levels of shyness and unmotivation I had seen the previous year when I taught the same course, where only a total of 8 students ended up participating in classroom discussions, and where no virtual forum was set up), students also increased their level of rhetorical and lexical sophistication. Most students made use of complex language structures and formulated high-level cognitive remarks in 65% of their contributions to the forum (see table 3).<sup>1</sup>

TABLE 3. CRITICAL THINKING AND COGNITIVE ENGAGEMENT ASSESSMENT GRID

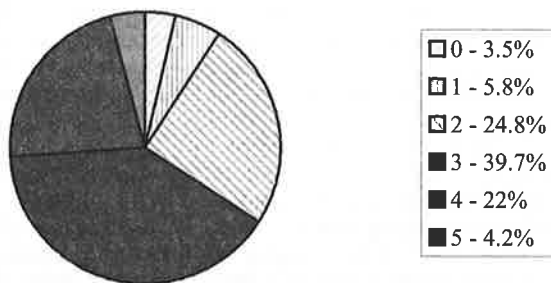
<i>Assessment of Critical Thinking and Cognitive Engagement</i>	
0. <i>Nonexistent:</i>	contribution is clearly plagiarized from textbooks or the internet with no acknowledgment of sources
1. <i>Insufficient:</i>	stands for no evidence of critical thinking and cognitive engagement with the material. The student seems distracted or merely adding an irrelevant or repetitive (and isolated) posting to increase his/her number of contributions.
2. <i>Low:</i>	student contributes a repetitive idea but actively addresses a previous remark showing at least acknowledgement of other students' contributions, and therefore, some interaction and participation in the construction of collective knowledge by supporting the ideas of his/her peers. Alternatively, student adds a link to another website, thus contributing direct external information to the debate.
3. <i>Medium:</i>	student contributes a new idea based on class materials, often heavily paraphrasing the instructor's lecture, but synthesizing it and adding a slightly personal view on the matter, which shows some reflection and active cognitive engagement.
4. <i>Medium-High:</i>	students show a high level of engagement with class material contributing personal insights that clearly stem from a thorough reflection on issues dealt with in class discussion, and or stemming directly from his/her own reading and interpretation of the texts
5. <i>High:</i>	student displays a high level of critical engagement with the material, providing extremely original ideas that come from his/her own interpretation of class material, and which engages previous postings and/or instructor's views in an argumentative and constructive manner.

<sup>1</sup> The percentages of high-level cognitive contributions to the forum are similar in the first and second semesters, therefore I do not include these in the provided figures.

Loosely based on Thomas's method to evaluate the quality of the collected data<sup>2</sup>, I have measured the cognitive level of students' remarks and the level of their critical engagement with the material according to a simplified but effective grid:

Out of a total of 183 postings, 141 (77.1%) were devoted to strictly academic issues and 42 (22.9%) dealt with a variety of additional information and tasks, among them, housekeeping issues posted by the instructor (5 messages), requests for peer-help on assignments, commentaries and exams (9), announcements and reviews of plays, performances and films related to class material (5) and social messages (1) (figure 2).

**Academic Postings**  
*Number of Messages and Level of Quality*



*Figure 2. Number and Quality of Academic Postings.  
Scale 0-5 refers to assessment grid in table 3*

As we can appreciate in figure 2, the percentage of academic postings that fall in the medium, medium-high, and high range (dark shades in figure 2) is significantly higher than the percentage of messages that were more superficially involved with class materials. 65.9 % of student academic postings show evidence of a high level of student cognitive engagement with the issues dealt in class, with the assigned texts, and with each other's ideas.<sup>3</sup> Most postings also show a medium-high degree of critical thinking, presenting embryonic or highly developed ideas that

<sup>2</sup> Thomas uses three models: Biggs and Collis's SOLO taxonomy (Structure of Observed Learning Outcome, 1982) to measure the level of cognitive engagement; Norris and Ennis's method to evaluate critical thinking (1989), and Henri's model to classify the students' level of interaction with each other (1992). For a more detailed description of the original models, see Thomas (2002).

<sup>3</sup> These postings, which show a higher degree of cognitive engagement and student interaction, are assigned to levels 3, 4 or 5 in the grading scale (table 3). They are represented with dark shades of colour in the chart (figure 2).

were later transferred to classroom discussions as we will see in the next section.

Moreover, this high level of cognitive engagement and reflection also manifested itself in students' classroom interventions and in their final exam, where students had to formulate short essays relating ideas dealt with during the semester. Of the 31 students participating in the forum, 29 passed the final exam, and only two failed. Some of these students, who had been merely having an average of 5-6 out of 10 in their early assignments, pleasantly surprised me with their critical reasoning in the final exam.

