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# Collaborative Learning and the Importance of the Discussion Board

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## Abstract

Distance education appears to be a relatively new idea to many, yet its roots are at least 160 years old. A number of formal diagnostic medical sonography programs are adopting this learning vehicle; therefore, more avenues for educational success are being encountered. One instructional tool often implemented for both asynchronous and synchronous courses is the discussion board. This article describes the various aspects a discussion board can lend to enhance the sense of a learning community.

## Keywords

asynchronous course, collaborative learning, discussion board, distance education, instructional methodology, trends in education

Distance education as an educational method affects learning locations, whether it is in our homes, offices, libraries, or traveling far away from established campuses; and it has become an adjunct to complement classical learning in classrooms. As distance education continues its journey toward and through formal diagnostic medical sonography programs, it has become necessary for educators to recognize and learn new skill sets, as well as embrace novel technologies and implement them when necessary. Regardless of the physical distance between students and instructors of distance education, communication technologies embedded in many course management systems offer numerous opportunities for interaction and communication among these groups. One of these communication technologies, called the discussion board forum, has been the impetus for this article. This work attempts to describe from an instructor's perspective what a discussion board is and its key role in the distance education setting, as well as provide creative ideas on how other diagnostic medical sonography programs may consider its implementation into their course content.

## Discussion Board Defined

An Internet forum or message board is an online discussion site that allows users to generate text content at any time of day covering any type of subject matter. This Internet forum concept has migrated into many educational course management systems (CMS) and is often referred to as a

discussion board, discussion forum, bulletin board, or message board. This type of communication allows individuals to post comments or questions within the course management tool or online course and permits others to answer their questions or generate their own remarks to post for others to view. When a person posts a question (whether it be the instructor or student), and others respond in the context of an answer or comment, this written dialogue between all those involved becomes a thread. A single discussion board thread allows for efficient organization of the online conversation. Therefore, a "threaded discussion board" refers to multiple threads of conversation, each dedicated to a particular topic or idea that is commented on during a designated timeframe.

Discussion boards are typically built for asynchronous courses, in which the students and instructor are separated geographically with instructional events occurring at different moments over an extended time period. An example of asynchronous communication (besides the discussion board) is the conventional use of e-mail. Synchronous distance education courses occur with the instructor and students residing in different locations, but verbal and even

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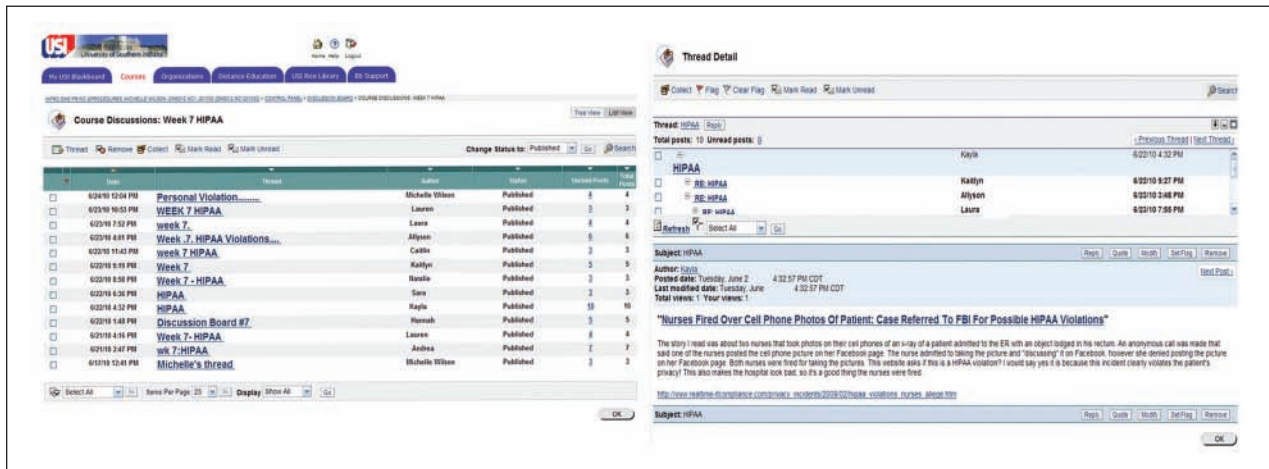


Figure 1. Discussion board threads.

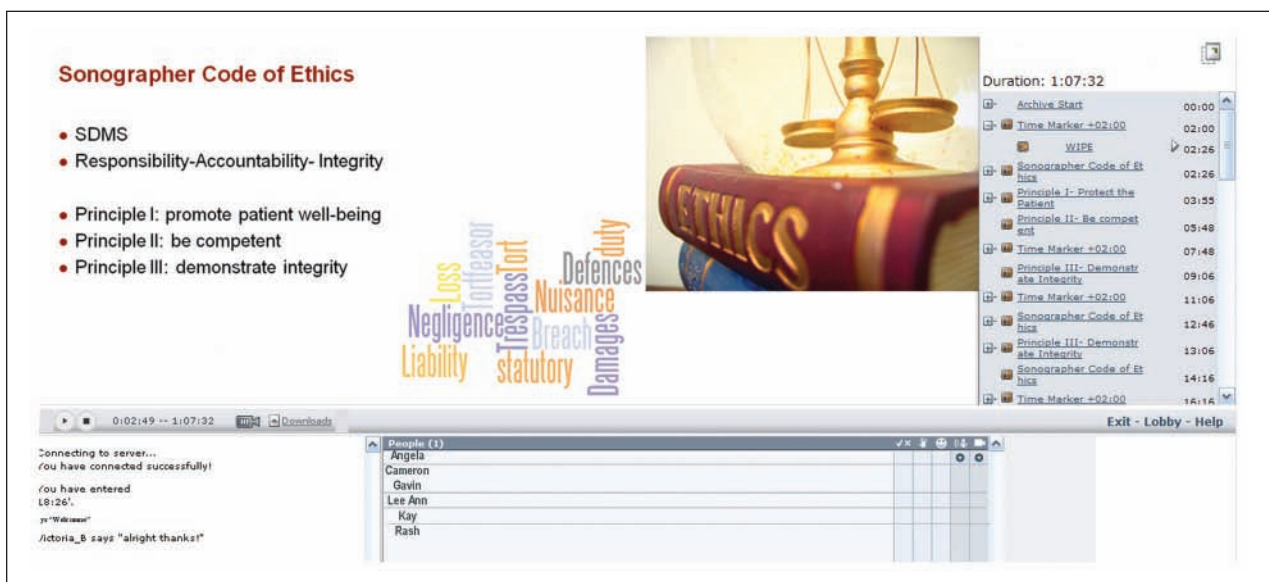


Figure 2. Synchronous presentation.

written discussions occur at the same time. An example of synchronous communication comes in the form of real-time chat or instant messaging. Figure 1 represents an asynchronous threaded discussion on the topic of the Health Insurance Portability and Accountability Action Act. Figure 2 is an example of a synchronous course being delivered in real time, with audio and visual components, instant messaging in the lower left corner, and student-to-instructor interaction occurring simultaneously.

The discussion board is a useful avenue for interactive communication, increasing critical thinking skills and providing feedback among class participants. Instead of one or two students responding to a discussion topic during a face-to-face meeting or a synchronous environment, all students are able and expected to participate by responding

to threads and comments. As students post replies to the thread, an educational “dialogue” ensues. Mandatory discussion board participation is imperative to eliminate situations in which some students passively listen while one or two outgoing communicators respond to questions posed by the instructor. With time on their side, students are able to research and generate postings that are given more consideration than a verbal response and ultimately contain multifaceted concepts. In addition, students are able to read and reread each other’s posts for supplementary concept comprehension. While absorbing more information from different sources, students begin to compare and evaluate peer posts, leading to higher levels of critical thinking. Since the response to the discussion topic is made in writing, students are able to deliberate and detail their own

message posts, gaining confidence and understanding of the subject matter.