### Online Learning Teams (OLTs) versus Face-to-Face Teams (FTF)

Most empirical studies show that FTF teams still outperform OLTs, achieving better results in issues such as collaborative analysis and decision-making (Liu and Burn 2007). However, electronic communication clearly shows a complexity of syntactical, lexical and rhetorical resources that make it stand out as an efficient communicative bridge between oral and written modes of discourse (Warschauer 1995). Although messages in a virtual forum do not show evidence of oral communicative interaction features such as recasting, confirmation or paraphrasing, contributions in a text-based format can be later transferred to the physical classroom and transformed into engaging oral discourse. Warschauer explains that electronic discussion offers a more equal opportunity to participate and «express ideas» that can be saved and later reviewed, being therefore ideal as a «prelude to oral discussion» (1995-6: p.22). After an analysis of my results, I can affirm that direct interaction between the two literacies (encouraged by an instructor who asks students, for example, to recast their forum's contributions orally in the classroom) can help students take advantage of the rhetorical and lexical competence developed in the electronic medium to improve their oral argumentative skills in face-to-face exchanges.

During the past year, in my course *Pre-19<sup>th</sup> Century British Theatre*, I often witnessed a significant increase in the number of face-to-face contributions in classroom discussion as the result of a prior debate in the virtual forum. This increase was most apparent when students that led such virtual discussions were openly commended by the instructor, and when their insights were directly incorporated into the weekly lecture's plan. After using the forum for three months (table 1), the number of students actively contributing to face-to-face classroom discussion on a weekly basis went from 5 to 19, with approximately 6 of the latter (often shy) participating more sparsely, but gaining ground.

We should of course bear in mind that such increase in the number of oral contributions also stems from the obvious fact that students were progressively more relaxed and felt more comfortable with one another and with the instructor. Nevertheless, brainstorming ideas in the forum prior



to a lesson, together with the instructor highlighting specific forum contributions in class and incorporating them into the general lesson plan or as platforms to open further face-to-face discussion, generally led to an increase in face-to-face participation the following day. Therefore, the virtual forum was a key tool in fostering face-to-face participation, motivating students to engage the materials individually and to share insights with one another in a collaborative manner.

### “Group Etiquette”: Establishing protocols for threaded discussion

As Thomas points out, the form of the forum itself does not inherently promote meaningful and high-level interaction. Interactivity (that is, students actively engaging each other’s postings in a coherent manner that leads to the construction of personal and collaborative meaning, so that discussion threads do not become “poorly interrelated monologues”) needs to be learned (Thomas 2002: p.359). In fact, out of the 183 postings, 46 of them, roughly 25%, were self-standing, isolated contributions with no direct response to a thread (table 4). To increase the number of argumentative interactions that lead to the construction of collaborative knowledge and the negotiation of a viewpoint, the instructor needs to be an active “facilitator” of the discussion in the forum. For example, the implementation of some guidelines of forum use, user protocols or, as Richards calls them “group etiquette” (2000), is absolutely necessary. These guidelines will obviously be adapted to the objectives set by the instructor regarding the forum and its role in the course. It is very important to be clear with one’s expectations from the start, emphasizing to students that they ought to avoid plagiarism and any offensive remarks, that they keep their contributions non-repetitive, focused, *engaged with previous discussion*, and concise. Either the instructor or any student-assistants acting as “facilitators” (that is, forum moderators either spontaneously acting or previously appointed) are a pivotal axis that enhances the dynamism of the forum and determines its potential success or its failure.

TABLE 4. AVERAGE OF POSTINGS PER THREAD

<i>Self-standing Postings</i>	<i>Postings with one response</i>	<i>Postings with two responses</i>	<i>Postings with three responses</i>	<i>Postings with four responses</i>	<i>Postings with five responses</i>
25.1% (n=46)	12.5% (n=23)	7.1% (n=13)	2.7% (n=5)	2.2% (n=4)	1.1% (n=2)

In his article, “Encouraging Online Participation”, Wing Lam suggests several methods to make online contributions more effective (2004). Among them, I would like to highlight those I made use of last

year. These are the active role of the instructor as facilitator of the discussion, guiding the students, rather than providing definitive answers; the use of assignments that relate discussions to class materials (such as sets of questions, case-studies, or “for-and-against” exercises to foster debate), and finally, the need to assess the quality of the contributions in some manner while avoiding forced participation (which generally leads to a saturation of lower quality postings that end up not being read). Lam also emphasizes the importance of keeping an “informal area” for house-keeping issues and more relaxed social interactions as a way to enhance the classroom’s process of “community building,” a thread that works specifically as a “literary coffee house” of sorts, familiarizing students with each other and keeping the other threads strictly academic.