With an element of peer pressure to present relevant, accurate information that embraces understanding about a particular subject, typically more views and various insights and opinions are expressed. The discussion board community contrasts with the traditional teacher-led dissemination of subject matter and allows for the extension of discussion to move beyond the classroom and even beyond expected dialogue of some subject matter. This type of peer feedback differs from instructor feedback or critique, which is almost an expected finding in a formal educational setting.<sup>1-4</sup> Besides the peer evaluative atmosphere, students are able to assess their contributions and others' responses to their ideas and thoughts. Students tend to notice their communication shortcomings when others are relying, noticing, and commenting on them.<sup>5</sup> Self-assessment has been written about extensively in the literature, with the fundamental notion that this process is considered one of the most important skills students require for effective learning and for future professional development and lifelong learning.<sup>6</sup>

## Discussion Board Activities

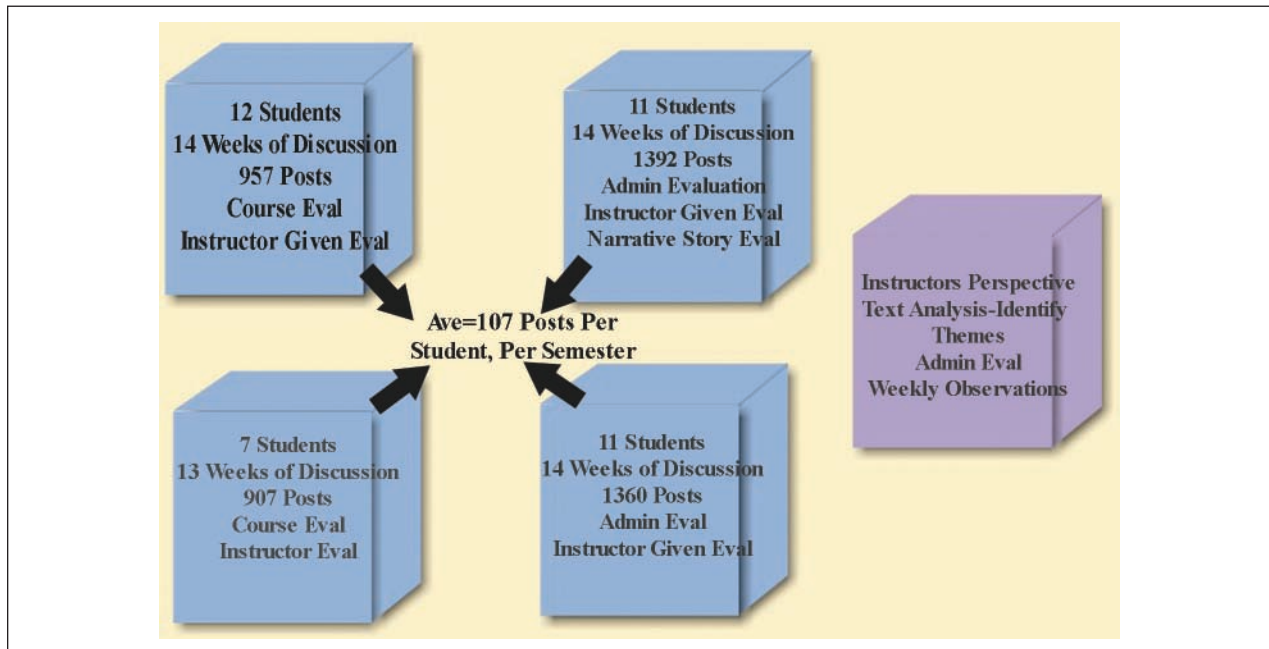
Within the discussion board forum, there rests a plethora of opportunities for critical thinking activities. The student must spend time questioning and defining solutions to problems posed, respond to peer works, collaborate on group projects, and discuss specific topics or items. Using pointed questions of inquiry directed toward different students or even student groups, the roles of student leaders tend to rotate, giving each student the experience of leading discussion topics. Engagement in the learning process leads to autonomy as each student builds genuine comprehension of the subject matter.<sup>7,8</sup> As sonography students use the discussion board, they tend to develop skills that promote learning while encouraging themselves and their classmates to gather additional resources that are relevant to the area of study. A significant attribute of student-led discussion board forums has been the development of skills and the fostering of confidence to become researchers in the field of sonography.

Although multiple educational activities might be carried out on a discussion board, the following lists successful options. A discussion board grading rubric is included (see the appendix), as students tend to meet and exceed instructor expectations once those parameters have been clearly defined.<sup>8</sup>

1. *Directed discussions.* Require all students to make an initial posting of their ideas on a specific topic or item the instructor posted. Each student must respond to a set number of his or her peers' postings within a certain timeframe.

2. *Group work.* Divide the course into groups of students, working collaboratively on answering a posed question. Replies to another group's posts may be done collaboratively or individually.
3. *Summary.* Following initial posting of student replies to a set question, students must create a synopsis of the important points learned from the responses of their peers.
4. *Writing workshops.* Students can post an essay or paper (or their initial draft) on a given topic. Each student must read and respond to his or her peers' works. Encourage students to consider their peers' thoughts prior to turning in their final essay or paper.
5. *Brainstorming.* Encourage free writing drafts or brainstorming on a topic not yet discussed but eventually covered in class.
6. *Referencing.* Require students to research and post information on a particular subject matter. Included should be the full reference information, as well as a summary of what the student found to be the most interesting aspect of the reference material.
7. *Debates.* Divide the class into groups or teams to research issues that have varying perspectives. These may be in contradiction to other groups or complementary. As differences in opinion occur, students ask others to explain reasoning or defend views. With some subjects, the instructor or moderator can assist students in developing a consensus position.
8. *Student presentation critiques.* Students post a presentation (typically a PowerPoint presentation) on an assigned topic and include "student notes" and a "quiz" on that subject matter. Peers must comment on their work, as well as ask for clarification on items not completely understood. Questions from the presenters' quiz may be included in course assessments.
9. *Internet references.* Require each student to research and review specific bodies of knowledge available on the Internet and discuss why they found that site to be pertinent or important. In addition to a summary and reference of the material, the Web links for peers to review should be provided.
10. *Mentoring or "coffee shops."* Begin a course thread to be used openly and freely. Students can ask questions of peers throughout the semester, as if they were casually having a cup of coffee together in a cafe.

These activities have been particularly successful at our institution and may be related to research that has shown



**Figure 3.** Evaluative methods used to assess efficacy of discussion board.

that the utilization of online searching strategies is positively related to students' outcomes in Web-based learning tasks.<sup>9,10</sup> Another feature of discussion board forums is their ability to generate self-efficacy in Web-based learning. *Self-efficacy* refers to an individual's beliefs, confidence, and expectations in his or her competence to complete a task,<sup>11,12</sup> and it has been found that an individual's self-efficacy about learning is significantly related to his or her learning behaviors and performance.<sup>13</sup>