Although the instructor may be tempted to plan the discussion beforehand, assigning categories and themes to threads to make the forum more coherent, most studies seem to prove that flexible, free-formed contributions with a basic set of principles of use, is the method that leads to the most postings.<sup>4</sup> Instructor’s assessment is quite necessary and can be easily developed through an ‘assessment of quality’ grid that students could be aware of from the beginning (table 3). Peer-assessment and open evaluation of postings however, even if it saves time for the teacher, many not always be effective. For example, in a recent study, Flowers and Cotton came to the conclusion that graduate students categorizing their online discussions (following a classification that assessed the postings on the basis of their function, skill and level), immediately led to decrease in the number of postings, although it raised to some degree the quality of the subsequent contributions (2007: p. 93).<sup>5</sup>

Although the instructor is a key figure as facilitator of knowledge in the forum making sure that individual contributions and collective threads are meaningful and coherent, and transferring some of the most important insights to the classroom to foster face-to-face debates, students can also act as facilitators. The use of students as forum aids and synthesizers of information for their peers can be extremely effective in two ways. On the one hand, they ease the role of the instructor in the forum (as weekly monitoring tasks through the threads can be extremely time-consuming). On the other hand, this practice forces students to contribute actively to the transfer of online information to a face-to-face environment, thus contributing to the enhancement of their cognitive engagement and collaborative skills in the oral delivery of the written output.

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<sup>4</sup> See, for example, Moore’s and Marra’s 2005 study, which proved that imposing a “constructive argumentation” scaffolding method (where each participant labeled their posting according to a set of pre-given “subject headings”) on the forum to increase and guide the building of personal knowledge, mostly inhibited students from participating often, and clearly limited rather than enhanced debate.

<sup>5</sup> For a positive study that analyses peer-assessment and peer-assisted-learning (PAL) in the virtual forum see McLuckie and Topping (2004).

Hara, Bonk and Angeli have in fact devised a method to enhance the structure of classroom interventions: the “starter-wrapper” (2000). Through their method, the students take roles and are, in turns, in charge of initiating discussion and wrapping a thread. That is, students can monitor and summarize the postings during a given amount of time (a week, for example) and then present their results to the rest of the classroom at the end of such time, with the possibility of initiating a face-to-face discussion with contributions from other students in the classroom.

Overall, the forum proves to be an effective cognitive tool that generates creative and meaningful interactions among students who often are not acquainted with each other in the classroom, as well as with the instructor, thus helping to foster a non-hierarchical environment in which all participants learn from one other in a multi-directional and transversal manner that has a direct and positive effect on subsequent classroom debates and face-to-face peer/student/instructor interactions.

## Conclusions

To conclude, I would like to offer some suggestions for a more effective monitoring of the forum. In the first place, we should bear in mind that in measuring the success of the postings it is important to use a qualitative and not a quantitative approach that assesses the degree of critical thinking and true engagement with the materials. Moreover, it is important to warn the students from the beginning (including it in the forum’s guidelines of use) that plagiarized comments from websites, textbooks or any other unacknowledged source will not be tolerated.

We should also take into account that the students’ heavy work load often prevents them from participating often, and that specific forum discussions (that is, assignments, case-studies or focused tasks that are provided by the instructor and are to be discussed in the virtual space) should be set for weeks when there are no exams or any other deadlines that aggravate academic pressure.

As the above results have shown, the use of the forum contributes to increase the students’ syntactical and lexical ability in the classroom. Posting in the forum improved the students’ formal style and rhetorical skills; it also enhanced students’ confidence in their oral skills and minimized their shyness by increasing face-to-face participation by almost 20%. Virtual forums thus contribute to improve students’ cognitive engagement with the subject matter, their critical thinking skills and, through the transfer of student output from one medium to the other, increase students’ oral participation in face-to-face academic discussions.

Finally, the use of virtual forums also helps students develop collaborative skills that will be crucial in their subsequent work life, as online communication and forums are a key component of the organizational strategies of most teams and organizations today. Virtual forums help us transform our learning culture from one of teachers carrying all the *in-*

formation on our shoulders, to one of active students constructing knowledge, and developing grounded criteria, critical thinking and problem-solving skills that they can apply to navigate the social text.

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