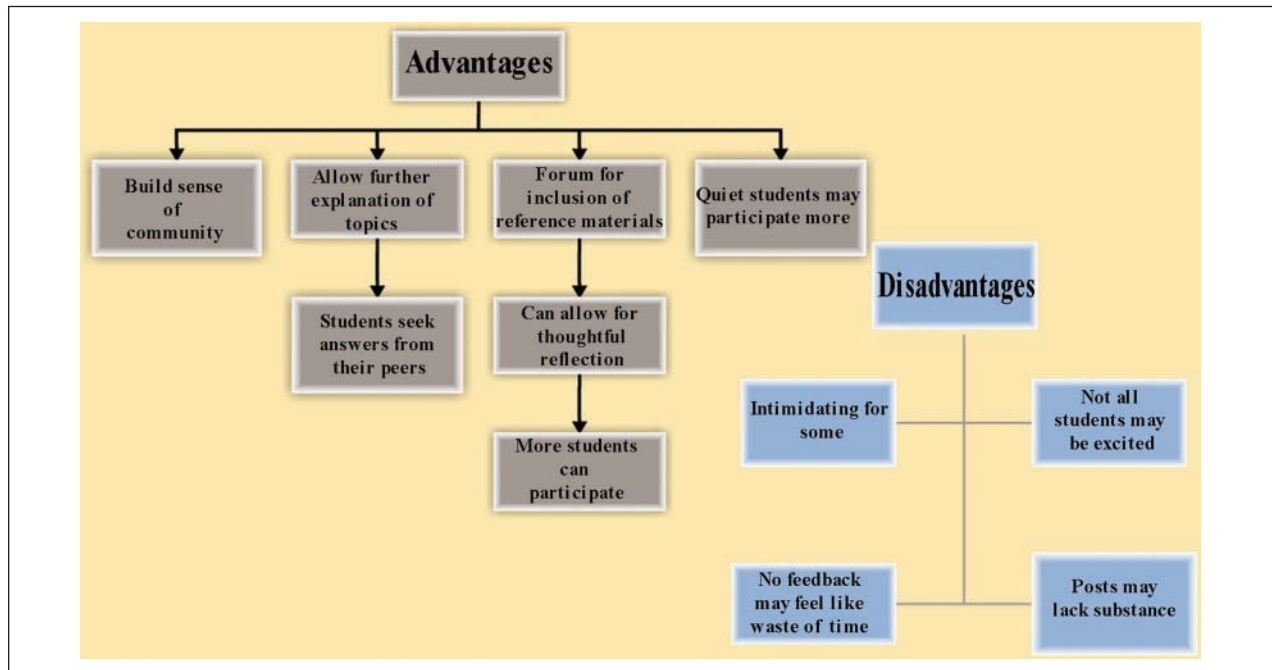
### Instructors' Experience

Multiple evaluation methods for both students and instructors were used to obtain a comprehensive view of procedural and outcome measurements regarding the use of discussion board forums. This information was collected over four semesters and analyzed in a qualitative manner in an attempt to focus on understanding the experiences from the students' point of view. Evaluations included items such as open-ended questions sent by the instructor to students ( $n = 41$ ), course evaluations designed and collected by college administration ( $n = 41$ ), narrative stories written by students to incoming students who will soon take the same course ( $n = 22$ ), and text analysis and observations of student posts during the four semesters ( $n = 4416$ ). See Figure 3 for a summary of the evaluative methods applied. Although qualitative evaluation implies an emphasis on processes and meanings over measures of quantity, intensity, and frequency, probably the most staggering realization of the importance or value students place on this communication tool came when the students were assigned

a condensed project because of a holiday break. Within the confines of two days, 11 students were tasked with presenting specific fetal conditions to their peers on the course Web site. After returning from the break, it was noticed that more than 384 posts had been made while the students were scheduled off, allowing for a good deal of critical thinking and collaboration among themselves.

In the authors' experience, the progression of discussion board comments, contributions, and critical thinking skills tends to progress over the interim of each course. As courses commence, it is often necessary to remind students to provide "meaningful" feedback as opposed to superficial "pats on the backs." Substantive feedback eventually becomes the norm, and students begin to engage in more of a knowledge generator role. In fact, the tone of the course should evolve into a student-driven atmosphere on the discussion board, needing little instructor redirection or focusing. In other words, students begin to understand the course content for themselves and eventually, in their own roles on the discussion board, become the disseminators of this knowledge with their classmates. Learners naturally will inquire, construct knowledge for themselves and their peers, and become more self-directed—all necessary components of learning to learn<sup>14</sup> and becoming competent sonographers. As Palloff and Pratt<sup>8</sup> stated, "The failure of many online distance learning programs has been the inability or unwillingness to facilitate a collaborative learning process."

The discussion board is a tool that constantly encourages collaborative learning. In recent experience using the discussion board, there have been consistent variables encountered (Figure 4). The advantages include the



**Figure 4.** Potential advantages and disadvantages to using the discussion board.

opportunity to build a sense of community. Often the students feel as if they have more opportunities to connect with not only their peers but also the instructors, simply because another communication pathway has been provided. Students are motivated to further explore topics of interest and include reference materials. Inhibited students have a forum to be heard and often seek answers or provide answers to their peers. The discussion board becomes an avenue for students to be thoughtful and reflective in their responses. Some disadvantages that have been identified include an intimidation factor, mainly for those students not comfortable sharing their responses or thoughts to peers. Some students may not be as excited or have a passion for this type of learning activity. There may be a lack of substance in the responses; at the same time, others may begin to feel like posting is a waste of time, especially when they receive no feedback from their peers or their instructor.

### Students' Response to Discussion Board Utilization

By working together, students share their resources and new knowledge and often obtain a deeper understanding of the material being studied. Using the phenomenographic method of analyzing student surveys regarding personal experiences with the discussion board, several revelations were realized. One student submitted this comment: "It really did increase the sense of a community. I was able to draw on the knowledge and experience of the other students, and the teacher. It was extremely helpful having this outstanding resource."

This affirmation was also evident when correlating very active discussion threads within a particular week and the thoroughness and extensiveness of knowledge assembled on that week's homework assignment or assessment.

An exciting and unexpected result of the discussion board community is student participation when not required per course schedule. For example, there were times when a class would be working on a different collaborative activity not involving the discussion board, yet students would continue to create posts on the discussion board, with others quickly responding. When asked why or what their motivation was, a common response was, "As my learning continues I become excited about a body of knowledge or a good Web site I discovered, and want to post this for everyone else to benefit from." The discussion board has proven to be a very enriching collaborative learning environment in which students feel safe to grow and expand their knowledge base.<sup>5,8,14,15</sup> Another student submitted this response: "Each student was able to learn from one another. When a classmate explains a concept in his or her own words, sometimes this is just what another student needs in order to be able to grasp the concept. Students were also able to get to know one another much better."

### Conclusion

The development of an online community using the discussion board requires constant attention to community development, respect, and a good deal of learner responsibility—all valuable attributes sonographers tend to possess. A successful learner in an online environment is active and engaged

in knowledge generation. The discussion board holds the potential to unlock a great sense of scholastic achievement, peer learning, and social and communication skills. As sonography educators require students to take responsibility for individual learning ventures, the discussion board can provide extensive opportunities to strengthen higher levels of critical thinking. Instructors not yet using discussion boards should be encouraged to incorporate them whether in a face-to-face setting, synchronous format, or asynchronous environment and consider the impact they may have on a course and its students.

## Appendix: Sample Discussion Board Rubric

### Discussion Board Assignment

Class participation is an important expectation of this course. Students are expected to offer comments, questions, and replies to the discussion questions(s) that have been posed for each module as well as to your classmates' postings.

In a class that relies heavily on discussions among peers, the quality and quantity of student posts become assessment material (as you can see from the syllabus, your discussion board participation is weighed as heavily as your homework and exams). Assignments and exams are reviewed separately; all are averaged at the end of the course. As a final point, I view discussion board points or assessments as part of attendance and participation. Participation is earned, with every student having the opportunity to earn the full potential every week.

The faculty role is an observer and facilitator. I will be reading all messages, and I will participate in the discussion as appropriate.

### Evaluation of Assignment

The following points are what is looked for in your original postings to the discussion board and your replies to others postings (total of 10 points for each discussion board

assignment). Participation in discussion board activities can only be measured by the date on the discussion posting. For example, participating three times during the week is measured by posting on three different days; there may actually be five to six postings, but participation only occurred three times during the week.

#### Original Posting (7 points):

1. Mentions at least two specific points from the article or reading. (2 points)
2. Relation of new information to old information learned in the course to date. (2 points)
3. Relation of information in an article or a reading to personal experience. (1 point)
4. Discussion at a critical level, not just recitation of facts from the article. (2 points)

Note: Discussion at a critical level means discussing things such as your opinion of the point mentioned, why you hold that opinion, how you see the point consistent/inconsistent with what you have learned so far, implications for the future, and so forth. In other words, critiquing an article means analyzing the good and/or bad aspects of the article and justifying your analysis.

#### Reply to Others' Postings (3 points):

1. Discuss one point you like/agree with and one point you dislike/disagree with and why. (2 points)
2. Length should be approximately 50 to 75 words.

No participation in a discussion board activity will result in a zero for that activity.

I also want to emphasize the importance of treating each other with respect on the discussion board. This is not an area to judge others or their thoughts—it's a platform for all of us to learn from one another. Each of you is responsible to yourselves and your classmates in helping each other learn the subject matter. I will purposefully wait to respond, in hopes that one of your classmates will help you better understand the concepts, from a student perspective.

Category	Excellent	Satisfactory	Requires Further Effort
Quality of information	Information clearly relates to the main topic. Contributions are thoughtful and relevant to the discussion.	Information clearly relates to the main topic.	Information has little or nothing to do with the main topic or simply restates the main concepts.
Participation	Responds to the instructors and other members of the online community. Encourages and facilitates interaction among members of the online community.	Responds to other members of the online community.	Responds to the instructor only.
Sonographic vocabulary	Professional vocabulary and writing style are used consistently throughout the discussion.	Professional vocabulary and writing style are used frequently throughout the discussion.	Professional vocabulary and writing style are occasionally used.

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